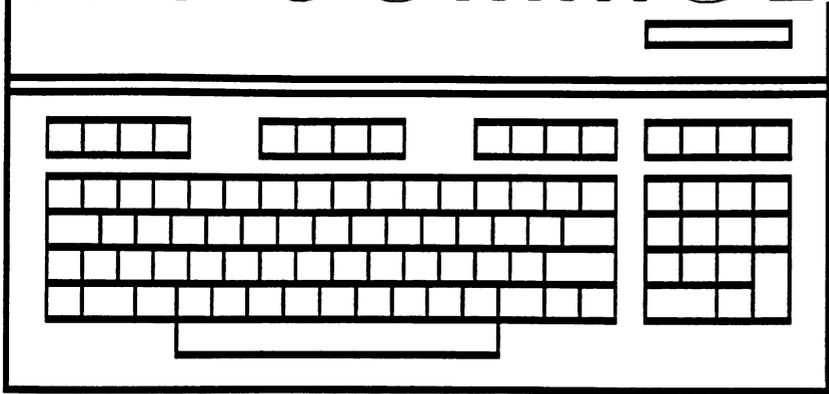


TWIN CITIES 128

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*The COMMODORE 128
Journal*



Issue 27

*A first look at CMD's new
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CSDOS V.4

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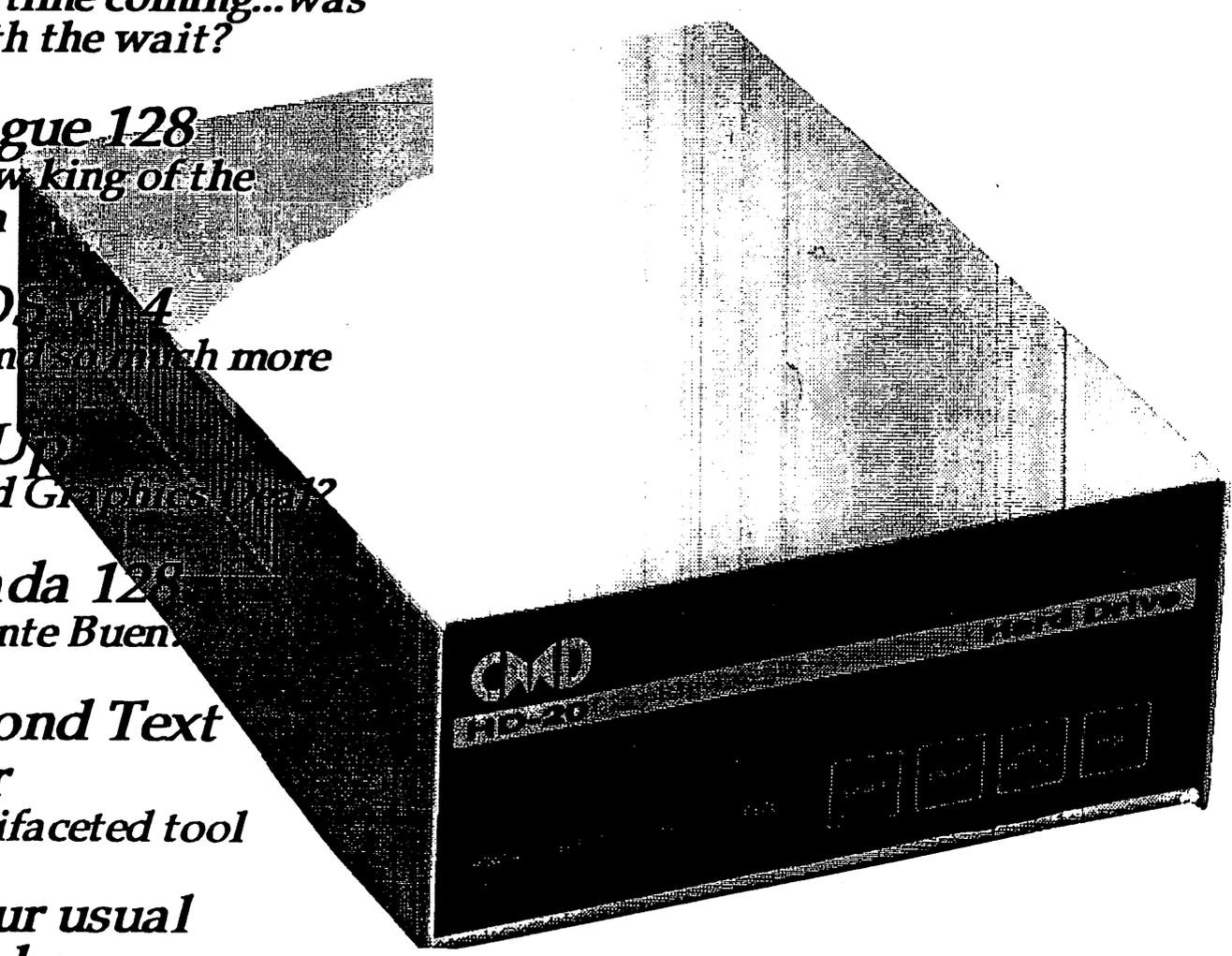
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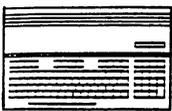
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Editor

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*Plus our usual
brouhaha*





Issue 27 Arrives, Finally!

Here it is, the long awaited issue 27 of Twin Cities 128! I can't tell you how good it feels to send this issue off to the printer. I want you to know that I am painfully aware that many of you have been anxiously awaiting this issue to arrive. Frank, Avonelle, and I have languished over the delay as well. You see, we love producing Twin Cities 128, in fact if we had our druthers we would produce an issue each week! Unfortunately, that is simply not possible, as much as you and I both would love to see it happen. Some people have pointed out that in 1986 we were pretty much able to keep to a monthly production schedule, and wonder why we can't do that now? Well, the short answer is that today things have gotten a lot more complex than they used to be. Back in 1986, each of our issues: contained about 35% fewer words, were rarely checked for spelling and grammar, and were read by only a few hundred people. Back then we did not pay our authors, or anyone for that matter, including myself. All of this means that today "doing TC128" involves a lot more than firing up a word processor and dumping our thoughts to pages. Today we spend a great deal of our time, maintaining our database, filling orders, shipping orders, doing payroll for authors and employees, filling out state and federal tax forms, in addition to evaluating new C-128 hardware and software, maintaining a presence on Q-link, developing new C-128 programs and usage techniques, editing and proof reading our text. It is really frustrating to have to spend so much time working on all of the ancillary things that are necessary to keep the operation legal and solvent, instead of committing those hours to the production process itself. However, if we don't spend our time doing those things (or if we over-extend our budget paying lawyers and accountants to do these things) we will most certainly go the way of Ahoy!, Transactor, Commodore Magazine, publications which used to offer Commodore eight bit coverage but now have gone out of business. These frustrations are not unusual, to the contrary, they are quite typical of small businesses everywhere, and therefore I am not asking for your pity, or even your understanding. However, I do want you to know that our days are far from idle, instead we are working hard so that we can continue to bring you the best C-128 coverage you will find anywhere. We are also working on new ways to provide you with new C-128 related products and services as well as enhance profitability so that we can increase our staff size as well as regularize our publishing schedule. Due to the success of our compendium book, for instance, both Frank Hudson and I are now able to work full-time in this venture and with the upcoming release of our second book, 500 C-128 Questions: Answered, and other projects we are hopeful this success will continue.

--Loren Lovhaug, Managing Editor
--Avonelle Lovhaug, Associate Editor
--Frank Hudson, Factotum

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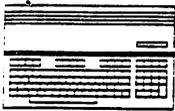
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Thank You For Your Continued Support And Patronage



Rumor Opinion & Mayhem

by: Frank Hudson

My topic today hits very close to home, the one referred to in political circles as the "appearance of conflict of interest". At no point should you assume that I have knowledge of "real" conflict of interest around here. I don't. Furthermore, because several of the conflicts I'll talk about are common throughout our industry, I wouldn't assume that TC128 or more generally, the Commodore software community, is particularly susceptible to them. After all, it's my hope that because we are brave enough to talk about these issues as they apply to TC128 and its parent company Voyager Mindtools here in front of you that you will understand that we are concerned about these points.

There are several ways that such conflicts or suspicion of conflicts can occur. One, as it occurs to many skeptical readers and consumers, is the thought that a magazine can be "bought" for the price of an advertisement. Computer magazines, like almost all periodicals, rely on advertising receipts for a portion of their revenue. In the case of TC128 this revenue is relatively small compared to our chief funders, which remain you, our dedicated readers. Frankly, we'd like to keep it that way. We do only a minimal solicitation of advertisers (we mail out letters once in awhile to firms we think might want to reach C-128 owners and ask if they'd like to advertise with us) and while our advertising rates are profitable for us, they are set purposely low enough to allow smaller C-128 developers to use TC128.

Does placing an ad guarantee a good review, or even any review in TC128? Long-time readers can probably answer this one for us, as we have given mixed to unfavorable reviews of products offered on our pages. The worst charge that could be leveled against us is that we are predisposed to reviewing the products advertised on our pages - but then we at TC128 are predisposed to looking at most anything that works with a computer! Review copies of programs or hardware (de rigueur in computer journalism) will cause us to seriously consider reviewing the product. This practice is a very minor form of corruption when you think about it. If two software publishers are putting together word processing packages and we get one in the mail for review while the other title must be found and bought with TC128's limited budget; the latter is less likely to get reviewed, which may have nothing to do with its merits. Obviously, readers and consumers don't live like this, while it remains a fact of life for TC128, as well as for larger and wealthier computer magazines.

The second class of potential conflicts has to do with using reviewers who have outside programming or producer connections. Aren't such individuals inclined to regard their products as being superior to anything else out there on the market, and therefore capable of jumping all over any competing product, if for no other reason than it doesn't do things the same way their's did? This is a tough call, even if one holds the pure interest of the readers above all other considerations. After all, "the opinion of one's peers" is one valid test of a product's excellence, and in other areas (the arts and sciences, for example) review by one's competitors is customary. Still, giving the power of review to a principal in the development of a competing product is awfully chancy as far as fairness goes. I have no idea if it's a thought-out policy or not, but in general TC128 reviews have been assigned to people knowledgeable in the area's concerned, who are, however, not publishers or programmers of directly competing products. Other computer publications make other choices, although many choose to follow a similar rule.

The last area is a particularly sticky wicket. Across the home computer market there is a trend for publishers of magazines to become software publishers too. In the Atari area, Antic Magazine is one of the most important distributors of Atari software and they have recently begun to offer Amiga software as well. RUN magazine has in the past year issued several disk collections that contain products of commercial quality (e.g. geoTerm and Bloodstar). We even hear that long-time SpeedScript hawk and producer of the powerful C-128 SID Player Editor system, Compute! Publications, has a magazine or two in its product line! This conflict is an amplification of the problem above, as now the whole commercial marketplace, not just a reviewer, has a tie-in to software products who's competitors they then review. This is "the appearance of conflict of interest" with a vengeance.

Why do magazines voluntarily enter into this problem? A moment's reflections reminds one that among other things a magazine is a business

and businesses are run by businesspeople who see markets and attempt to serve them. Businesses like to grow and hire new people and thank God they do, or I wouldn't be here writing this! Now in particular, computer magazines often have among their writers some very talented programmers, and programmers are born to hack. A fellow like Rick Kane discovers some things about C-128 interlace graphics, and so we ask him to share them with our readers, the next thing you know he's writing a paint program, which will be called *I Paint*. After considering his options in the current 8-bit software market, he comes back to the place he has had an ongoing business relationship with and works out a distribution deal that he preferred to his alternatives. Result, TC128, a publication reviewing software, becomes a software distributor itself.

Would *I Paint* have been marketed if this agreement hadn't been reached? Knowing how Rick felt about the kind of deal he could get elsewhere it might not have. Or *I Paint* might have been released in a vastly more limited form as shareware, a partly finished product with no manual and shorn of scores of features that Rick added only after he was assured of the Voyager Mindtools distribution agreement. I can reasonably expect that the authors of Bloodstar, geoTerm, and even the venerable SpeedScript may have gone the extra mile as programmers too, knowing that they had a marketer ready to sell their product at a fair return to them. As fewer big time software houses see fit to support 8-bit computers including the 128, there is the strong possibility that we and other publications will continue to make similar deals. At TC128 we think that making available quality 128 products part of our commitment to supporting the C-128.

I'll let you in on a personal anecdote that explains how this sort of thing could get on one's ethical nerves. A couple of issues back, I reviewed a pair of paint packages for the 128, one of which (Free Spirit's Spectrum 128) is powerful and modestly priced. However, at the time I was looking at this package I had also seen early development versions of *I Paint*. Frankly, Spectrum had 20 times the practical power of *I Paint*, at that stage of *I Paint's* development. But *I Paint's* user interface was nicer (although not at that time fully functional) and the unfinished product promised to equal Spectrum in most respects while adding some exciting new features not available in Spectrum. Now if readers will put themselves in the place of the reviewer for a minute you'll probably see some issues here. Do I slag Spectrum for not measuring up to a package that wasn't finished? Of course not, that would be stupid, given that it is always easy to promise better than what others have already delivered. Do I tell buyers to stay away from Spectrum and wait for *I Paint* (assuming then that the *I Paint* program would be completed and marketed, which was not a sure thing at that time)? Again, I choose not to, but this could have been a more ticklish issue if *I Paint* had been closer to market or if it was already available and specifically, if was available from us. What do you as software buyers think? Would you rather I pretend not to have knowledge of forthcoming products, and thus be less than candid in serving as a guide to your purchases, or would you prefer that I be completely fair to the software producers who have gotten their products to market by not comparing them to products like *I Paint* that are on the C-128 horizon? In this case, I choose the former. If you wanted to buy a C-128 color 80 column painting program in 1989, Spectrum was clearly your choice, but now let's move forward to 1990. How convincing would an unfavorable comparison of Spectrum to *I Paint* be to the reader that knows that the latter product is distributed by the reviewer's employer?

So, will all this effect future reviews of paint programs? For myself, I'd bend over backwards to see to it that it didn't, and I'm sure Loren feels the same way. But now what about the "appearance of conflict of interest"? What will an author or distributor of a competing product that receives less than a rave review think about this situation? Will they say "Well of course they didn't like it, they're just trying to sell their own stuff to you instead." and more importantly, will you the reader, believe them when they say it? It's a tough issue, and one where TC128 readers will have to become reviewers themselves and judge our performance. It's my hope that you'll continue to respect our opinions.

I'm sure at times you'll disagree on a particular point or conclusion of one of our reviewers. We expect that, and tell our reviewers not to pussy-foot around their candid appraisals of products. I trust that you'd soon be able to tell if we were becoming a house organ for own products or slanting our reviews in an unfair way. As much as we humanly can, we at TC128 want to continue to provide a product whose only prejudice is one toward quality.



C-128 PRICE AND PROGRESS REPORT...

RAM-Alamma-DingDong

The Great RAM Scare of 1988-89 is dead and buried, good news for owners of all kinds of computers including the C-128. While many other systems require multi-megs of RAM to get any kind of use out of their "advanced" designs, the C-128 will chug along happily with the 128K it was born with, which is not say that serious users won't welcome the addition of a 512K RAM Expansion Unit. With an REU, disk-based operating systems like CP/M and GEOS begin to fly, data storage for the Pocket Series and RAMDOS supporting products like Dialogue and The Write Stuff become instant, and certain applications like Paperclip III and the Free Spirit 128 graphics programs display extra talents.

Twin Cities 128 readers were the first to become aware of a second kind of RAM expansion that provides the Commodore 128 with surprising additional powers: expanding the older flat 128's video (VDC) RAM to a full 64K as found in the C-128D. With the 64K VDC you get the ability to use programs that can display 400 line and above interlace graphics, giving the 128 owners graphics resolution similar to that of picture machines such as the Amiga, Mac, and Atari ST. Later this year you'll actually be able to create 640 x 400 screen resolution pictures on your C-128, and they won't just be Macintosh-like black & white either. Q-Linkers who downloaded Voyager Mindtools' Christmas Demo this December (and have 64K VDC RAM on board their machines) have already seen a preview. The old saw about the relative value of an image to a word count holds true here, so we won't waste words describing what you can look and see. The Christmas Demo is freely distributable, so besides QLink and GEnie you may find it on your local BBS or through your user group software library.

RAM-A-Rama

One of our advertisers, Software Support International, recently made us aware of a new RAM expansion offer which came in too late to be set into their ad. SSI distributes the "1750 Clone", an upgraded to 512K Commodore 1764 REU which functions exactly like the real 1750 REU. Owners of flat 128 who'd like to expand both kinds of RAM in their machines can order the 1750 Clone for \$199.95 and get SSI's \$49.95 plug-in 64K VDC RAM upgrade kit for free. We've put SSI VDC upgrades in our flat 128's ourselves, and it's easy to do. Opening up the 128's case is actually the tough part (lots of screws). The SSI kit includes everything else you need, just pull the old VDC chip out of its socket, plug in the upgrade RAM daughterboard, and then plug the original VDC chip back into the piggy-back socket on the top of the upgrade.

If for some reason you don't want to upgrade your VDC RAM or already have a 128D which comes with 64K VDC RAM from the factory, SSI will also pair a package of software with the 1750 Clone. The deal here is that you can choose any two of the following C-128 packages: BASIC 8, Newsmaker 128, Spectrum 128, BASIC 8 Toolkit, Sketchpad 128, and the Get the Most Out of BASIC 8 book when you buy a 1750 Clone. Those who use the 64 mode could alternatively choose a three title C-64 package of the Torch Bearer and Galactic Frontier games and the Drive Alignment Kit to go along with the SSI REU. For more info you can contact SSI at (800) 356-1179

There's some good software in there, but for those that still haven't expanded their 128 the RAM/RAM deal can't be beat, which is why we're giving them the free plug.

GEORAM Scam

For the past couple of months TC128 has been following the development of another RAM expander option, this one from Berkeley Softworks. Dubbed GEORAM, the model has from the first rumor been a 512K sized model usable on either the C-64 or C-128. The price was pre-announced at an attractive \$124.95. The crucial point we wanted confirmation on was what level of compatibility would it have with the established standard, the 1750 REU. TC128 readers know that Commodore has tightly held onto the rights to the proprietary DMA controller found inside the REU. This chip not only makes possible some of the impressive speed of data movement through the REU but is the "gate-keeper" device that allows REU supporting software to talk to the RAM chips in the expander. There was some speculation that BSW would attempt to write a software emulator that would work in concert with some other freely available chip to create a work-alike REU that would have some measure of compatibility with 1750 supporting applications.

As 1989 ended, the first GEORAM units were shipped and they are not at all 1750 compatible. As far as we are concerned this makes GEORAM a poor deal even at \$124.95. Although we use and like GEOS 128, there is a world of other applications out there which can also utilize expanded RAM. The 1750 (and of course other Commodore REU's like the 1764 and upgraded 1764's like the 1750 Clone) work great with GEOS while GEORAM works with nothing else. If knowing this, you disagree with us and chose to buy GEORAM, you can call BSW at 1-800-888-0848 and order yours today. Unfortunately, some consumers won't be making a very informed choice based on BSW's latest GEORAM ad.

Part of the process of advertising is putting the best and most exciting light on your products. In that regard most of us are willing to give companies some latitude to omit inconvenient facts or emphasize other parts of reality for the purpose of making their points. That said, the GEORAM ad as published in the recent installments of the glossy rags is over the line. This is a full page ad which still somehow fails to note the compatibility problem, unless you can count the sly locution "Developed exclusively for GEOS-equipped Commodores" as fair notice that it won't work with anything else. Most egregious are the bold face testimonials placed inside the ad from the independent press. Three of the four "reviews" are from publications that are no longer in the business of Commodore coverage at the time of GEORAM's arrival, and so therefore cannot possibly be reviewing GEORAM! The remaining comment is from RUN magazine, but despite all the ellipsis in the quote, the RUN writer is referring to either the 1764 or 1750 REU, not GEORAM, and apparently means to praise the Commodore REU's as a wide-ranging C-128 improvement (benefiting among other things, GEOS). While the other quotes are concentrating on the use of REU's with GEOS, their purchase recommendations must be for the Commodore REU's not then non-existent Berkeley model, and therefore presumably (even if tacitly) included in their judgments the real REU's value outside of GEOS.

Come on Berkeley, if you are so sure GEORAM is a good deal, tell the plain truth about what you can use it with right in your ads, and sell it on its merits, not on the 1750's!

Bigger Brown Boxes

Another development brought about by the end of the RAM crisis is the introduction of larger models of the Quick Brown Box line of battery-backed RAM cartridges. These little babies are about the size of a conventional utility or fast-load cartridge, and unlike conventional RAM expanders such as the 1750 or GEORAM, they hold their data, even when they are detached from a 128 and slid into your pocket. The new Brown Box sizes are 128K and 256K. New prices too: 64K QBB, \$99; QBB-B (see below), \$95; 128K QBB, \$189; 256K QBB, \$289.

Shipping at the same time as the new boxes is an upgrade of their support software which allows a special edition 64K QBB (the QBB-B) to work together transparently with the older 64K QBB's as if they were a new 128K Brown Box. No, the Brown Boxes are not 17XX REU compatible, but they can coexist with an REU on a Aprotek multi-cartridge strip and they do not conflict with RAMDOS. Since they hold their data, your favorite piece of software can be loaded one final time from disk and from then on, it pops instantly in from the Brown Box's RAM. It's as if a custom cartridge manufacturer had set up business in your 128.

So the whole Brown Box concept is different from the Commodore REU's or GEORAM. Let's see, a 1750, 64K VDC RAM, an Aprotek cartridge expander, a Brown Box (no, two, yeah two Brown Boxes, they'll work together) - now that's a really RAM expanded machine! The World Headquarters now has such an animal, an 832K Commodore 128.

Shopper to the Drop

Computer publication, personal exercise program, and monthly solid waste disposal challenge, Computer Shopper, has dropped its "Classic Computers" section. You might not have recognized it, especially if you are new to the C-128, but as far as they were concerned you own a "Classic." Now before you get visions of Bugattis, Packards, and Ferraris in your head, realize that this section also featured such hot numbers on the computer market as the Timex Sinclair, the Atari 8 bits, and the Coleco Adam.

Continued On Page 5

C-128 PRICE AND PROGRESS REPORT...

CONTINUED

Continued From Page 4

Interestingly, the editor in announcing the decision to drop coverage of the C-64 and C-128 hid behind these same three names as if he were thinking "We all know this stuff is humorously obscure in the current market." Perhaps he thinks that C-128 owners won't notice that he's talking about coverage of their machines too. What really sticks in my craw is the apparent decision to continue some Apple // coverage, just as Home Office Computing did when it left "home computers" behind. I avoid slamming other consumer's computer choices, but even the most out-of-touch computer journalist should know that today's C-128 systems exceed the capabilities of similar Apple //'s; and like Apple //'s, 128's belong to involved users who might buy his publication.

After reading the editorial on page 197 of their January issue, you might let Computer Shopper know how you feel. Perhaps they don't think we patronize their advertisers, so remind them that C-128 owners buy modems, printers, monitors, disks and accessories just like everybody else, and that if we are going to buy them from Computer Shopper advertisers we'd like to see some 128 coverage in between the ads. Maybe we can make sure TC128 keeps some competition: send mail to Computer Shopper, One Park Ave. New York, NY 10016 or send GENie EMail to Editor Emeritus S. VEIT (he didn't write the editorial I'm referring to, by the way, current editor Bob Lindstrom is the culprit).

My Friend Flicker

Here's one good reason to check out the ads aimed at other computer systems, the Flicker Master screen filter. This 1902/2002/1084 sized polarized Lucite sheet is marketed mainly to Amiga users who want to take advantage of that machine's interlace mode. Well, the 128 uses the same monitors and has a similar interlace mode, so the Flicker Master filter works just as well with Pocket Writer's and Dialogue's 50 line options. Besides glare reduction, it's a great all-purpose glare screen, and at its modest price is worth it for that purpose alone. You won't find it in their 8 bit ads, but Briwall will sell you one for \$14.00. Tell'em TC128 sent you.

Brisson Bristles

Yes there are some other firms still engaged in 8 bit coverage. RUN's February issue has an out of character lead editorial by its editor Dennis Brisson. Mr. Brisson essentially admits that RUN has not covered the development of the C-65 or the issue of whether Commodore needs a less compatible C-128 equivalent. Perhaps you would expect such an admission to be followed by an apology on the level of "Well we sure got beat on that story!" Wrong. Other publications who have covered the C-65 are practitioners of "Tabloid journalism" to his mind. Furthermore, he is peeved that mere users or journalists might have a thing or two to say about the wisdom of Commodore marketing this machine. In fact, he seems to say that not telling you anything about the C-65 plans and the issues surrounding them (at least until the finished machine is on the shelf) is some sort of moral imperative. He says this right after telling you all he knows about the C-65, of course. Perhaps RUN readers would have been better served if Mr. Brisson had embraced this "tell/don't tell" contradiction several months ago.

Lighten up Dennis! Users have fun "bench racing" the C-65 project against the market. I know that TC128 readers have different opinions about the value of the C-65, and we'll do our best here to make sure they remain informed opinions.

Celebrity Psychic Reveals:

Elvis Cured My Miracle Baby's Cancer from UFO's!

Us tabloid journalists will go to great lengths to draw attention to new 128 product announcements. Now would you have read this if it was headed up "New C-128 80 Column Publishing Program"? Knowing the interest many of you have in finding a better 128 DTP solution, a lot of you might - but would Dennis Brisson? Illustrated Publisher is the name of the new products announced by B-Ware Computer Systems. It will be sold as two separate products meant to work together, the Illustrator half being a drawing program capable of using Doodle and BASIC 8 format files while Publisher does the page layout and font creation stuff. Both programs can be installed on a single double-sided disk, however, and feature similar requestors, menus, and data files.

Like any good 128 program this one uses the 80 column screen, and if you have 64K VDC RAM you can edit virtual pages 640 x 800 pixels in size. The 1351 mouse and any kind of disk drive is supported. The program will also utilize the Commodore REU's for storage of program overlays. Those without mice will benefit from a numeric keypad reprogrammed for precise placement of the cursor. Although we haven't seen this program yet, the pre-release information we do have strongly suggests that time and talent was devoted to producing a very nice Amiga-style user interface (see some sample pictures on this page). We even hear that programmer Tom Brown has been the first to implement the infamous Amiga Guru Meditation Errors on the 128. A breakthrough of sorts!

Seriously, we look forward to reviewing this one. The announced price is \$39.95 for either of the two modules. B-Ware's address is PO Box 832 Tallevast Florida 34270, phone orders accepted at (800) 634-5546.

When in ROM Do as the ROM Chip's Do

Those looking to fulfill the destiny of the C-128's internal "empty ROM socket" might want to consider a product received just as we went to press. This utility collection on a chip is called Extra Help and boasts over 40 extra DOS commands and BASIC programming tools. Developer Daniel Gaspard says that his product is just the thing for those of us that can't quite find that darn disk we need with the text reader, screen dump, file merge program, and so on. We plan a full evaluation next issue, but BASIC 8 or Jiffy DOS enthusiasts should note that it looks from the documentation that Extra Help can't be called on while these products are running. Those who can't wait to find out more details, or who want to enquire about current pricing can contact DDG Inc, 258 Huntington Dr. Baton Rouge LA 70810.

Talk Fast!

Looking for a 2400 bps modem to use with recent terminal software that supports that speed? Arotek has begun to ship their Minimodem-C24 direct connect modem. These thin blue boxes lack a "feeling" of solidity and ruggedness, but if the 2400 bps model operates as well as similar looking 1200 bps Minimodem C we have at our office one could forget to care about "look & feel". The price sure is beautiful: under \$100 from some vendors. Since it requires no RS232 interface, the Minimodem-C24 is one of the least expensive ways to up your C-128 telecommunication speed.

AS Publisher

Ram Exp.
64K Video
Drive #9

Set Type

AS Illustrator

Ram Exp.
64K Video
Color
Drive #9

Drawing
Disk Labels
Pic Convert
Preference
Disk Cmd

Title Screens from B-Ware's Illustrated Publisher C-128 graphics/DTP package

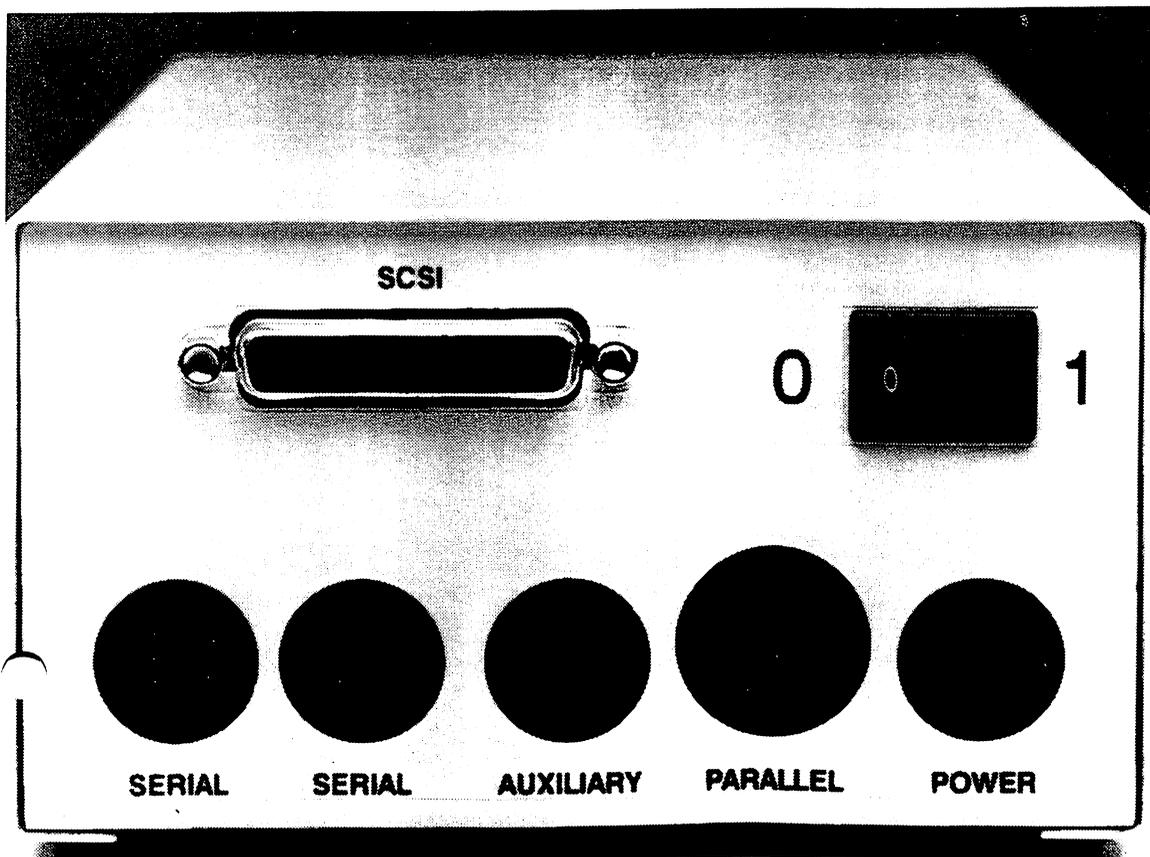
The CMD HD-20

...A First Look At The Newest C-128 Hard Drive

Since 1985, when the Commodore 128 was first introduced there have been many innovations in the microcomputer industry which have greatly changed the way people think about and use personal computers. One of the innovations that has had the most significant impact has been the development of small, reliable, and relatively inexpensive hard disk technology. In fact, this impact has been so great that it is becoming difficult to find an MSDOS or Macintosh computer owner these days who has not equipped their machine with a hard disk.

Of course, this begs the question, "why haven't the majority of C-128 owners added hard disks to their computer systems"? The answer is two fold. The first part involves the fact that Commodore's disk operating system is ROM-based, proprietary, is located inside of your floppy disk drives themselves, and was not designed with hard disks in mind. These factors make it much more difficult for developers to create hard disks for the 128, particularly ones which are compatible with the vast majority of software written for the Commodore 64 and 128. This is because vendors who did take on this herculean task of developing a hard drive are forced to devote a large amount of time and effort developing a hard disk operating system as well. Developers attempting to market hard disks for most other computing platforms do not have these problems, as the work of creating an operating system for use with a hard drive has already been done by the computer manufacturer (or the developer of the operating system that the computer manufacturer uses). This leads us to second part of the answer, economics. The cost of developing a hard disk operating system in addition to the costs associated with marketing a hard disk itself naturally drives up the cost of the product. This, in turn, makes it more difficult to sell, particularly to computerists on a budget such as the majority of Commodore 128 owners. That reluctance to buy on the part of Commodorians further complicates the situation of the developer as the company

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CMD's HD-20

...Our Exclusive First Look Continues

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cannot take advantage of various economies of scale which kick in as you can begin to make larger orders for raw materials and streamline your manufacturing process. Therefore these conundrums and the difficulty of the task at hand have conspired to keep the number of hard drive owners and hard drive manufacturers in the Commodore 128 world extremely low. Although from time to time there have been others, today there is only one company actively marketing hard drives for the Commodore 128, Xetec Inc., with their Lt. Kernal product. This is about to change, however. As was announced in the last issue, Creative Micro Designs (CMD), the makers of Jiffy Dos, are about to begin marketing a hard disk product for the Commodore 128 (and 64). Because we feel this is a significant product introduction of interest to a number of our readers we are providing you with this "First Look". CMD has been kind enough to provide us with a production version of their 20 megabyte product with a very preliminary version of its operating system so that we could get you the inside scoop on this development. We want to stress however that this preview should not be considered as an endorsement of CMD's product. We want to reserve that judgement until we can evaluate a finished version of the product's operating system and compare it to its competition, the mentioned, Lt. Kernal. If all goes as planned, we hope to include reviews of both hard disk products and a side-by-side comparison in issue #28 or #29.

As you can see by the photographs we have included, the CMD product is quite handsome. However one thing that may not register from these photographs and CMD's advertising is just how small the unit really is. The drive unit measures approximately 5 x 3 x 10 inches, just slightly taller and deeper than a 1581. The power

supply is external and is identical in size and shape to the external power supply of the flat 128, however the CMD HD power supply is much lighter than that of the flat 128's and includes an on/off switch on its front face.

The hard drive itself can be connected to your C-128 in two ways. First, via a standard serial connection, just like any other Commodore disk drive or a parallel connection to the C-128's expansion bus. The parallel connection is accomplished via CMD's RAMLINK peripheral which will be released later this year and provide faster access to the CMD hard drive than the currently operational serial bus. However the serial bus connection provides for a higher degree of compatibility with existing applications. To use the CMD hard drive with its serial bus connection all you need to do is connect to your drive chain with the included serial cable. Jiffy Dos does not need to be present in your computer in order to use the hard drive via this serial connection, however there is a performance increase if you have it.

Included on the front panel of the hard drive unit are eight rectangular LED status lights, and four "soft-touch" switches. The first two of these switches called the "SWAP 8" and "SWAP 9" buttons are used to redefine the drive unit assignment of the hard drive. Press the SWAP 8 button so that its status light is lit and the drive unit assignment of the hard drive is automatically set as unit 8, while assigning any other drive which may be currently defined as unit 8 to the drive unit assignment of the hard drive. Pressing the SWAP 8 button again so that the status light is off returns both the hard drive and the unit it swapped drive unit assignments back to their original settings. SWAP 9 works in the same fashion as SWAP 8 for unit 9 definitions. This insightful design makes it simple to use the CMD hard drive with software that either expects to be

loaded from or used exclusively with devices 8 or 9. It is a shame that Commodore never thought to put these kinds of device switches on any of their drives! The third switch on the hard drive is a write protect switch which can be used to keep data from accidentally being written to the hard drive. Lastly there is a reset switch which is provided to set things right in case your application crashes for some reason.

As for the drive's operating system itself, as I indicated earlier it was not complete as of this writing, however enough of it was in place to give you a pretty good overview of what will be present in the final release.

Included within the drive is a battery backed real-time clock which will be used to time and date stamp files as well as provide various applications with time and date information.

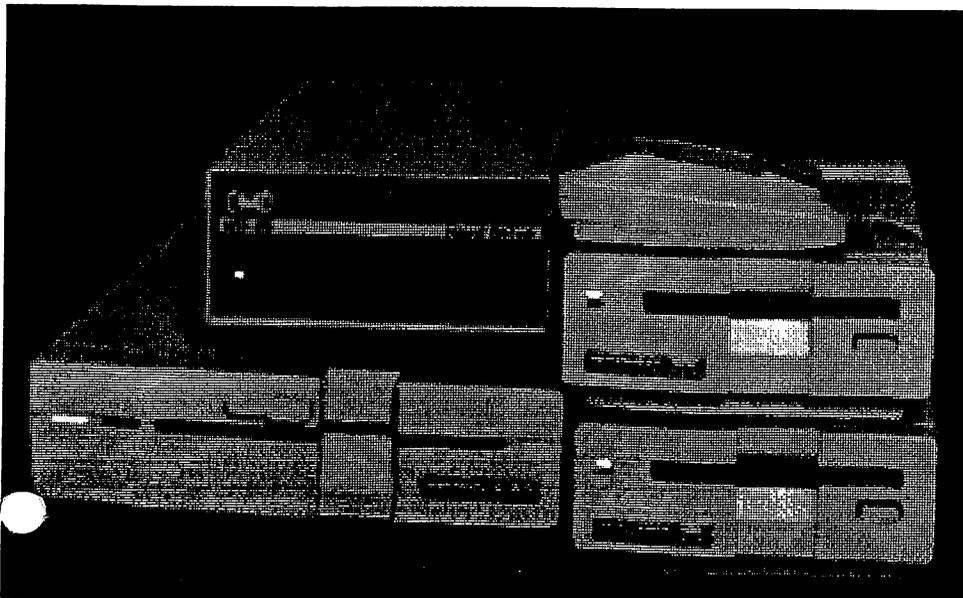
Under the CMD operating system the storage area of the drive is configured into logical units, called partitions. The maximum size of any given partition depends upon its particular type. As of this writing, there are two types of partitions planned, namely native mode and emulation partitions.

The emulation partitions are designed so that applications which require a specific type of disk will "think" that the hard drive is just a plain floppy disk. There will be three kinds of emulation partitions, one for each of the three types of floppy disk drives used by most Commodore eight bit computerists today; specifically, partitions which emulate 1541, 1571, and 1581 disks. The size of these partitions is dictated by the type of drive you are emulating.

The native mode partitions are designed to take full advantage of the hard drive environment. Unlike the emulation partitions you will be able to specify the size you wish your partition to be, with the maximum native mode partition size being 16 megabytes. Within each native mode partition you are able to create subdirectories, and in turn you are able to create subdirectories within subdirectories. Unlike the limited partition/subdirectory support provided within the version of Commodore DOS in the 1581, there is no limit to the number of files or the size of the files you can place in any native mode partition or subdirectory, and in turn there is no limit to the number of subdirectories you can place in any native mode partition or subdirectory.

In addition to the emulation and native mode partitions described above, CMD intends to include special support for the GEOS and CP/M operating systems for both emulation and native mode partitions. While the final implementations of this support were not in place as of this writing, both will likely be in the form of programs which will make a special copy of your CP/M BIOS and GEOS desktop which include CMD hard drive support. CMD is working with Commodore CP/M expert (and frequent TC128 contributor) Miklos Garamszeghy and Berkeley Softworks to accomplish this support.

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CMD's HD-20

...Our Exclusive First Look Continues

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Access to the various partitions and subdirectories is accomplished by sending various commands over the Commodore DOS command channel. This means that any application which has an option to send a Commodore DOS command will allow you to send the special commands necessary to access the special features of the CMD hard drive. From BASIC therefore these commands can be issued by using the drive command syntax of OPEN 15,drive number,15,"command" or from Jiffy DOS by simply typing @command. Commands to change directory, change partition, make new directory, get a directory with time/date information, read the current time and date were in place as of this writing and many more were under construction. Most of these commands are mnemonic and bare a strong resemblance to the commands found on other computer systems (i.e. cd is the command for change directory) so they are quite easy to learn and remember.

To conclude I want to add my seat of the pants observations on how fast the hard drive is. While we will be printing objective speed tests with a final version of the CMD operating system, the drive in its current state seems to load programs about twice as fast as a 1581 and when spell checking documents in the Write Stuff 128, it roughly as fast as spell checking from a Commodore REU.



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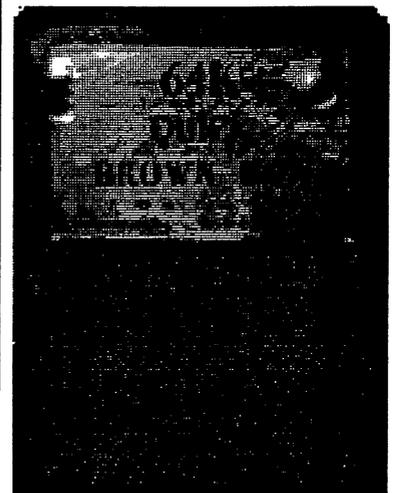
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Pocket Writer™ 3

Professional Word Processor for the Commodore 128

Review by: Loren Lovhaug

I have to admit it, I never thought we would see Pocket Writer 3. We tried for nearly a year, ever since the first advertisements for the product began appearing in December of 1988, to get into contact with Digital Solutions without success. Twice I talked to David Foster, the original author of Pocket Writer 2, and both times he told me that he was no longer with Digital Solutions and he did not know anything about Pocket Writer 3. Adding to the mounting evidence against the likelihood of a Pocket Writer upgrade was the well travelled rumor that Digital Solutions was in rough financial shape. But like a lot of things which happen in the wacky world of Commodore computing, something totally unexpected occurred, in early December 1989, we received a copy of the fabled Pocket Writer 3.

On the Fly

Our Pocket Writer 3 arrived in a Pocket Writer 2 box with a sticker on the front indicating that this was indeed the new version three upgrade. The box is not the only area where this same sort of "upgrade on the fly" mentality exists. Inside the box I discovered the program disk, a Pocket Writer 2 reference guide and 10 unbound pages of photocopied, dot matrix, single-spaced documentation entitled: "Pocket Writer 3 User's Guide". This untidy addendum which was designed to be used as a supplement to the Pocket Writer 2 reference manual clashes violently with it. The Pocket Writer 2 manual is a work of art as far as Commodore 128 software documentation is concerned. It is beautifully printed in black, blue, and white with a complete table of contents and index, large topic headings, highlight boxes on the important C-128 information, a clear organization and a nice informal yet informative style. Obviously a lot of thought and effort went into producing the Pocket Writer 2 manual in 1987, and it is equally as apparent that this was not the case in 1989. To be fair however, the ten pages are clearly written and do a good job explaining the new features incorporated into Pocket Writer 3, albeit in a form which is harder to use and is quite unattractive. Heck even the modest coffers of Twin Cities 128 have seen fit to finance a laser printer, and even more cost conscious printing technologies such as a deskjet or a simple daisy wheel printer would have rendered a substantial improvement.

The New Stuff

While the Pocket Writer 3 User's guide itself may not be impressive, the additions it describes are another matter. Pocket Writer 2 already held a prominent place as one of the top three word processors, and Pocket Writer 3 only adds to Pocket Writer 2's excellence. Added to Pocket Writer 2's impressive WYSIWYG text formatting, mnemonic operation, online context sensitive help, and mouse and RAM expansion support are a host of useful features. The two most prominent features added to Pocket Writer are its new "learn mode" macro facility pseudo-desktop publishing features.

The new macro facility gives the ability to record a series of keystrokes for later "playback". This facility is useful for recording often used command sequences, special formatting directives, or often used words or phrases in order to save time and increase accuracy when doing repetitive tasks. To define a new macro you press the control key and the L (uppercase) key simultaneously to instruct

Pocket Writer 3 that you want it to "learn" a new macro. At this point you will be asked to assign a letter from a-z as your new macro's ID. From this point on, any key that you type (including cursor motion, insertions, deletions, as well as command keys) are recorded until you press the CTRL L sequence again. In order to "playback" one of your macros, simply press the CTRL I (lowercase) and specify which macro ID (a-z) you would like to be played back, and the key sequences you recorded will be dutifully played out, just as if you had typed them again from the keyboard. Adding further sophistication to this feature is the fact that Digital Solutions also included the ability to load and save entire macro sets. This means that you can have a set of macros specific to particular tasks or documents. Each of the possible 26 macros you can create are stored in a common buffer which can hold approximately 1000 keystrokes. The main limitations imposed upon you as far as your macros are concerned are the following: no single macro can contain more than a whopping 255 keystrokes, and the combined total number of keystrokes in your 26 macros may not exceed the size of the macro buffer. Unfortunately, specific macros may not call upon other macros, even though one would think this should be possible pressing the CTRL I sequence and another macro's ID while defining your new macro.

The new pseudo-desktop publishing features of Pocket Writer 3 are also very sophisticated. Pocket Writer 3 now allows you to automatically format up to four newspaper style text columns per page. All you have to do is specify the number of columns you want on the page, the width of your columns in characters, followed by the left margin, in characters, of each of your columns. This makes it very easy to produce multiple column newsletters or brochures. The columns themselves are presented on your 128's screen in succession vertically starting with the leftmost column as opposed to side-by-side on the screen. The Pocket Writer 3 users guide explains that this method was chosen to allow you to view the columns as they would appear on the page without having to constantly reformat the columns on the display you type. Anyone who has typed text in GEPublish can probably appreciate the wisdom of this decision. As an alternative, Pocket Writer 3 displays a letter (a for column 1, b for column 2, etc.) next to the line indicator at the top of the screen to denote within which column your cursor is currently located. This slight compromise to Pocket Writer's WYSIWYG philosophy allows you easily tell where you are within the document, see the text as it fits in the column margins, and yet avoid the irritating reformatting delays.

However there are some glaring limitations to Pocket Writer 3's methods of handling columnar text. First, all of the columns you create must be the same uniform size. Secondly, you cannot have different multiple column layouts on the same page. An example of this kind of text layout is not difficult to imagine, for instance, suppose you wanted to place a two column description of a product on the top half of your page and a three column price list on the bottom of the page. In this instance, Pocket Writer 3 unfortunately will force your lower sets of columns to the next page of your document.

Another desktop publishing feature is Pocket Writer 3's "duplex" printing feature which allows printing odd and even pages on separate sides of a piece of paper. Also now included to aid in the production of "bound documents" is support for binding offsets and alternating headers and footers on opposite pages. Lastly, Pocket Writer now included a line and box drawing facility, similar to the one found in Pocket filer. Once you invoke Box/Line Mode, you can use a special range command to paint boxes around text on the screen for special emphasis. The boxes will print provided your printer has an extended character set which includes line and box drawing characters similar to those found in Commodore ASCII. Most modern printers do include support for these characters due to the fact they are included in the extended character set of most MSDOS microcomputers.

Our tour of Pocket Writer's new features comes to end with a newly added undo buffer, bookmark support, and some other minor additions. The new undo feature allows you to recover some text which you might have accidentally deleted. The user defined bookmark feature allows you to mark up to ten places within a document so that you can instantly jump to a particular position within your text without manually scrolling the cursor. This is a great boon for people who are working with larger documents and need to refer back and forth to various sections of the text while editing or adding additional text. The search and replace capabilities of Pocket Writer 2 have also been enhanced. There is now support to search and replace backwards as well as forwards within your text, and the added ability to search for a specific number of spaces either by themselves or embedded within a phrase. Lastly, Digital Solutions has now provided support for moving your cursor by sentence or paragraph in addition to moving your cursor by character or line, as well adding sentence and paragraph counts to the word count feature.

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Interestingly all of these features have been added without having to sacrifice text workspace! Pocket Writer 3 retains the same 64K of text workspace and the ability to divide that workspace in half as found in the program's predecessor. This feat was not accomplished however without cost. In previous versions of Pocket Writer the entire program was loaded into memory. However in order to add the new features without stealing text editing space Digital Solutions has opted to divide the program into smaller modules which are retrieved from disk when they are needed. Using this "overlay" approach is by no means new to Digital as it was used in their database program Pocket Filer 2. Digital has done a good job in implementing the "overlay" approach. They took the time to consider which of Pocket Writer's many features ought to be grouped together by function in an overlay as well as how often a particular function is used during the course of a normal word processing session in order to determine in which overlay a particular function ought to be placed. Once you ask Pocket Writer 3 to execute a command which is not part of the overlay which is currently resident in your 128's memory it will look for the appropriate overlay on disk. If Pocket Writer 3 finds the overlay it will load it into memory, otherwise the program will request you to insert a disk with the proper overlay into one of your drives. Generally loading the overlays takes only a few seconds, even on a 1541. The overlays themselves can be placed on any disk or drive, even though Pocket Writer 3 is heavily copy protected (see below). Alternatively, you can configure Pocket Writer 3 to automatically copy these overlays into a Commodore RAM Expansion Unit, which makes the overlay's load almost instantaneously, giving the illusion that the program itself was completely self-contained within your 128 as was formerly the case with Pocket Writer 2.

Pocket Writer 2.5?

While the new features of Pocket are laudable, one can't help wondering why Digital Solutions bothered to release an upgrade of Pocket Writer 2 without addressing its main deficiencies, specifically its weak spell-checker and its tyrannical copy protection? The spell checker in Pocket Writer is several generations behind the state of the art. Basically, all the spell checker does is identify words which it can't match in its dictionary file, so that you can manually correct them. There is no suggestion facility, nor is there an ability to even consult the Pocket Writer dictionary alphabetically. Adding insult to injury, the program itself does not come with the Pocket Writer dictionary. You must create your own dictionary from scratch or purchase Digital's meager 32,000 word dictionary separately (many other 128 word processors come with dictionaries of 50,000 words or more). Making this situation even worse is the fact that Digital has chosen to encrypt its dictionary entries and does not provide you with any method to delete words from the dictionary or add large batches or words to the dictionary, although you can add words individually to the dictionary when you do a spell check. Just as aggravating as Digital Solution's poor spelling checker is the situation surrounding its method of copy protection. Digital Solutions has always used an extremely stringent disk based copy protection scheme on its products. Using a disk based copy protection scheme as opposed to a dongle based scheme or a keyword lookup adds a lot of hassles for users. While not having a backup copy might be an acceptable risk in the case of game software, it is not in the case of a productivity package where you might end up stranded unable to get your work done. Disk based copy protection also makes software difficult to install on the larger and faster mass storage devices available to 128 users such as the 1581 disk drive, the Lt. Kernal and the CMD hard drive. We have also heard users who have had their Pocket Writer 2 disks have mysteriously stopped working on their machines, while the same disk would work on a friend's 128. This seems to suggest that the copy protection scheme employed by Digital is not very tolerant of normal wear as your computer as it ages.

The new features of Pocket Writer 3 are impressive, the macros and the new printing/desktop publishing features in particular, but do not really address the few design flaws apparent in Pocket Writer 2. If you are a Pocket Writer devotee, and think you will make use of the new features, I heartily recommend this upgrade. If you are looking for a new word processor for your 128, (see the our Word Processor comparisons in this issue) you may wish to opt for another choice or a discounted Pocket 2.

Pocket Writer 3
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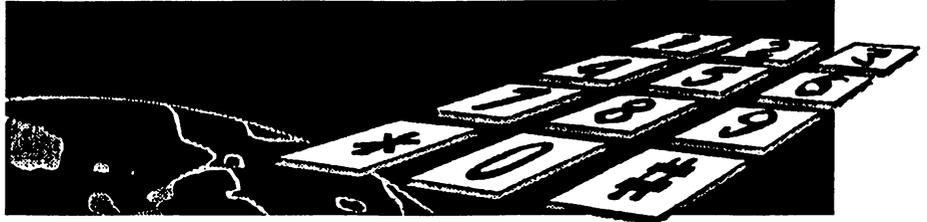
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DIALOGUE

1 • 2 • 8



Review by: Frank Hudson

Some programs are just too darn good to review as if they were just another piece of software. You know the review mantra all too well by now perhaps. "They like it/they don't like it/it's good but it doesn't do this" and so on. Listen up! In the trailing months of 1989 we had a local user show us an application that on close examination appears to be a leading contender to the title of "Finest Piece of Code Ever Written for the Commodore 128". That program, Dialogue 128 V2.0 by Gary Farmaner, should be a must buy for anyone interested in telecommunicating on the C-128. If you are even thinking about buying a modem - get Dialogue. If you want a program to put up on your screen to show skeptics what your 128 can do, one that can follow and even top such established "I didn't know a Commodore could do that" showpieces as GEOS, Superbase, and Pocket Planner/Writer, then buy Dialogue. If you want to support quality programming on your favorite computer, send money to Workable Concepts, Dialogue's producer.

Dialogue is one powerful, easy to use terminal package. If you are a telecommunications beginner, there is no easier to master terminal program out for the 128. If you are a grizzled telecom veteran with a favorite program that you think can't be topped for features, read on. If you, like me, have long treasured your Bob's Term dongle as if it was your wedding ring, get ready to chuck it into your swap-meet fodder box. This new product matches or exceeds Bob's Term on nearly every level.

I realize that many telecommunicators feel that they've found an acceptable terminal program already. Bear with me, and I can explain why I'm raving about this package. A tour of Dialogue's features begins with its installation procedure. The distribution disk (like BASIC 8's) is designed to create customized work disks on any device or drive you might have hooked up to the 128. Screen prompts ask for the particulars of your 128 hardware such as modem type, color or monochrome video; as well as mouse, joystick, or keyboard preference. It will then format the new work disk if needed, install the auto-boot sector if you wish, and copy the needed files from this distribution disk to your new Dialogue disk. You can make as many such disks as you want, and the distribution disk deals with the 1581 drive handily.

Dialogue provides an excellent environment for users that want to use the 1351 mouse. Nearly all routine commands can be accessed from menus, including the too rarely implemented disk file selection process. Depending on your experience or preference, the mouse and menu structure can emulate the GEOS way of doing things or what is more surprising to me, an uncanny mimicry of the Amiga two button method can be ordered (yes, the right button on your 1351 can be useful).

Redial Rejectors can use the menus by popping them down with the HELP key and selecting menu items with the cursor keys in a manner reminiscent of many MS-DOS programs. 100% of the menu items have keyboard equivalents, displayed on the menus so that beginners will soon pick up the keyboard shortcuts for their most used commands. Not a single menu needs to be used in this speedy

keyboard mode. This is the way all user interfaces should be done: full freedom of choice, experts and rank beginners equally well served.

Dialogue comes with a 58 page loose-leaf bound laser-printed manual replete with index and clear organization, but most operations are straightforward and easy to master without cracking the book. The documentation is above average in most respects, but occasionally it fails to explicitly instruct the user in the full use of a feature. For example, we had this package at TC-128 World Headquarters for a month before we discovered that files to be uploaded can be selected from a listing of the directory, a great boon to Y-Modem batch users who otherwise might need to remember and type without error up to 12 filenames. For Dialogue users who remain in the dark on this, here's how you do it:

1. Choose upload from the File Transfer menu.
2. Choose Ymodem from the Protocol Parameters window.
3. When the status line asks for your upload file name, just type the Commodore DOS wedge command for directory, \$, and you'll get a disk directory.
4. Highlight the first file you wish to upload and hit RETURN or double click with the mouse to select it.
5. When the status line returns to request another file, use the \$ command again and then repeat step 4.
6. Repeat for as many files as you wish to batch upload (up to 12 files can be uploaded at a time to Y-Modem supporting hosts).
7. When you have selected all the files you wish to upload, hit RETURN alone at the status line file request, and you'll be prompted to begin the batch upload process.
8. For those using conventional, non-batch supporting protocols such as Punter or X-Modem, skip the steps beyond step 5.

I don't want to leave you with the impression that Dialogue's manual is substandard, but I do feel that the documentation is at times too terse. For a program of this power and attractiveness to beginners, it would benefit from the addition of a tutorial section.

Using one of Dialogue's extraordinary panoply of features is usually a manner of selecting it and finding that it works just as you would expect it to. Configuration is handled by a 28 item menu window, and 18 of those items can be individually customized for each number in your dialing directory. Dialing directories can contain up to 30 numbers, and additional dialing directories can be called up from disk for real telecom addicts.

Four function keys can be individually defined as text strings (such as your password) for each number and an automatic log-on script for each service may be set to run on connection. Both versions of the 1670 are supported as well as the popular Hayes emulating modems, the 1650, the 1660, the Volksmodem 12, the Volks 6480 and the Aprotek 12c. A series of numbers can be autodialed until connection is achieved, storage of your favorite multiple dial lists in order is allowed, and the rank in which numbers are listed can be swapped around at whim.

Scripts can also be called up from disk at any time to automate a telecommunications process. Scripts are SEQ files constructed out of a command set of 20 instructions which can perform most any kind of conditional test desired as well as pause and request user input. Although these commands are reduced to one or two characters, they are often mnemonics for and work like familiar BASIC commands such as if, goto, gosub, return, print, and sleep. Construction of your typical "wait for this string to be received/then send this string" macro is a snap. Dialogue makes an intelligent choice to make the most-always required return command implicit at the end of any text string (although you can choose not to send a return at the end of string too). For years Bob's Term was the unsurpassed 128 terminal for macro fanciers, and yet Dialogue's macro abilities beat Bob's. With automatic log-on scripts, all the boring activities of remembering and entering user numbers, passwords, and your name (and in the wee hours of the morning even that last one can be a challenge!) are handled by the computer while you grab another of your favorite on-line beverages. Except for the lack of "watch me" learn mode (unavailable on any 128 terminal package) I can think of nothing that could be added to Dialogue's abilities in this area.

File transfer protocols were one area where Bob's Term's age was showing, and Dialogue offers all of the popular options: Punter, X-Modem (CRC or checksum variants), X-Modem 1K blocks (sometimes erroneously called Y-Modem), true Y-Modem with its batch transfer abilities built in, and Compuserve's CIS-B. Missing are Z-Modem, Kermit, and any of the cutting edge simultaneous chat and download protocols which have yet to catch on in C-128 universe. Bob's Term's ability to directly download to a CP/M format disk remains unduplicated here too. Fortunately there are numerous utilities to convert CP/M files between disk formats.

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Ampere Metal's CSDOS V1.4

...Whatever Shell Be, Shell Be

Review by: Anton Treuenfels

Commodore 128 users associate ARC strongly with the efficient transfer of files via modem. However the archive concept is rooted in the world of mainframe file management. Shortly after mass storage was introduced the problem arose of what to do with files not needed on a day to day basis. One solution is to pack a group of related files together into a single file called an archive. Later a new copy of any particular file in the archive can be made whenever needed, a process called extraction. As well as simplifying file management, it also happens that an archive file is often smaller than the sum of the individual files that make it up. This is because mass storage devices often allocate space in fixed size blocks. Since most file sizes are not integral multiples of the fundamental block size there is usually some leftover space in the last block of any file. While an archive file is no different in this respect, internally the component files are stored end to end, thus requiring only one partial block instead of one for each of the original files. More spectacular reductions can occur by file compression, in extreme cases down to 10% of original size. Many archive file management utilities actively look for repetitive sequences in files being archived and replace them with shorter sequences that contain the same information. While this process often renders an archived file unintelligible, no problem results since these files are not intended for direct use. At extraction the archive utility will decompress the file back into its original form. When are the space and management savings gained by archiving worth the time and effort involved? Any files which occupy significant space but are little used are good archival candidates.

Backup files made for record keeping or safety's sake may have been the reason for creating archive utilities in the first place, but as a practical matter the most popular use of archiving is in connection with file exchange via computerized telecommunications. The reduced file size speeds file transmission, and the file grouping aspect allows many related files to be handled in a single transaction. In the Commodore 8-bit world ARC from Ampere Metal has long been the leader in file archive utilities. Over the years several variations of ARC have appeared for machines such as the PET and C-64, but newest C-128 version is the most ambitious. All ARC versions extend the BASIC screen editor and Kernel operating system of the Commodore 8-bits. In earlier versions these enhancements are incidental to ARC. While they are certainly useful, they are not in themselves reason enough to use the ARC package for anything other than archiving.

Ampere Metal changed all that with CS-DOS. CS-DOS includes ARC (this package is the only way to get ARC for use in C-128 native mode) but goes beyond it to provide a generalized C-128 system enhancement. The resulting flexible and visible environment is similar to the CP/M or MS-DOS operating system environments. Another change, along with the addition of these enhancements, is that Ampere Metal is not marketing CS-DOS as shareware, although the C-64 versions of ARC will continue to be distributed in that way. CS-DOS comes with a manual and software packed onto both sides of

two 1541-format disks. One disk is devoted to CS-DOS and contains the current (1.4) and original (1.1) versions of the DOS shell, commands and utilities to be executed in the shell environment, and several text files including documentation and source code for miscellaneous CS-DOS commands. The other disk holds a current version of ARC64, related utilities such as SDA, and still more documentation and ARC64 utilities source code. The manual is for CS-DOS V1.1 and an update file on the CS-DOS disk notes changes made for V1.4.

CS-DOS itself consists largely of the 8K DOS shell maintained partly in Bank 1 and partly in Bank 0. Shell services include a command line interpreter, i/o redirection, a disk BIOS, automatic execution of a startup file, and text scrolling. The shell does not implement any commands itself. Unlike CP/M or MS-DOS, all commands are considered external. When a line of text is entered into the C-128 the shell first checks for output redirection, then tests if the first word is a command. If so the shell attempts to load and execute that command, otherwise the line is passed on to the BASIC interpreter.

The shell's disk BIOS allows letters "a" through "l" to be associated with units "8" through "30" and drives "0" through "9". The default associations are the same as used by ARC64 but can be changed. The shell assumes all files named in command argument lists to be on the disk in the default drive unless preceded by a drive letter and colon (ie., of the form "d:filename"), in which case the file is on the disk in the associated unit and drive.

One group of commands provided with CS-DOS implement a RAMdisk in either C-128 RAM or an REU. This is not a complete drive emulation nor is it compatible with Commodore RAMDOS. The main intent is that frequently used commands be placed in the RAMdisk so the shell can find them quickly. Commands can be added or deleted individually until an appropriate mix is found. The whole contents of the RAMdisk can then be saved as a single file to be loaded back later. Although use of the RAMdisk is optional in the sense that any command can also be executed from disk, the design and packaging of CS-DOS heavily encourage its use. For example, only commands in the RAMdisk can be executed without a drive specifier preceding them. Also, many of the commands provided with CS-DOS are contained only in files meant to be loaded directly into the RAMdisk. The individual commands can be separated out onto disk, of course, but the command for doing so is included only in one of these files.

Several commands implement a simple batch facility complete with labeled conditional branching. EXEC (batch) files are sequential text files to which input has been redirected. The lines contained in an EXEC file are executed just as if they had been entered from the keyboard. Each line can consist of either a CS-DOS command or one or more BASIC statements. One use of this ability occurs shortly after the shell first begins execution, when it attempts to EXEC a file called "autoexec" on a disk in unit 8 drive 0. This optional file usually sets up a default configuration, eg., drive assignments,

RAMdisk installation, screen colors, sign-on message, and so on. Of course, at least until the RAMdisk is loaded any CS-DOS commands in this file must be individually available on disk. An example of this can be seen on the distribution disk where copies of several commands are kept outside the RAMdisk files expressly for use by the default "autoexec" file (the main duty of which is to install the RAMdisk into a 1750 REU if present or C-128 RAM if not).

Another group of commands eases editing either BASIC or text files. Find, change, and scrolling are all included. I/O redirection is also useful in this context. The output of LIST, for example, can be sent to a disk file instead of the screen. Later, redirecting input to this file instead of the keyboard causes the contents of the file to be merged with the program currently in memory. In this way, a library of common subroutines can be built up and used.

Numerous other commands and utilities can be found on the distribution disks, including extensions of the C-128's built-in monitor to support disk drives and 1750 REU's, a no-frills assembler, an implementation of the UNIX grep pattern matching utility, and many others.

Also treated as commands by CS-DOS are several file archive utilities, the most familiar of which are ARC and SDA. ARC128 2.41 is very similar to ARC64 2.50 (both of which are included) and archive files created with one can be dissolved by the other without trouble. When used with a single drive ARC-128 is approximately three times faster than ARC64, mainly because of larger RAM buffers and faster drives. Self-dissolving archives (SDAs) can be created by (essentially) appending an ARC file to a copy of one of the many SDA header files provided (for PET, 64, and 128).

New with CS-DOS 1.4 is CSARC, an archive utility which is file compatible with similar programs for MS-DOS, Amiga, and Atari ST machines, such as SEA ARC and PKARC. CSARC itself actually only creates the archive. A separate command, CSXARC, extracts files from the archive. Several variants of these commands are also provided, such as one that uses the 1750 as a large buffer during archive creation and another that dissolves these archives on the C-64.

As many commands as there already are, users are free to add new ones which also may take advantage of shell facilities. Primarily this means the disk BIOS and the logical mapping of letter names to physical drives, services are accessed via software breaks. An area of memory in common RAM is filled with zeros (6502 BRK instructions) and the break handler is modified (via its vector at \$316) to interpret any break within that address range as a disk BIOS call. A break at the first address is a call to the first service, at the second address to the second service, and so on. This scheme is similar to the MS-DOS software interrupt based i/o system, but is slower than the jump table approach normally found in Commodore software. However this approach is

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Ante Up

...At Stake In The C-128 Graphics Game

Review by: Nathan Beck

In the "high stakes" game of computer graphics more and more programs are being designed to be compatible with each other. But, it hasn't always been like this. In the early days of home computers (just a few years ago), proprietary formats were the rule, rather than the exception. That's why graphic conversion programs for the C-64 became so popular.

Unfortunately, similar programs for the C-128 just haven't been turning up... Until now, that is. Bill Foster and Rick Ferreira have "dealt" us a program called, "Ante Up - The BASIC 8 Graphics Translator". Their "bid" for a share of the computer graphics market takes the form of a very slick utility!

Ante Up will convert GEOS, Doodle, Koala, and ComputerEyes picture files, as well as Print Shop graphics, into BASIC 8 format. It will also perform several operations on BASIC 8 pictures that were previously very difficult. Ante Up requires 64K video RAM, supports the Commodore 1571 and 1541 disk drives, and can make use of any size Ram Expansion Unit. All functions are accessed via the keyboard (joystick or mouse are not supported).

The program is written in BASIC 8 (with some machine language routines) and comes on an auto-booting single sided disk which includes the BASIC 8 Run Time Library (RTL8). Ante Up also works with the ROM version of BASIC 8, after minor alterations to the boot files. When Ante Up boots, it "sniffs" out your REU (this technique was first published in TC 128 Issue # 18), and if you have one, loads all its supporting files into RAM. Once the program is loaded, you'll see a display resembling a poker table, with stacks of chips that represent the formats it will convert, and a deck of cards from which the main menu options are displayed. The cards are flipped in an interesting animated sequence.

Opt for Print Shop graphics, all conversions can result in a full screen display: Pictures are converted directly from a 320 by 200 pixel display into a 640 by 200 display (pixel width is doubled). Except for Print Shop and ComputerEyes conversions, Ante Up allows you to select the Color Cell size that best suits the conversion or your needs.

Useful Tip #1 - At any "Save" prompt you can change the default prefix of the resulting filename, allowing you to make "brushes" instead of "pictures", and vice versa. BASIC 8 picture conversions include changing color cell size, producing a negative image, flipping (horizontally or vertically) a screen, and changing individual colors. These options are possible only with 640 X 200 BASIC 8 format pictures. Color conversion is needed for some converted C-64 pictures because of the difference between colors native to 40 and 80 column screens. The ability to change color cell size is very useful, regardless of which BASIC 8 paint program you will use a converted picture with.

Doodle pictures are accurately translated to the 640 X 200 display. Colors may need correction, but that's easy once the picture is in BASIC 8 format. As with most other conversions (except GEOS virtual screens), you can dramatically improve picture detail with any BASIC 8 graphics program.

Print Shop graphics ("Side A", non-Commodore printer graphics) are converted to brush files. These brushes can later be used as patterns (with BASIC PAINT) in a variety of ways. Print Shop "Screen Magic" picture files should be converted exactly like ComputerEyes pictures.

ComputerEyes options are very impressive. Ante Up lets you choose either a full screen display or a 1/4 screen (320 x 100) display. The smaller displays lose some detail (but that's OK with some pictures) and are saved as brushes. These conversions are saved without color (monochrome). The manual doesn't mention it, but you can use these options (full or 1/4 conversions) on any monochrome HIRES bitmap file of only 32 disk blocks (often called "standard" 8K HIRES graphics).

Useful Tip #2 - You can convert Doodle pictures into 8K HIRES bitmaps with these commands: BLOAD "DD FILENAME", B0, P23552: BSAVE "FILENAME", B0, P24576 TO P32577. (Similar tricks are possible with nearly any graphic file.) You can then squash the Doodle to 1/4 size, and use the picture as a brush or pattern!

GEOS pictures can be translated two ways: You can convert from the "standard" C-64 screen size (320 X 200), or from the "virtual" screen size (640 X 200). In both cases the resulting picture is 640 X 200. The "standard" option actually enlarges (doubles) a section of a GEOS picture. Ante Up's GEOS picture conversion normally corrects aspect ratio for the BASIC 8 display, but pressing "G" while the program loads allows you to render BASIC 8 pictures with the original "elongated" aspect ratio.

Useful Tip #3 - Translating full-page GeoPaint files into large BASIC 8 pictures requires attention to pixel coordinates as you select the various pieces. Save the second (and successive) files as "BRUS." files, to ease their recombination within your BASIC 8 graphics program. The trick to "rebuilding" is in the positioning of the pointer when you place the "brushes". You can translate converted Mac pictures, for example, to full size BASIC 8 files using this method.

Koala picture translation is also very impressive, as multi-color screens have half the resolution and twice the colors of hi-res screens. A color cell size of 8 X 2 produces the best results. Pixel detail or color can be corrected (with Ante Up and/or a BASIC 8 drawing program) to yield truly stunning displays.

Ante Up is obviously the best utility of its kind, but it does have a few problems: The 1581 disk drive is not supported. Worse, only device # 8 is supported. Most C-128 users have a 1571 or 1541 drive set to device # 8, but users with only 1581 drives will be left out. Modifying the program to use two drives would take work, and adapting it for the 1581 may be even harder, but allowing it to load/run from any device number should be comparatively easy (i.e. "U = PEEK (186)").

The manual could be improved: It's too brief, and lacks technical information that would be of interest to many users. The manual should also explain some of the powerful tricks that are possible (see the three Useful Tips for examples). A glaring error is found where it says that translation can be made from anywhere on the GeoPaint page, yet Ante Up only allows movement around the page in increments of 16 pixels. Note that the manual (and program) I evaluated is a "pre-release" version (version 1.1); it may already have been corrected.

Maybe it's unrealistic to suggest improvements to such a fine program, but indulge me for a moment. Add Macintosh picture conversion, uncompressed Amiga IFF file conversion (see TC 128 Issue #22), GIF and RLE conversions, conversion of C-64 pictures to the BASIC 8 screen in their original (320 X 200) size, and in the spirit of "perestroika" (restructuring... Get it?), translation from BASIC 8 back into all the above formats. These options may seem extravagant, but they are possible (they've all been done before). If they were implemented, Ante Up would be the ultimate graphics conversion program. Wouldn't that be the equivalent of a Royal Flush?

Overall, Ante Up is well worth its price. If you've been looking for a way to transfer graphics into BASIC 8 format, get Ante Up. This is a powerful program, allowing BASIC 8 users to convert their favorite C-64 art, as well as the ability to perform awesome tricks with BASIC 8 displays. Whether you have artistic ability or not, if you use BASIC 8, you need Ante Up. And it will even let you squash your Doodles!

*Ante Up, Starfollower Productions, c/o Rick Ferreira,
4224 Bakman Suite B, North Hollywood CA 91602, \$20.00
CA residents add 6% tax., Money Orders Only*

Spanada Computer Aided Spanish Translation

Review by: Frank Hudson

Computers make tireless drudges. Even the most creative or artistic work requires many tiny mind-numbing steps to be performed. Wouldn't it be nice if your C-128 could help out? Take the task of translation of text written in a foreign language. On one hand, this is a delicate procedure best undertaken by a sensitive human mind, and on the other it is replete with constant references to dictionaries for obscure terms and unusual verb tenses. For those of us less skilled in a particular foreign language, the rote work becomes overwhelming as most every word will need to be looked up. A new C-128 product, Spanada attempts to bring us computer-aided translation. By using a fast working look-up algorithm, Spanada attempts to find any Spanish word entered from the keyboard and offers one or more English definitions for it. Furthermore, and this is a much more difficult test, it will make an effort to provide a translation of an entire sentence or phrase using some context-sensitive features.

Spanada is supplied on two color-coded 5.25 inch disks with six pages of stapled instructions. Booting up requires the insertion of the first disk and pressing the shifted RUN/STOP key combination, which begins the process of loading the most commonly used Spanish words into the 128's internal memory. When this is complete, the screen requests the insertion of the second disk, containing additional Spanish vocabulary and the program is ready for the entry of Spanish words or phrases.

The program defaults to using the familiar BASIC line editor length of 160 characters, sufficient for most sentences. An additional mode is available which extends this limit to 253 characters, but at cost of losing the ability to use the BASIC line editor's editing tools. Commas entered in the default mode will produce the predictable BASIC line editor results (the "extra ignored" message), but the 253 character mode accepts them and makes use of this punctuation mark in sentence interpretation. Spanada's documentation states that the program will also recognize a question mark at the end of a line and take it into account when deciphering a sentence. Provisions for the entry of specific-to-Spanish accent and diacritical marks has been made by the Spanada's line interpreter, although these characters are not displayed on the C-128's screen in a meaningful way.

When a phrase is entered, Spanada checks each word for possible meanings, looking first in the most common word list stored in RAM, and then if the word is unavailable there, to the data disk in the drive. A report is printed to screen giving the program's stored alternative meanings. After all the individual words and possible meanings have been displayed, the program then makes an attempt to parse the entire sentence or phrase and offers a translation of it. Individual words entered separately will have their definitions reported almost immediately. Reports from the words in RAM are almost instantaneous, and even the disks searches are admirably fast, taking a few seconds at worst. Sentence interpretation speed is subject to varieties of sentence length, but again the process takes place rapidly, especially considering that Spanada is operating off a 5.25 inch disk drive for the rarer definitions. Words that are not in Spanada's vocabulary list are reported back with a trailing question mark. Proper names or anything else you don't want Spanada to attempt to translate in the midst of a phrase can be skipped.

How good are Spanada's translations? I compared the program's results with the translations found in a dual language book of short stories. As one might expect, Spanada was often stumped by more colloquial and regional Spanish terms, but it did a good job of finding and offering definitions of most Spanish nouns I tried it with. For verbs and modifiers, it was more inconsistent, but still its "hit" score was reasonable considering the machine resources it has to work with (more on this later). Whole sentence interpretation was typically only fair to poor however. Since the program's sentence interpretation is preceded by a report of the variant meaning of each word in the sentence, Spanada's documentation encourages the human operator to assemble his or her own interpretation from among the definitions provided by the computer. Knowledge of typical Spanish syntax on the part of the user would be very helpful at this point, but though I lack experience with Spanish grammar, I was able to use the program's reports to get the gist of many sentences I fed into it.

Spanada's documentation is very modest in its claims for the program. It repeatedly cautions against considering the package anything like an "automatic translator". In regards to its performance with sentences, this is approximately correct, but I was quite satisfied with Spanada's performance

as a computer-based Spanish dictionary. In the matter of English to Spanish translation, the documentation is again quite self-effacing, devoting a paragraph or two to this optional mode which it appears to dismiss as limited. On the contrary, I found it useful. Although it will only utilize those words in the most common word list stored in the 128's RAM, it was quick and supplied a Spanish word for a majority of the common English nouns I tested it with. Verb tenses are not supplied in this mode, but it should still help a student find the correct verb to look up in a conjugation table.

Beyond the limitations I've already discussed there are a few other problems with Spanada. First, the program would benefit from utilizing the abilities of an expanded C-128. As it stands, Spanada requires an 80 column monitor and a 1571 disk drive, but the program makes no use of the 1581 disk format or the RAM expansion units. Spanada's documentation makes much of the limits imposed on the programmer from the relatively small size of the 128's memory and disk storage (although it is comparing the C-128 to the ten trillion bytes of memory it estimates is contained in the average human's mind!), but the ability to use the larger and faster peripherals certainly would help. I would particularly welcome a REU-friendly version with expanded memory-based vocabulary.

Few bugs or unexplainable crashes occurred in my experience with Spanada. I wish that the failure to place the second disk in the drive did not produce a non recoverable "file not found" error. For some reason any seven letter or greater word ending with "iera" seems to produce a lockup in my version of the program, but if there are other word endings that produce similar results, I did not find them. While the BASIC-style line editing of Spanada is functional, I would strongly prefer to see a more flexible and up-to-date user interface. A send to printer option would be a nice touch. The ability to incrementally create a text file with your accepted sentence translations is something that a program like Spanada cries out for.

Is Spanada worthwhile? For the Spanish student or anyone with a limited Spanish vocabulary who finds the need to translate Spanish, it will probably be a welcome and much used aid. Although Spanada users would benefit from the enhancements I've suggested, the program's current version is functional and demonstrates acceptable performance.

*Spanada 128, Spanada Enterprises, 1 Sands Ranch Road,
Huachuca City AZ 85616, \$29.95*

The Diamond Text Editor

...Better Than BASIC 7.0's Own Screen Editor?

Review by: Anton Treuenfels

The Diamond Editors from RockySoft are a family of C-128 programmer's editors. The editors share a common set of commands and features, and differ mainly in the type of source code they are designed to handle. The Text Editor 1.0B is for straight text as typically used by assemblers and compilers, the BASIC Editor 1.0B is for BASIC 7.0 programs, and the BASIC8 Editor 1.0A is for BASIC 8 programs. Except where specifically indicated comments made here are applicable to all of the editors.

A programmer's editor is not a word processor, rather it creates text that is intended primarily for input to another program and only secondarily for human communication. Features such as text formatting, printer handling and spell checking, which are generally meaningless to an interpreter or compiler, are relatively unimportant or absent in a programmer's editor. Other features, such as finding and changing text, take on a relatively increased importance.

The Diamond Editors have a promising set of features. They offer multiple text buffers, multiple windows on one or more buffers and a macro capability. The command set emulates a large fraction of the C-128 ROM screen editor's standard escape sequences. The editors are compatible with Commodore's RAMDOS programs for the 17XX RAM expanders. A small shell program allows the Editor to be conveniently used as an editor of Commodore's HCD65 Assembler for the C-128.

The editors function only in 80-column mode. The top three lines of the screen are reserved for command prompts, error messages and editor state information. Command prompts and error messages appear on the top line and generally remain visible until replaced by other messages. This sometimes leads to a slight confusion over whether the displayed message actually refers to the last user action or is simply left over from some earlier action. A better method would be to erase these messages after the user has pressed any key. The default screen colors of black on white with a black border are achieved by operating in reverse mode (when exiting an editor to BASIC the screen remains in reverse mode. The sequence <ESC> <N> restores things to normal). Escape sequences are provided to cycle through text and background colors. The Text Editor can be resaved with new default colors.

The user interface does not pamper the user. The editors are heavily command-key oriented (similar to the most influential of their ancestors, MicroEMACS). Most commands are initiated by pressing two keys either simultaneously or in sequence. For commands initiated by a two keypress sequence, after the first is pressed the cursor disappears until another key is pressed. There does not appear to be a single philosophy regarding assignment of functions to keys. Some assignments are mnemonic, some are functional, some match standard escape sequences and others are uncategorizable. There are no context-sensitive prompts describing legal commands; the user must have a reference at hand until they are committed to memory (which does not take too long for the most commonly used ones).

The editors support eight file buffers named "A" to "H". Pressing the <F3> key displays a list of buffers currently in use, the size of the file in each buffer, and a flag character (***) indicating whether or not the file has been modified. One method of moving to a particular buffer is to press the key indicating its name while this display is active (completing a two key sequence command). The default buffer is "A". Although empty at startup it is marked as modified, which causes a spurious "buffer modified. proceed?" check when first attempting to load a file into it.

One especially convenient use of multiple file buffers is to combine source code from one or more files. A file is loaded into a file buffer and the appropriate section is cut or copied into a global paste buffer. From there the section can be pasted into a different file buffer. The editors make this type of operation reasonably easy to accomplish, but in the case of the BASIC editor the results are not entirely satisfactory.

The Diamond BASIC editor has an understanding of the internal structure of BASIC programs and cannot be prevented from aggressively acting on that understanding. Most importantly the editor understands something about BASIC's use of line numbers. In the cut and paste operation described above the editor changes the line number but not the text of each line during a paste. For example, if six lines originally numbered 4700-4750 are pasted into a BASIC program immediately after line 300, all six are numbered 301. Any line number reference in the text, such as "GOTO 4750", remains unaltered.

The net result is that after a paste operation quite a bit of work remains to integrate the lines into their new location, a task the Diamond editor makes difficult. Automatic line renumbering is not supported. Renumbering a line by hand instantly produces a second copy of the line with the new number and updates the window display to reflect the new line in its correct location. Renumbering any substantial number of lines becomes tedious as the cursor is moved back to the originally pasted lines after each change. An alternative is to exit to the normal BASIC editor, employ its RENUMBER command (although how this would react to consecutive lines with the same line number was not tested) and then re-enter the Diamond editor.

BASIC's dual use of line numbers as both labels and an ordering device poses a difficult problem to a programmer's editor. The unhandy way the Diamond editor deals with them is partly a reflection of this. One alternative method might be to treat BASIC programs as ordinary text. Line numbers would be considered strictly as labels. Before being handed to the BASIC interpreter for execution a simple sort of assembler would proceed through the text tokenizing each line, assigning a line number reflecting its relative position in the file and changing labels to match.

Sharp separation of the editing and execution phases also opens the door to other possibilities such as meaningful variable names, named subroutines and easy integration of modular subroutine libraries. These are all characteristics of some of the newer BASICs such as QuickBASIC for MS-DOS machines, and an editor based on such a design could bring much of the flavor of

those environments to Commodore 8-bits.

The Diamond editors support up to thirty-two overlapping windows. The active window is indicated by the associated buffer and filenames displayed in its top border; the top borders of inactive windows are blank. Windows may be freely resized and moved about the screen. Windows are not named but their definitions are held in a stack which can be cycled through in either direction. This can be used to move from one file buffer to another.

In general the window functions work well but there are some problems. For example, the editors support global file markers to allow easy return to a specific point in any file. When returning from one file buffer to another the window associated with the destination buffer loses its borders. If more than one window is associated with the destination buffer the window which appears will vary from one return to the next.

A more serious difficulty can occur if the contents of a file buffer which has more than one window associated with it are deleted. The windows remain open and any attempt to move to one of them causes a fatal program crash. This problem is compounded by the fact that there is no way to close or reassign a single window once it has been opened. The only option allowed is to simultaneously close all windows and buffers. This deletes the contents of all buffers and leaves only a single full-sized window on an empty buffer "A".

Disk command handling is similar to methods used by the C-128 ROM monitor. Operations are directed to a default unit unless a command or filename is preceded by a specific unit number. Disk commands are usually initiated by <F1> followed by another keypress. An exception to the <F1> rule is obtaining a disk directory, which is signaled by the simultaneous keypresses <CTRL-F1>. Reading a disk directory requires that a filename pattern be provided, even if it is only "\$". Directories are displayed in a single column in their own window. One method of loading files is to move a highlight cursor onto a filename and press <RETURN>. The cursor can also be moved onto the disk header and free block "filenames" and a load attempted. This is unsuccessful but does not otherwise cause a problem.

The BASIC editor uses only BASIC program files. The Text editor can handle either sequential or program files held as either screen codes or PETSCII characters. When saving files under a filename already in use the original is renamed with a "BK." prefix before the new version is saved. The backup version can then be scratched automatically if desired. The default behavior of the find and change commands is to search forward from the cursor position until the first match is found. Optional arguments can be specified to search the entire file, find more than one match, disallow matches inside a larger word and so on. Commands are provided to repeat the last search in either direction.

The Diamond editors have a macro capability allowing them to record a named sequence of up to

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250 keystrokes for later playback. When macro recording is turned on the user is first prompted for a one or two character name. After this has been provided all keypresses, including command keypresses, are both executed and stored in a macro definition until recording is turned off. The macro can then be executed by pressing <ALT-char>, where "char" is the first letter of a macro name. If there is a macro with that one character name it will begin playback immediately (even if there is another macro with a two character name starting with that letter), otherwise nothing happens until the second character of a macro name is pressed.

Macros are permitted to nest up to thirty-two deep. A conditional macro facility based on pattern matching is provided. Defined macros can be saved to disk as files and later loaded back.

Macros extend the power of an editor by allowing compound commands to be built up from primitive ones. The most common use of macros is to minimize the number of keystrokes required to accomplish any repeatedly performed operation. For example, obtaining a disk directory requires a minimum of three keystrokes. Macros could perhaps be defined to reduce that number to one for the default unit and two for any unit. Macros also afford a limited ability to provide primitive commands with more mnemonic names.

The Text editor has a facility allowing it to load and execute machine language utility programs in a buffer in Bank 0. It also supports a pseudo RAMdisk in Bank 1 to enable convenient use of such utilities in the absence of a true RAMdisk such as Commodore's RAMDOS. Utilities are supplied by RockySoft and no documentation is provided to allow the user to create others.

Most of the existing utilities are designed to be used in conjunction with Commodore's HCD65 Assembler. A shell utility is provided to control the assembler. In a system configured with 1571's as units 8 and 9 and a 1750 with Commodore RAMDOS as unit 10 the shell could be executed from unit 9 but not unit 10 (causing a system crash instead). Assembler output files could be sent to unit 10 without difficulty. None of the example source files provided with the HCD65 Assembler were successfully assembled, apparently because the letters ".s.src" rather than simply ".src" were appended to whatever filename was supplied. Control returned directly to the editor from the assembler.

The Diamond editors come with a spiral bound manual. The text is reasonably attractive in appearance and seems complete. Commands are described in the main body along with examples of their use. The commands are covered again without examples in two appendices, one organized alphabetically and the other functionally. There is no tutorial material except for a brief discussion in appendix regarding use of the Commodore 65 Assembler. There is a useful table of contents. No index is provided but it is not difficult to find particular command descriptions. RockySoft supports the Diamond editors with periodic low-cost updates and a bug hotline listed in the manual. Work on the next revision is reportedly currently underway.

Many of the problems noted with the Diamond editors appear to be the result of oversights coupled with incomplete testing rather than overall design failures. While currently these oversights make use of the editors somewhat risky, over time they should be eliminated, enabling confident use of the many powerful features provided. However another class of problems seem to stem directly from the design, particularly in the case of the BASIC editor. In certain areas where the Diamond editor should offer clear advantages over the BASIC ROM editor, it is woefully deficient. Unless there is a serious redesign of the Diamond BASIC text editor, there seems little reason to choose it.

Diamond Text Editors, RockySoft, P.O. Box 113, Langton Ontario Canada NOE 1G0, \$39.95 w/s&h

Dialogue Continued From Page 11

The subject of transfer protocols could take an article by itself, but in short, if a BBS supports Y-Modem by all means use it. Y-Modem is faster and easier than either X-Modem or Punter. Dialogue's Y-Modem implementation worked for me at up to 4800 bps speeds in transfers between machines connected via null modems.

Dialogue has more buffer options than I can recall seeing in any program. Eight RAM buffer options are offered to all 128 users, including the option to designate up to eight switchable distinct buffers. Eight more options are offered to 1750 RAM expansion unit owners topping out at a gargantuan 512K mode using the entire REU. Virtual buffering of text directly to disk is also supported. The buffered files (or any SEQ type file) can be edited with a functional built in text editor offering both line and block based editing. An additional scrolling review buffer is always active, capturing the last 10K of activity online. A unique split screen view mode in the editor lets you look at the review buffer while writing editing a file, a great choice for responding to E-Mail or creating log-on scripts. A conference or chat mode option also creates a split screen, letting you type and correct lines before sending them over the line. For those occasions when an address or phone number in a just displayed online screen needs to be stored to disk, a screen capture command can be issued to grab it. The only thing that can't be done with a Dialogue buffer is upload and download via a transfer protocol from it, although line pauses and XON/XOFF control are supported for uploading off-line composed messages to a host. REU owners can activate RAMDOS if they want to do protocol transfers to and from RAM, and Dialogue will support it.

Besides the universal ASCII style of telecommunications, Dialogue also supports Color BBS-style CBM extended character sets for on line color and graphics in both 40 and 80 column modes as well as the ANSI color codes for those services that support them. VT100 and VTS2 terminal emulation is offered in a robust enough implementation to please the user who first showed Dialogue to us, and he is a man who had gone through most of the other C-128 telecom programs looking for the ideal way to link up to his workplace VAX mainframe. He did comment to us that a noisy phone line will play havoc with the VT100 connection however, and this is something we've also noted with the color graphics schemes

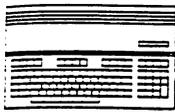
used by Commodore BBS's. I hope you've got the picture by now. Dialogue's feature list and furthermore, the way that each feature is implemented, shows that its designer is experienced in the world of telecommunications. The terminal program he produced stands not only as the most powerful C-128 term ever, but also as the equal of many higher priced options running on other computer systems. What I find harder to convey is that he did not produce another "power users only" tool with tons of options callable only through obscure commands that would take a lifetime of use to master. Although there is plenty of depth in Dialogue, new features that you come to appreciate as you are called upon to use them, I loved it the first time I booted it up. I recommend this program to anyone beginning to telecommunicate on the Commodore 128, and urge advocates of other terms, no matter how attached to them they have become, to strongly consider adding the additional capabilities of Dialogue to their on-line experience. Editors Note: Intrigued by our raves about the Dialogue 128? There is a freely distributable demo version of Dialogue available which lets you look it over. Don't expect to be able to use many of the features we talk about without ponying up for the real thing however. The demo lets you visit the editor and autodialer, but they aren't functional. The nifty script language and the nicely done manual around either, ditto for the all the transfer protocols. It is like window shopping without your wallet!

Dialogue 128, Workable Concepts, 281 St. Germain Ave., Toronto Canada MSM 1W4, \$49.95 US

CSDOS Continued From Page 12

smaller and the break handler rather than the caller performs any necessary C-128 memory banking maneuvers. The CS-DOS shell environment is rich in possibilities as a direct result of its flexible design. This is not to say that CS-DOS provides the ultimate imaginable Commodore shell environment. On the contrary, many of the supplied commands function adequately but not elegantly. As one example, the find and change commands display the same line more than once if the pattern they are searching for occurs more than once within it. Also the 80-column mode scroll routine flashes the cursor up and down the left edge of the screen as it searches for a line number. The behavior of any of these commands can be changed, of course. One benefit of the CS-DOS definition of every command as external is that it allows any of them to be replaced at any time for any reason. Defective commands can be replaced by bug free versions and graceless commands superceded by graceful ones. In its present state CS-DOS is an interesting and useful product. It may become even more so as it continues to develop in the future.

CSDOS v1.4, Ampere Metal, 80 Hale Road #4, Brampton Ontario Canada, L6W 3M1, \$30.00 US



The Macro Express

...Writing Online Scripts Is Easier Than You Think

By: Frank Hudson

There is some confusion among 128 users about the nature and usefulness of macros. When I use the term I mean the ability to perform program functions automatically from a computer "script", a broader definition of the term than I see used by many users who regard the ability to define a "hot key" to enter a string of text a full-fledged macro. A macro can do that, but real macros can do much more. A second misconception is that macros are only for codeheads who program in five or more high-level languages. Writing macros is programming of a sort, but it can be very simple programming, the kind you can pick up in an evening. In most cases I find it easier than BASIC.

Even the simplest real macros can automate tiresome repetitive actions so that you don't have to bother with them anymore. Like steam heat, indoor plumbing, and remote controls, macros mean convenience. Two C-128 terminal packages, Bob's Term Pro and Dialogue have particularly rich macro facilities, perhaps because telecommunications as a field is full of the kind of numbing repetition that cries out for a macro. The typical BBS is loaded down with layers upon layers of menus each of which must be stepped through to get where you're going. Often your first minute or so online is taken up with this folderol. "Expert modes" where available are little help unless you're blessed with a bank-vault memory, and entry of commands often takes place "on the clock", facing connect charges or daily usage limits. A simple to construct auto log-on macro can help out.

Typically the most important commands in a telecom macro are the ones that wait for a particular string to be sent by the host BBS and then send back your chosen response. Using them I can log on, send my user name and password, and go to my favorite section automatically. Since good macro languages can do most anything thing automatically that I could do "in person", there is no reason that a macro couldn't also open a buffer and store all the new messages in a particular message base too. Such a macro will be faster than my typing and can work while I am doing something else. If you like to connect with many BBS's, and use unique passwords on each service, macros can use infallible computer memory to recall and send the passwords.

The first step in setting up my log-on macro is to determine what strings I need to have the macro look for and what it in return needs to send. While pen and paper can be used for this, opening your terminal's capture buffer is a more computerized method. In Dialogue or Bob's Term, C= b toggles the buffer on or off. So first, I dial the BBS and perform the steps I want the macro to later perform, closing the buffer and logging off after I've captured what I want. Using the editors included in either program I can then view the process I am about to train the computer to perform. Let's look at an example. Our local area computer information service that can tell where and when a particular band is playing. To get that information, several menus and screens have to be stepped through. So initially, log on and capture the steps. In this case a title screen is shown for the service, you are asked a question about what kind of terminal emulation you are using, a Zip Code for location purposes (this service can sort choices to show you the venues

closest to you), two mandatory advertisements are displayed, and then you are taken to the main menu where finally you can choose to find out about your favorite band. Let's take the Macro Express to get there.

Checking the buffer capture I can see that the first significant question is the one about the terminal type, since the title screen will scroll off-screen on its own. The question asked in full is "VT52 COMPATIBLE TERMINAL? (Y/N)", but the macro doesn't need all that to know where it's at, so we'll wait only for the "/N)". In BT Pro our first step then will be to enclose this string in CONTROL s characters, telling the macro to wait for it. Because of the special character set used by BT Pro, I can't show you exactly how the control characters will look on BT's macro line screen (CONTROL s will look like a stubby s with a horizontal bar across its top when BT displays it), so I will use the usual notation ^s to show pressing CONTROL s (or ^m for CONTROL m and so on). My BT macro will begin with ^s/N^s to wait for a string. In Dialogue the syntax is w "/N)". Next we send the response, which in our case is a Y since both BT and Dialogue can emulate a VT52 terminal. In BT our macro grows to look like this:

```
^s/N^s^tY^m^t
and in Dialogue:
w "/N":t "Y"
```

BT uses a CONTROL t to transmit and Dialogue just a t with the letters to be transmitted in quotes. This transaction is the basis of most telecom macros. One waits for a certain string and then sends the automated reply. As in our example, it is best to keep the strings you wait for as short as possible providing they positively identify the place you want a response sent. This not only keeps the macro to a manageable length, but helps prevent line noise from confusing the macro's execution. The ^m that follows the Y in the BT macro is the control code for return, telling the macro to act as if you had hit the RETURN key. Note that you do not actually press the RETURN key to generate this character, but press the CONTROL key at the same time as the m key just as in the CONTROL s combo. Without this return your response will just sit there on the BBS screen causing your macro and BBS session to halt. Dialogue makes things simpler by assuming that you need to send a return at the end of any string you transmit, unless you tell it different.

The next few steps are repeats of the first one, waiting for certain strings and sending responses. Here is how the macro develops in BT:

```
^s/N^s^tY^m^t^sCODE^s^t55411^m^t^sINFO^s^m^sINFO^s^m
and in Dialogue:
w "/N":t "Y"
w "CODE": t "55411"
w "INFO": t ""
w "INFO": t ""
```

The additions send the Zip Code requested and the two responses to INFO step past the mandatory ads. This kind of macro programming is unfair to advertisers - it's the computer equivalent of a

VCR's fast forward. To send just a return in Dialogue you send an empty string (""). Stopping here would have automatically brought us to the BBS's main menu, and with either program we had only to learn two or three commands to do it!

To continue, I'll order the macro to make a choice from the BBS's main menu. The main menu ends with the prompt SELECT OPTION?, so I'll test for ION? and send 5 (the menu number for music and entertainment news on this BBS). Since we are running out of room in BT Pro's limited (79 character) log-on macro area, we'll start there by chaining to a second BT macro. Although chaining is more complicated, without chaining BT Pro would be unable to do more than log us on. Here's how our BT Pro auto log-on macro now ends:

```
^s/N^s^tY^m^t^sCODE^s^t55411^m^t^sINFO^s^m^sINFO^s^m^sION?^s^jbands
```

Bands is the name for the macro we are jumping to, and CONTROL j tells BT to jump to it, which it does by loading it from disk. It is important when chaining a BT macro to remember that Bob's Term always takes you to BT's menu first when it executes such a jump, therefore the first character in the new macro will tell BT to go back to terminal mode with the Bob's Term menu command t followed by some CONTROL t's to send our choice: t^t5^m^t. Dialogue has more space available so all I need to do to extend the Dialogue macro is add the line w "ION?":t "5". The last steps are to get the schedule for my favorite act, a swinging combo called the LYL Band. To do that we need to choose 10 from the BBS's next menu and then enter the name for the band exactly as the BBS lists it, open the buffer to store info we are going to get, and then send a 1 to list where and when they are playing. The BT Pro chained macro named "bands" then grows to this:

```
t^t5^m^t^sION?^s^t10^m^t^sALL?^s^tLYL
BAND^m^t^kb^sION?^s^t1^m^t
```

In Dialogue these lines are added to our macro:

```
w "ION?":t "10"
w "ALL?":t "LYL BAND"
cb
w "ION?":t "1"
e
```

The first character of the next to the last line in the Dialogue macro (c) is actually entered in its macro editor by holding the C= (logo key) and c key down together. The equivalent section in the BT Pro macro is ^kb produced by pressing CONTROL and k together. These are the respective macro commands to open the terminal's buffer to store the info I want. These macros could go on from here, closing the buffer, stepping to other sections of this information service, or just stopping to let you the human operator take over. The e in the last line of the Dialogue macro does just that, while the BT Pro macro terminates whenever it reaches its last command.

This is just a sample of the kind of automation you can achieve with macros. If you own either of these fine telecommunication programs and haven't yet hopped on the Macro Express, what are you waiting for?



Superbase *Stuff*

By: Loren Lovhaug

One of the classic dilemmas facing users of Precision Software's superior database manager, Superbase 128, is whether one should access and manipulate their data manually via Superbase's control and report generation menus or utilize the package's programming environment. I suspect that many people's first inclination is to shy away from programming environment because they feel that creating a program would be too difficult or time consuming. However this is not necessarily the case. In fact, in instances where it is likely that you will be repeating a particular task, or where a task involves a number of intricate tasks, you are much better off creating a program to accomplish your task so that you can quickly and accurately repeat the task with a minimal amount of effort.

The following example illustrates how a small, simple, Superbase program can greatly decrease the amount of effort it takes to collect and analyze your data. A typical database application is expense tracking. Let's suppose we were recording our checks in a database and we wanted to generate a report of our expenditures categorized by the type. For the sake of this article let's imagine a database made up of four fields. This fields record the check number (our key field), the party the check was being made out to (a text field), the type or category we assign to the check for tracking purposes (another text field) and the amount the check was written for (a numeric field). Here are ten records which might make up our example database:

Check	Pay to:	Type:	Amount:
5401	Ford Motor Co.	Auto	250.00
5402	McGreasey	Food	9.61
5403	Semipure Water Co.	Utility	42.11
5404	Joe's Gas	Auto	15.71
5405	Electric Co.	Utility	40.00
5406	Interface Ideas	Computer	45.65
5407	Ralph's Grocery	Food	85.40
5408	AT & T	Utility	25.63
5409	Binary Bits	Computer	30.00
5410	BoobTube Cable TV	Utility	18.23

To assist us in the construction of a program to generate a report of our expenditures let's breakdown the task into its component parts as if we were creating such a report manually without the assistance of a computer. The first thing we might do is take our checks and sort them into piles according to type. On the computer, we can do this by sorting our database on the type field. When Superbase does this it creates a sequential file which contains a list of the key fields in your database sorted according to the sort criteria you specified. In this example the sort operation creates a list of check numbers ordered according to their type field. This list is analogous to taking our imaginary piles of sorted checks and putting them together to form one sorted pile.

The next step is to calculate how many checks we wrote of each type and for how much. Doing this manually would involve counting and adding checks until we reached a check that is of a different type in our pile, at which point we would record the number of checks written for this specific type and the total amount of those checks and begin a new count and a total. Remember, that because our pile of checks is sorted, all of the checks of a specific type will be grouped next to each other.

In our Superbase program we accomplish this by having our program examine check records in order from our sorted list. Superbase allows us to do through the use of the select command, which among other things allows us to select records from a sorted list of key fields (see line 110

below). Then we must decide if the check represented by the current record is of the same category (type) as the previous one. In our program this decision is made through the use of an IF...THEN statement (line 140) which compares the current type name (category) to the last entry in a list of unique type names (the n\$() array). If it is not, then we know it is time to add an entry to our unique category list, start a new count and a new total (line 160). Then at this point we would want to display the totals for this category we have just finished (gosub 190) and start on the new category (goto 130). If the check was written for the same purpose as the previous one then we simply increment our count and add the total of the current check to our total for this category (gosub 180). The final task is to add together the number of items (the n() array) and the amounts spent in each category (the t() array) to come up with grand totals (the variables tn and ta) which are calculated using a FOR...NEXT loop (line 200).

Now, carefully examine the program below and then reread this paragraph, noting the line and variable references in parenthesis. If you are not very familiar with Superbase or BASIC it might also be helpful to have your Superbase manual and/or a BASIC programming text nearby to refresh your memory of how each command is used.

```

100 nc=25:dim n$(nc),n(nc),t(nc)
110 sort all on [type] to "typesort"
120 display @1"Type of Check";@23"Checks";@42"Amount":display " "
130 select from "typesort":eol 200
140 if n$(i)=[type]then gosub 180:goto 130
150 if i>0 then gosub 190
160 i=i+1:n$(i)=[type]:n(i)=1:t(i)=[amount]
170 goto 130
180 n(i)=n(i)+1:t(i)=t(i)+[amount]:return
190 display @1n$(i);@25&3,0n(i);@35t(i):return
200 for n=1 to i:ta=ta+t(n):tn=tn+n(n):next n
210 gosub 190:display " ":display @1"Total";@25&3,0tn;@35ta:wait

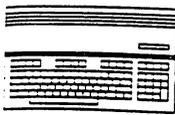
```

- nc number of types (categories)
- n\$() type names
- n() number checks for each type
- t() total amount spent on each type
- i item counter
- n loop variable for final totals

The result of running this program on our example data above would display the following on the screen:

Type of Check	Checks	Amount
Auto	2	265.71
Computer	2	75.63
Food	2	95.01
Utility	4	125.97
Totals	10	561.32

Now I want to turn your attention back to my original supposition. I stated that many instances it is actually easier to create a program to accomplish some data manipulations, in particular repetitive tasks, than it is to perform them manually via the Superbase menus. In order to convince yourself that this is indeed true, as a mental exercise I challenge you to come up with a way to generate the same data using manual manipulation of your data. While, I am convinced it can indeed be accomplished, I am just as convinced that such an approach will take more effort and be more prone to error.



1990 C-128 Word Processing Round Up

Loren Lovhaug

One of the 128's strengths has always been that there are number of high quality, inexpensive word processors available for it. While having choices is great, it can also lead to confusion, especially for users who are brand new to the 128. Over the past few months we have received a number of letters from such people. Many of them have picked up used 128s or have finally decided that they want more out of computing than their trusty 64s could offer, while others are just plain interested in what we think is the "best". Therefore, this rundown of the best bets in C-128 word processing, part of our series of software overviews.

The Write Stuff 128 v2.0

The Write Stuff v2.0 (TWS) takes the title as the most affordable 128 word processor on the market. A post-formatted word processor, TWS formats text at print time rather than as you enter your text. Like most post-formatted word processors, this usually leads to cryptic codes on screen to indicate various style and formatting changes such as underlining and margin adjustments. However, TWS also presents you with a menu at print time for the most common formatting functions, so for simple text layouts it can bypass formatting codes entirely. A print preview facility is provided for easy examination of your document before it is printed. TWS can be controlled by menus or quick keyboard commands. Multiple column support, a built-in outliner, the ability to define alternate page or uniform headers & footers, support for multiple documents in memory, a split screen mode for editing two documents at the same time, and several dozen other features make TWS one of the most comprehensive word processors available for the 128. TWS has the 128's best spell checker/corrector, with a fast 87,000 word dictionary including lookup and suggested corrections. Text and command macro facilities are available as well as two help screens. TWS is not copy protected and can make use of an REU via RAMDOS.

In my estimation there are only a few areas where TWS is a bit lacking. First, the program provides for only a few printer drivers. Second, TWS has a somewhat clumsy, although functional, syntax for range manipulation. Lastly, the program's documentation, while doing an accurate job of describing the program, is terse in places, and could use more illustrations and examples.

Ease of Use: 87
Advanced Features: 97
Documentation: 87
User Interface/Command Structure: 85
Overall Value: 100
Average Score: 91.2

Pocket Writer 3

Pocket Writer 3 is the easiest to learn and use word processor for the 128. Pocket Writer's strengths are its WYSIWYG on screen text formatting and its user interface. Unlike most other word processors in this round-up, you will see your text formatted within your margins as well as boldface, italics, underlining, super & subscripts on the screen as you type. The program itself can be controlled either through fully mnemonic keyboard commands or by mouse controlled pull-down menus. PW3 provides the user with on-screen help for features and command syntax. With the exception of the PW3 addendum, the program's documentation is beautifully printed and written, with plenty of

examples. PW3 includes both text and command macros and a number of desktop publishing features such as multiple column and sophisticated bound form support. Incorporated into PW3 is a mail-merge facility, the ability to load two documents into memory at one time, and numerous other advanced features. PW3 supports the Commodore REUs via its own RAMdisk option. The package also includes a generous number of pre-configured printer drivers which are easy to modify. PW3's most serious flaws are its bare bones spell checking facility and its disk based copy protection.

Ease of Use: 95
Advanced Features: 85
Documentation: 85
User Interface/Command Structure: 100
Overall Value: 90
Average Score: 91

PaperClip III

Like the Write Stuff, PaperClip is a post formatted entry with lots of power. The latest version is non-copy protected, has keyboard driven pull-down menus for most of its features, a fairly complete integrated terminal program, built-in outlining facilities, and support of the Commodore REUs for spell checking. If you have an REU attached to your system not only can you copy PCIII's dictionary into the REU for very fast spell checks, but one can also enable a unique "as-you-type" spell checking option. With this option invoked every word you type is immediately compared to the dictionary in the REU as soon as you finish typing it. If the word is not found in the dictionary, the program beeps at you. While some writers may find this annoying, others find it helpful for eliminating typographical errors right at the source. PaperClip also has macros and the ability to format multiple column layouts, a page preview, and an excellent manual.

PaperClip III's only weakness lies in its printer drivers. The latest version includes a new printer scheme which has some flaws, most notably a margin formatting problem involving some printers using a condensed font. In addition the new printer drivers only accept five printer codes per item and they are more difficult to alter than they were in previous versions of PaperClip.

Ease of Use: 85
Advanced Features: 90
Documentation: 90
User Interface/Command Structure: 85
Overall Value: 95
Average Score: 89

Superscript 128

Like Paperclip, Superscript has its roots in the early days of Commodore computing. Based upon the Grandfather of all Commodore 64 word processors, Easy Script, Superscript is a post formatted product with a command structure that is quite similar to that of PaperClip's and the Write Stuff 128. What sets Superscript apart from the rest is its incredibly powerful macro capabilities and its ability to be co-resident (i.e. both programs can be loaded into the 128's memory at the same time) with the premier Commodore database management system, Superbase 128. Because of the program's macro abilities and its integration prowess it is without a doubt the choice for someone looking for a "programmable word processor" or sophisticated conditional database merge capabilities. The program also comes with a competent spell checker and keyboard based pull down menus.

Like Paperclip, the program's printer drivers are a bit cumbersome to work with, and only support a few printer "standards" however they can be customized and they do function properly. In addition the program is copy protected and does not support of Commodore's RAM expansions.

Ease of Use: 85
Advanced Features: 97
Documentation: 85
User Interface/Command Structure: 85
Overall Value: 85
Average Score: 87.4

GeoWrite v2.1

GeoWrite 2.1 as included in GEOS 128 V2.0 is probably the most controversial of the C-128 word processors. Many like its abilities to use the multitude of GEOS bit-mapped fonts and to integrate with the rest of the GEOS product line, while detractors like to point out its slow screen response during text insertion or reformatting (or for fast typists, even for routine text entry), and that printing bit-mapped fonts inevitably slow.

GeoWrite 2.1 running on an expanded 128 is by far the best GEOS word processor ever. The extra formatting abilities and text conversion utilities that we once had to pay extra for in geoWrite Workshop are now included as well as geoSpell, one of the few 128 spell checkers to offer suggested correct spellings. Since it is a GEOS product, 128 enhancements like the 1581, the REU's, and the mouse are well supported.

GeoWrite 2.1 supports printing in native printer fonts as the importing of text produced in by faster 128 text editors, giving options to improve speed at either end of the process. Owners of pre-NLQ printing technology will find geoWrite's bit-mapped font output a boon.

Ease Of Use: 90
Advanced Features: 80
Documentation: 80
User Interface/Command Structure: 95
Overall Value: 82
Average: 85.4

It is interesting note is that many of these programs are on their second or third 128 incarnations which means that these software producers have continually worked to improve their product and have demonstrated a commitment to the 128 marketplace. While we have concentrated on the product which we feel are the best overall, this is not to say that another word processing package isn't worth considering. Fontmaster 128 offers powerful font capabilities, graphics integration, and a competent spell checker, all without geoWrite's speed penalties. Fleet System 4 boasts a thesaurus, a limited database manager and a big spelling dictionary. VizaWrite Classic has absolute margin positioning and it can justify proportionally spaced fonts such as the Times Roman fonts supplied with many laser printers. After all, none of us here at Twin Cities 128 would dare consider going through life with just one word processor, and with the choices available to you, you might not want to either.

ALL NEW

MAVERICK™ V4

PLEASE Don't Call Us The Best Copy Utility On The Market!

We've always been known as the best Commodore copy utility made. But that label just doesn't fit us anymore. Because Maverick is so much more than just a copy utility. Over its life span, Maverick has evolved into a total software management system capable of extending the abilities of your Commodore computer well beyond its original capacity.

Maverick V4 continues the evolutionary process that is transforming our original copy program into a series of dedicated modules, each component created by a master programmer, each designed to deal with a specialized task. The result is a program that creates an entire software management environment of which backing up protected software is only one part. Software Support, the company that has always pushed the Commodore further that it was ever designed to go, is proud to present Maverick V4. We've added several important new features and many dramatic enhancements to the Maverick platform. For example:

- RAMBOard™ NYBBLER: A MAJOR leap forward in protected backup capabilities, our exclusive new nybbler works with our own RAMBOard to AUTOMATICALLY shred some of the toughest protection schemes ever created! This combination of ingenious hardware and superb new software can handle many protection schemes that are untouchable with conventional nybblers alone
- RAMBOard GCR TRACK EDITOR: This new feature, found ONLY in Maverick V4, works with RAMBOard to allow you to read, write, and even edit whole tracks at a time!
- 1581 SINGLE OR DUAL DRIVE FAST DATA COPIER: Now backup your data disks faster than ever before with your 1581 drive! 1764 1750 RAM expansion and 64K video RAM are supported!
- FILE TRACK & SECTOR TRACER: Identify, view, and edit any sector in any program file-fast!
- HIGH SPEED SEQUENTIAL FILE VIEWERS: Now you can view or print sequential files WITHOUT having to load the application that created those files! For example, view PaperClip™ files without waiting for PaperClip to load. File Viewers are the current rage in the IBM world - Software Support brings this advanced feature to your Commodore with the new Maverick V4!
- ENHANCED DIRECTORY EDITOR: Works with the 1541, the 1571, and now supports the 1581 disk drive! The ultimate tool for organizing your disks!
- ENHANCED TRACK & SECTOR EDITOR: Works with the 1541, the 1571 (in true double sided format), and now supports the 1581 disk drive!
- ENHANCED SECTOR MAP EDITOR: Now supports the true double sided format of the 1571 disk drive!
- ENHANCED PARAMETER MENU: Now supports two drives!
- ENHANCED BYTE PATTERN SCANNER: Perform high speed searches on 1541 disks and, now with true double sided format support, 1571 disks.
- MORE ALL-NEW PARAMETERS: Maverick V4 now includes over 450 parameters that either copy or entirely break the potentially destructive protection schemes of the world's newest and finest programs! Our parameters have always been the strongest on the market but, with our exclusive RAMBOard support, now they're more powerful than ever!

A turntable is just one component of a complete stereo system. And a copier, even the best one made, is just one module of a complete software management system. From this point on, we won't settle for just being known as having the best copier on the market. Once you see Maverick V4, you'll understand why.

THE NEW MAVERICK V4 - ONLY \$34.95 NOW INCLUDES PARAMETER MODULES 1-7

Maverick V4 is available from Software Support International: Products That Work - From A Company That Cares

ALL NEW

ADDITIONAL MAVERICK V4 FEATURES

- REU support in Maverick's major modules
- 64K video RAM support in many modules
- Automatic directory recovery utility for damaged disks
- GEOS™ 2.0/64 128 1581 boot disk transfer utility
- 1541/1571/1581 fast file copier - any direction
- State of the art single or dual drive GCR nybbler
- GCR editor for the experienced hacker
- GEOS™ Parameters & Tools module
- GEOS™ desktop accessible file copier
- GEOS™ desktop accessible sector editor
- Error scanner with unique sector editor
- Single or dual drive high speed data copier
- Scrolling M/L monitor with DriveMon
- Works with ALL Commodore 64, 128 computers in the 64 mode
- Extensive documentation included - over 40 pages.
- AND OUR FAMOUS SSI EXPERT TECHNICAL SUPPORT!

Attention Registered Maverick Owners:
You may upgrade to the new V4

\$9.95

Parameter Module #7 is also available

\$9.95

(Includes Modules 2 through 7)

PLEASE NOTE: Many features now require the use of RAMBOard Available separately from Software Support International

THE 1750 CLONE

Are You Overdrawn At The Memory Bank?

Ah, the venerable Commodore 64 128. Stock, it has better sound than an Atari ST. Better graphics than a CGA equipped IBM. And more memory than....

Uh-oh.

As powerful as the Commodore is, memory has always been its weak spot. Some brilliant programmers have found some ingenious ways to work within the computer's very limited available RAM, but the fact remains that you can only go so far with 64 or even 128K. But you can go MUCH further with 512K.

The bad news is that Commodore's own 1750 512K RAM Expansion Unit (REU) is expensive and almost impossible to find. The good news is, we did something about it.

We bought brand new Commodore 1764 REU's, which come with only 256K of RAM. Next, we installed a 256K upgrade which was custom engineered to our demanding specifications. Once modified, we tested each and every unit and warranted them to be free from defects. The final product is called the 1750 Clone, and it's all the room you'll ever need on a simple plug in cartridge.

Once on board, you'll have a whopping 512K of RAM - the SAME amount of memory found on the Amiga 500. Your Commodore will operate at advanced levels of performance that the original designers never even dreamed of! You'll be amazed at the enhanced capabilities of software that takes advantage of the 1750 Clone, programs like GEOS, PaperClip III, and our own Maverick, to name a few.

The 1750 Clone works EXACTLY like the original 1750. It will open the door on years of extended use from your Commodore as even newer, more powerful software appears on the horizon, software that requires the room the 1750 Clone can provide.

Twin Cities 128 magazine says they "can completely recommend the 1750 Clone." Once you see it work, you'll feel the same way. So don't buy a whole new computer just to get more memory. Get the 1750 Clone instead - and get another decade of satisfaction from your Commodore.

IMPORTANT NOTES - READ CAREFULLY

C-64 64c (but NOT C128 128D) owners MUST buy a heavy-duty power supply to use these units. The power supply is NOT included - it is available from us separately. If you ALREADY own a 1764 RAM cartridge, we can upgrade it for you. Your unit MUST be in perfect working order for us to upgrade it. The turnaround time on upgrades is approx. 2 weeks. It will NOT be necessary for you to purchase a new power supply - the one that came with your 1764 will still work fine.

THE 1750 CLONE

1764 UPGRADE

ONLY \$199.95 ONLY \$124.95

ALL NEW

FasTrac/128 by Mike J. Henry

Look Who's Come Out Of The Basement

At Software Support International, we've gained a reputation for providing Commodore owners with the products they need to get the most out of their computers. We've never hesitated to do whatever it took to provide you with the best software on the market. So when we decided to produce the ultimate 128 utility system, we went looking for one of the ultimate programmers.

We found him... Mike J. Henry, the brilliant young programmer who was the driving force behind the "Basement Boys", the software team that created the phenomenal Fast Hack™. Em, has turned his considerable talents onto the 128. The result: FasTrac 128, the TOTAL utility system for your 128.

Here's a list of the major features found in FasTrac 128. ALL use both 40 and 80 column outputs and are PAL compatible for our overseas users. Read carefully - FasTrac 128 does some truly amazing things:

- FasTrac/128 Disk Copy: Single or dual drive Copy with or without verify Copy in 1541 1581, or true 1571 formats 1764-1750 RAM expansion support 64K video RAM support
- FasTrac/128 File Copy: Single or dual drive File Copy between ANY two Commodore compatible Drives including the SFD-1001, MSD drives, hard drives, and others Copy in 1541 or true 1571 formats 1581 file copy with partition support 1764-1750 RAM expansion support 64K video RAM support Uses the 128's additional memory
- FasTrac/128 M/L Monitor: Go ANYwhere in memory Access both main banks Full scrolling in both directions
- FasTrac/128 Directory Editor: Edit and organize ANY standard directory Edit 1541 or true 1571 formats Edit 1581 directories with full partition support
- FasTrac/128 IBM™ MFM Disk Copier: Copy standard IBM formatted 360K 5.25" disks with your 1571 drive (required) 1764-1750 RAM expansion support 64K video RAM support Uses the 128's extra memory to copy in fewer passes
- FasTrac/128 1581 Duplicator: Single or dual drive 1764-1750 RAM expansion support 64K video RAM support Uses the 128's additional memory This is the latest 1581 to 1581 copier ever created!

Quite a package, eh? We don't want to mislead you - FasTrac 128 is NOT for copying protected software. Our own Maverick™ already has those bases more than covered. FasTrac 128 was designed to allow serious 128 users to get total control of their computers.

Mike J. Henry's
FasTrac/128

Only \$34.95

ATTN. REGISTERED Maverick Owners ONLY: You may buy ONE (1) copy of FasTrac/128 for only \$20.00
This offer is ONLY for orders placed with Software Support.

C-128 VIDEO RAM UPGRADES

For 128 Owners Who Refuse To Be Left Behind

When Commodore first released the new 128D, we got one, opened it up, and took a good look. It didn't take long to discover one MAJOR difference. The standard C-128 has just 16K of video RAM, while the newer 128D has 64K, 400% more! We knew that there were tremendous advantages to the extra RAM. Like being able to scroll through video memory or the potential for greatly enhanced color resolution. And, since Commodore had seen fit to make it a standard feature on all new 128D's, we knew it was only a matter of time before new software started taking advantage of the full 64K.

That time has arrived! Programs like BASIC 8, the BASIC 8 Toolkit, Spectrum 128, Sketchpad 128, and News Maker 128 have all been coded to utilize the full 64K of video RAM found on the 128D's. So if you've got a regular C-128 with only 16K of video RAM, you've got a problem. And we've got the solution.

You could upgrade on your own - but if thoughts of splattered solder and heat-damaged motherboards bother you, relax: we've developed a module that just plugs right in to your C-128. No soldering, no hassles. Now your computer can have the same 64K video RAM as the new machines. And you'll be ready for whatever the future holds.

PLUG-IN 64K VIDEO RAM UPGRADE FOR C-128's

ONLY \$49.95

Includes easy installation instructions



PLEASE READ BEFORE ORDERING: We accept money orders, certified checks, VISA, M.C. and Discover. Previous Software Support customers may use C.O.D. and personal checks. Orders shipped to U.S.A. (48 states), F.P.O. A.P.O. or possessions, please add \$3.50 per order for S & H. U.S. shipping is by UPS ground in most cases. FAST 2nd DAY AIR available: add \$1.00 per pound additional (U.S. 48 states only). Alaska or Hawaii (all orders shipped 2nd day air), please add \$7.50 per order for S & H. C.O.D. available to U.S. customers only (50 states); add \$2.75 along with your S & H charges per order. Canadian customers may calculate the S & H charges by including \$4.00 (minimum charge) for the first two pieces of SOFTWARE and \$1.00 for each additional piece per shipment. All monies must be submitted in U.S. funds. Canadians must call or write for hardware shipping charges. Foreign customers must call or write for shipping charges. Defective items are replaced at no charge if sent postpaid. All in stock orders are processed within 24 hours. U.S. SOFTWARE orders over \$100 will be shipped 2nd Day Air at our regular \$3.50 S & H charge (48 states only). Washington residents please add 7.6% additional for Sales Tax. All prices subject to change. All sales are final unless authorized by management.

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Or call our toll-free order line at
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Technical support available, Call
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