

TPUG Newsletter

Views and News of Toronto Pet Users Group, Inc.

5334 Yonge Street, Box #116 Willowdale, Ontario, M2N 6M2 (416) 733-2933 - noon to 5 pm - weekdays

Volume 3, Number 2

January/February 1989

LETTER FROM THE PRESIDENT, JANUARY 1989

Recently we held our annual meeting at which yours truly was re-elected. I wish to thank those who supported me in the past. I urge all interested to support the Directors in making TPUG the club it should be.

During our annual meeting a member suggested that we research and develop Aims and Objectives for the current year and years to follow. I do ask all members who wish to see change or continuance of our present functions, please write me and give me your suggestions. It is not always possible to serve all equally well, but I assure you that your ideas will be carefully evaluated. The past year was one of stress and trauma. I believe we are on the mend. All local meetings continue to function; to these we look for suggestions as well.

Jim Butterfield is becoming a regular guest at West End meetings. His help and tips are always welcome. Congratulations to Jim and Vicki, they recently added a new addition to their family. Perhaps this could be described as wetware? A beautiful new daughter, Susannah.

Our annual appearance at the World of Commodore assured many that we truly still exist. Again, it was an outstanding success with special thanks to Ken Poulton and all his helpers.

Once upon a time ...

when you joined TPUG, you were rewarded with a 'free' subscription to our current choice of Commodore-related magazine. That was fine, as far as it went, however this feature also caused hardship when subscriptions crossed time barriers. What did our members do when they already had a subscription to such and such magazine, and what happened to that subscription when they ceased to be TPUG members? Well, dear readers, let me warn you, approach these friendly arrangements with extreme care - better yet, don't bother! Neither the Magazines concerned nor the TPUG office need the practice of answering irate 'subscription' queries.

So, reverting to what we should have done in the first place, TPUG, in an effort to bring our members quality reading at a special rate, has extended an offer to ALL magazine publishers to pass on any special member rates they might care to offer to TPUG members.

At the World of Commodore show, this idea was received by all publishers with enthusiasm, and the promise they

would get back to us 'real soon'. Now, being Commodore users, you all know what that infamous phrase means, and we should know better. However, rest assured, you will be duly notified right here in The Newsletter of all offers we receive at TPUG on behalf of our members.

See News Breaks page 4

And our apologies for the size of the last issue (reduced from 8 1/2 * 11). You see, our budget was based on an 8-page issue - then we received the latest Library updates, and there we were with 12 pages! As luck would have it, our local printer suggested the reduced size alternative at the same cost - and it appears that the post office also looks favourably on the weight of 12 pages reduced size.

As for this issue, it looks at least another 12 pages (and that without the latest Fred Fish updates, another 6 pages!!). Let me put it to you, the members, what is your preference, less library updates, more articles? A separate annual library supplement?

Y'r Editor's comments

Membership Information

| | |
|----------------------------------|---------|
| Regular (attends meetings) | \$35 |
| Student (as above) | \$25 |
| Associate (Canada) | \$25 |
| Associate (U.S.) | \$25 US |
| Associate(overseas air) | \$45 US |

Board of Directors 1989

| | |
|-----------------------------|-----------------|
| Al Farquharson | president |
| Ken Poulton | vice president |
| John Easton | secretary |
| Bill Cumberland | treasurer |
| Ian McIntosh | publicity |
| Dr. Wilf Meissner | assoc. clubs |
| Steve Punter | resident expert |
| Richard Bradley | local clubs |
| Ken Rolison | green as grass |
| Mike Donegan | resident cynic |
| Walter Melamet-Vetter | advisor |
| Paul Kreppenhof | librarian |

Telecommunications Contacts

| | |
|---------------------|----------------|
| Quantumlink | TPug news |
| | TPUGMAIL |
| | TPUGOFFICE |
| TPUG BBS | OFFICE |
| TPUG Newsletter | |
| John Easton | (416) 251-1511 |
| TPUG Office | |
| Sylvia Gallus | (416) 733-2933 |

Table of Contents

| | |
|-------------------------|---|
| TPUG update | 1 |
| Members Comments | 2 |
| Members Reviews | 3 |
| News Breaks | 4 |
| Meeting Schedule | 4 |
| BBS Info | 4 |
| Butterfield | 5 |
| Assembler and You | 6 |
| Library updates | 7 |

How It Happened

- doing it right would have cost so much!
Isaac Azimov

My brother began to dictate in his best oratorical style, the one which has the tribes hanging on his words.

"In the beginning," he said, "exactly 15.2 billion years ago, there was a big bang and the Universe."

But I had stopped writing. "Fifteen billion years ago?" I said incredulously.

"Absolutely," he said, "I'm inspired."

"I don't question your inspiration," I said. (I had better not. He's three years younger than I am, but I don't try questioning his inspiration. Neither does anyone else or there's Hell to pay.) "But are you going to tell the story of the Creation over a period of fifteen billion years?"

"I have to," said my brother. "That's how long it took. I have it all in here," he tapped his forehead, "and it's on the very highest authority."

By now I had put down my reed pen. "Do you know the price of papyrus?" I said.

"What?" (He may be inspired, but I frequently noticed that the inspiration didn't include such sordid matters as the price of papyrus)

I said, "Suppose you describe one million years of events to each roll of papyrus. That means you'll have to fill fifteen thousand rolls. You'll have to talk long enough to fill them, and you know that you begin to stammer after a while. I'll have to write enough to fill them, and my fingers will fall off. And even if we can afford all that papyrus and you have the voice and I have the strength, who's going to copy it? We've got to have a guarantee of a hundred copies before we can publish, and without that where will we get royalties from?"

My brother thought for a while. He said, "you think I ought to cut it down?"

"Way down," I said, "if you expect to reach the public."

"How about a hundred years?" he said. "How about six days?" I said.

He said, horrified, "You can't squeeze Creation into six days."

I said, "This is all the papyrus I have. What do you think?"

"Oh, well," he said, and began to dictate again, "In the beginning - Does it have to be six days, Aaron?"

I said, firmly, "Six days, Moses."

Frustration

by Paul W. Aitchison (c)

Once upon a time there was an avid computer enthusiast who by chance had an Amiga 500. Because his employer used the BLUE machines he decided to invest in a 5.25" disk drive and a program to give him IBM compatibility. No problem you say. How wrong oh wise one. Upon booting said "Transformer" he found his store boughten disk contained a nasty gremlin in its boot sector, which if given half a chance would have delighted in mucking up all his disks. *Whoa is me*, but this was nothing compared to the tribulations he would suffer attempting to make the 1020 (5.25") drive work on his meager machine.

Upon setting all pieces to-gether this poor bumpkin now finds that his almighty computer does not know what a "DF2:" is although there it sits with its power light glowing brightly back at his dim brain. Check out the mountlist a friend suggests, looks okay by all counts. Try moving the 1020 to a different position even wrap the sucker with tinfoil in case some nasty R.F. rays may be causing havoc, nope, not that. Must be incorrectly wired up, or poor grounding, or polarity of house wiring, nope.

Time for a visit to the good people at the computer store where said 1020 was purchased, better take whole damn system just in case. What ??? It works fine at the land of plenty, even with his own computer driving it. Must be something this slow witted character is doing wrong. Scurry home and hook up again, Oh no, no go.... Now what does he do? Well... eliminate all those nice extras like the printer, monitor, joystick, RF modulator (poor sap can't afford a real RGB monitor), still no action from this dumb thing.

Finally he gets a brain wave (a rare commodity), eliminate the 1010 (3.5") external drive and hook directly to computer with the 1020, just a second, you have to go into the "DEVS" directory from the CLI and modify the "Mountlist" with "Ed", so the Amiga knows that the 1020 is drive "DF1:" now. WOW!!!! This sucker really does work! There must be something wrong with his 1010 drive. Sure enough the newer versions of the 1010 drives do not have pass-through on some pins, so that two 1010's cannot be hooked in series and fry the Amiga's circuit board / power supply.

A call to Commodore's product support gets a good guy, (Thomas Christoff) who says not to worry, you don't have to modify the 1010 drive (a \$40.00 user cost), just don't pay any mind to the Commodore wiring setups and install the 1020 first at the computer then the 1010 second, nothing bad will happen. This makes the 1020 "DF1:" and the 1010 "DF2:", the mountlist will have to be edited to reflect this, of course. Ookaayy....

Sure enough it works, old bonehead now feels much better, and can learn the MSDOS system at speed. It seems some people just aren't too bright eh? The moral to the story is *don't believe anything you read and only half of what you see!*

BROKEN BITS

Alex Howell

Well, we seem to have no BROKEN BITS, except from some information on the 1581 with use of the EXTREMELY dangerous APPEND option. It will cause the following if you fill the file to a complete block once closed.

If the file is APPENDED and it adds the new part on to a fresh sector, one of two things can happen. Either it is recorded as 2 extra blocks or it isn't recorded in the BAM at all and would be over-written by the next file and would be connected to the first as if it was appended. The file that gets an extra block in the BAM can be freed by Validating the diskette. Though, the copier on the disk from Commodore has not been able to copy my Bulletin Board disk due to the append's handywork. Commodore is still researching all of the bugs.

SHORT CIRCUITS

The following one-liner will read any SEQ. disk file to your screen:
1 OPEN 8,8,"FILE NAME":FOR X=0 TO 1:GET#8,A\$:X=ST:PRINT A\$:NEXT:CLOSE 8:END

This quickie illustrates a useful application of the counter variable in the FOR-NEXT loop. The variable "X" will remain "0" 'till the end of the file is reached, at which time it will become "64" and break out of the loop.

When I purchased my Amiga I knew what I would use it for; not for Games, not for Word Processing, not for Process control, I already had computers to perform these functions at least as good as the Amiga could. I wanted a computer to do graphics, precisely Computer Aided Drafting C.A.D. However, after purchasing my Amiga, even at an exceptional bargain price, little money was left for commercial programs. So I had one option, to check out the Public Domain and Shareware offerings. Lo and behold I stumbled onto MCAD on Fish #74 (shareware) and found it exceptionally powerful. I played around with it and liked it very much, but it had a few shortcomings, namely the inability to dump the final renderings to a printer or, a plotter that I am likely to own.

When INTROCAD appeared as a commercial version of MCAD I was quite willing to lay down hard cash. This program is very easy to use, a manual is almost not needed, a small manual is of course included, pull down menus are self explanatory and a little experimenting finds you doing things you never dreamed possible. Dumping to just about any printer is possible in several modes from a "quick" to "draft" and "final" print mode, all done in high resolution. The printouts are in "portrait" or "landscape" (sideways) at your option and optimize the full page. Printing may be the complete drawing or any portion that you may wish to dump. But whoa, I'm getting away ahead of myself, you can't dump anything until you've drawn a picture, although some neat samples are included.

Drawing consists of primitives; circles, boxes, arcs, lines, freehand etc. in 2 dimensions, 16 colours are available but this is a CAD program not a Draw type program and area fills are not supported. Several lines are available from solid to dot-dash etc. and a "Heavy" option on any line or text. Text is available from the keyboard and maybe any size or location you desire. When drawing several grid configurations are available which can be turned on or off to your liking. Lines can be snapped to the grids to give perfectly straight lines or to the drawing, if a drawing coordinate is nearby, giving neat, tidy corners. Rulers are provided, as are numeric coordinates, angle, and length of last line drawn, these of course are turn offable. Measurement

of anything on the screen is possible with a measuring tool. Cloning of any form can be done once it is "Grouped" this saves much time when drawing similar forms.

Once you have a form drawn the "EDIT" tools are quite powerful "Erase" is self explanatory, "Size" comes in two flavours; with or without distortion, very powerful, "Move" allows you to move any line or grouped object anywhere you care to, "Rotate" allows rotation of any object in 90 degree increments or variable as you wish, "Point" lets you stretch any coordinate on a primitive any amount that pleases you, "Color" and "Linetype" permit the changing of colour and line detail.

a little experimenting finds you doing things you never thought possible

Possibly the most powerful tool available to the user is "Zoom" this tool lets you outline an area that you wish to see closer, unlike DPAINT this does not just let you see the pixel clearer, Zoom can be used over and over again, exploring deeper and deeper into your drawing allowing drawing of a very small area in super great detail. "Fullpicture" then zooms you backout to see a complete overview of your creation. The detail done in a "Zoom" is not lost when changing to various depths but, the screen even though in high resolution mode cannot display all this detail as you pullback out of a Zoom.

Once you have created the drawings for the Eiffel Tower or whatever, you can save to the "Drawings" drawer under your own title, 'requesters' are quite complete allowing sorting of titles and accessing of various devices. If you want to you can save various parts of your drawing in the "Parts" drawer to be called up on another drawing in the future.

INTROCAD as the name suggests is not a full blown CAD program suitable for industry but it is quite suitable for the home user and small industry applications. What do I dislike? Very little, I would like a "Mirror" tool and some way to draw ellipses other than distorting arcs or freehand. On a whole this is a super program at an affordable price, approx. \$70.00 (U.S.), not bad when AUTOCAD

for the IBM sells for over \$2000.00.

Equipment needed; Amiga 512K + printer or plotter, although another 512K and a second disc drive certainly would be handy. INTROCAD is not limited by chip memory and can use fast memory fully, so your drawings can be enormous. Free memory is always displayed if you wish. Several complimentary programs are included on the INTROCAD disk as is much text describing advanced user info and printer/plotter formats. The author, Tim Mooney, is anxious for anyone contemplating the purchase of INTROCAD to try MCAD or the ICAD-DEMO.ARC available on the BBS DeepThought 919-471-6436. If you purchase this program and have problems I will gladly help if I can.

Paul Aitchison
Brantford, Ontario
(519) 759-4587

INTROCAD
Progressive Peripherals
and Software, Inc.
464 Kalamath St.
Denver, CO 80204

author:
Tim Mooney
5904 Vandergrift Ave.
Rockville, MD 20851

Hardy Pets

Who said the Commodore PET was dead? A use has been found for some PETs which would certainly leave other computers for dead.

The telescopes at Mount John are controlled by PETs. The observatory there has all sorts of other newer, flashier computers to perform heaps of calculations and things but the good old PET is left out in the cold with the telescopes to control their movements. Apparently the newer, flashier, more expensive number crunchers can't hack the extremes of temperature to which the telescopes, and therefore the PETs, are exposed.

....from The CCUG Connection
Christchurch Commodore
Users' Group Inc.
Christchurch, New Zealand

News Breaks

RUN magazine

AmigaWorld regular rate \$38.97
TPUG rate \$24.97
RUN regular rate \$27.97
TPUG rate \$17.97
ReRUN disks 25% discount off the advertised prices

This offer applies to new or renewal subscriptions. Prepayment is required (VISA, MasterCard or Money Order in U.S. funds).

Send orders to **TPUG Offer**
RUN/AmigaWorld
80 Elm Street
Peterborough, NH
03458 - USA

Amigo Times

Monthly Amiga Magazine and Disk

6 issues regular rate \$51.00
TPUG rate \$39.95
12 Issues regular rate \$87.00
TPUG rate \$69.95
24 issues regular rate \$158.00
TPUG rate \$129.95

This offer applies to new or renewal subscriptions. Prepayment is required (cheque or Money Order in Canadian Funds).

Send orders to **TPUG Offer**
Amigo Times
5124 St. Laurent
Suite 100
Ville St. Catherine
Quebec, JOL 1E0

Quantity discounts on TPUG Disks

On orders of 20 or more Amiga Disks, TPUG offers a 40% discount to members. That works out to \$6.00 per disk and applies to all Amiga disks in our library, TPUG, FISH and AMICUS series. (Postage extra)

Meeting Schedule

C-128: First Tuesday of the month.

Contact - George Skinner - (416) 255-8538 (mornings)

Amiga Central: Second Tuesday of the month.

Contact - Paul Kreppenhof - (416) 234-1067

C-64: Fourth Tuesday of the month.

Contact - Wilf Meissner - (416) 789-4335

All of the above meetings commence at 7:30 p.m. in the York Public Library, 1745 Eglinton Ave. W. (just east of Dufferin), in the Auditorium or Story Hour Room.

Westside and Amiga West: Third Thursday of the month in the Lorne Park Community Center, Lorne Park Road immediately south of Lorne Park Secondary School at Truscott Avenue (use the school parking lot). From Queen Elizabeth Highway, exit south on Southdown Road to first main intersection (Truscott Avenue), proceed east 2 miles to dead end at Lorne Park Road, turn south and y'r there.

Contact - Bill Cumberland (416) 278-7687

Eastside: Second Monday of the month at Dunbarton High School, in the computer room. Go north on Whites Rd. from the traffic lights at Highway 2 to the next traffic lights; turn left to parking lot.

Contact - Don Farrow via Sylvia at the TPUG Office, 733-2933

TPUG BBS

PunterNet Node 2

(416) 273-6300 (Mississauga) (416) 733-2933 (Toronto)
24 hours a day, 7 days a week
except weekdays noon to 5 pm.

* the password is BOOK *

TPUG on Quantumlinc

The TPUG SIG is located in the Commodore Information Network's User Group Support Center



Don't forget -
TPUG still
supports the
Commodore
PET !!

- and this just about leaves enough room for a quick note from y'r reluctant Editor, John Easton, who still seems to be the only one available with the necessary 'publishing' equipment. (Frank Winter, where are you?) Oh, the frustration of this role - knowing there is so much to pass on, and even as it is printed, it is already out of date!! Is this my telecommunications bias showing? For one who spends some 15 hours per month in the pursuit of electronic 'news' - perhaps!!

If you've noticed no advertising this issue, the explanation is simple - no space. We will post short members advertisements (space and timeliness permitting) on request. Dealer ads are accepted (space permitting) at the current cost per page (or portion thereof) of printing and mailing this newsletter. Call for info.

TPUG Newsletter is published bimonthly by the Toronto Pet User's Group (TPUG), Inc., the world's largest Commodore Users' Group. TPUG is a non-profit corporation dedicated to the service and support of owners and users of Commodore computers. All rights to material published in TPUG Newsletter are reserved by TPUG, Inc. and no material may be reprinted without written permission except where specifically stated.

Some considerable time ago, a fellow scalled Isaac Newton was trying to work out the laws behind the motions of the planets. To do so, he developed calculus, a branch of mathematics that is a cornerstone of modern science.

Calculus works on this principle: if you magnify anything sufficiently, it will become smooth and the arithmetic will become easy. Thus, a spinning planet looping around a sun has a complex motion; but examine its motion over a split second, and everything is moving in a straight line. Intricate shapes become a set of rectangles if we slice them thinly enough.

Calculus allows us to analyze things that might otherwise be impossible. The earth is curved; but a small enough section of the surface is flat. Or is it?

Our experience tells us differently. Examine a flat surface under a microscope, and it shows bumps. Examine the bumps under further magnification, and we may get whiskers, tangles, blobs and whatever. More, and we may see crystalline structures of atoms (and they are lumpy). The smooth ball of planet earth, as seen from space, starts showing mountains and hills as we get closer. The mountains show creases, folds, and boulders; the boulders show grain structure; and so on. The motion of an object may appear at a distance to be smooth; as we get closer, vibrations and other sub-motions become visible.

Newton wasn't exactly wrong. He gave us a science that allows us to examine the world around us with insight and precision. But the assumptions of calculus don't quite match the practical world we know. In that sense, Newton wasn't exactly right, either.

Yet his fundamental mathematical idea seemed indisputable: the closer you examine a mathematical function, the smoother it gets. Leibnitz, who invented a slightly different form of calculus about the same time as Newton, did point out that there are some functions that calculus can't deal with too well; but for the most part, science forged ahead with the glib idea that virtually everything could be analyzed with this new tool.

Enter Benoit Mandelbrot. He evolved a number of functions that did not behave smoothly. The more you mag-

nified them, the more detail you got ... forever. These kind of functions are called fractals. And fractal geometry follows almost exactly the opposite pattern from calculus .. with fractals, some things NEVER get smoother.

You may have seen some of the abstract pictures that can be drawn of a Mandelbrot set function. The fun part is this: pick an interesting place, and magnify it. Do it again. And again. Within the limits of the computer's mathematical accuracy, there's no limit to the depth of your exploration. If you don't have a Mandelbrot program from your club library, think about getting one.

How can you make a mathematical function that's not smooth? You probably recall all those graphs you drew in high school looked pretty smooth if you did them right ("Now, draw a smooth curve through these points..."). Surprisingly, it's not hard. I'll give you a simple example. The example is a "real" Mandelbrot function, perhaps the best known one .. but to save reading difficulty, we won't talk about the "complex numbers" part of it.

fractals a new way to look at numbers.

Here's the function: take any number. Square it. Add the original number and square it again. Do it all again... and so on. Does the value stay within a reasonable range? If so, the original number is part of "the Mandelbrot set". If the number goes "outasight", it's not part of the set. So .. which numbers are in the set, and which are not?

Try 1. Square it, add 1, you have 2. Again, you have five; again, 26. The number's on the move, and it will never get back inside a reasonable range. So 1 is not part of the Mandelbrot set.

Zero is part of the set; no matter how many time you square and add, you'll still get zero. Somewhere between zero and 1, numbers will switch from being in the set to being out of the set. Can you write a program to find out where?

Negative numbers behave more strangely. Try -1. Squared, you get 1. Add -1 and square again, and you get 0. Again, and you get 1. The value never stabilizes, but it stays within range, so -1 is part of the Mandelbrot set. How about -2? It just barely makes it; but check it for

yourself. And you should look at what happens to numbers between -1 and -2; they wriggle around a lot, but never settle down.

You might know about "complex numbers"; they are an extension of regular numbers. A complex number is defined with two values, such as 1.3 and .72. To add two complex numbers, such as (1,2) plus (3,4) you just add the first and last separately, to get (4,6) in this case. To square a complex number, we'll use a formula: the square of (x,y) is $(x^2 - y^2, 2xy)$. Thus, the square of (3,2) is (5,12). Using these rules, we can take complex numbers through the same formula as described above. Again, some of these numbers stay within bounds, and some go zooming off into high values. And by the way: since a complex number has two parts, we can plot it on a two-dimensional graph.

Now, the interesting question is not whether a number is part of the Mandelbrot set or not. The really fun part is: if the number is outside the set, how quickly will it zoom out to high values? Some numbers take off right away ... others hop around in small value areas for a long time before they finally make a break for it.

Mandelbrot graphing programs colour a number point according to how fast it takes off. Numbers inside the set, such as zero, are often coloured black. Numbers that move out immediately are usually white. A number such as (-.38) wriggles around for almost 20 calculations before it takes the jump.

The central part of the main Mandelbrot figure looks somewhat like a black beetle. But around it are edges of intricacy and colour; and the more you magnify them, the more intricate the detail gets. Even at a magnification of millions of times, there's still more and more detail to be explored.

We know that calculus is very useful indeed. Are fractals good for anything other than pretty pictures? Well, yes, to a limited extent. They have been used in graphics compression, and to generate test data for certain types of studies. They can create realistic-looking landscapes for games and simulations, where detail is not lost as you get closer. Perhaps most important: fractals have given us a new way to look at numbers.

This article may be reprinted freely without additional permission.

ASSEMBLER and You.

After a long winter, I thought that maybe you would be ready for some more ML commands. Therefore, below is a short description of 5 useful commands.

If you have a Reference Manual for your computer, you will be able to understand even more of the commands listed in it with this list by your side. As with most of these commands, you can relate to most of the 6502's code once you have the BASIC commands down.

Before we continue, I should point out that there are 7 different addressing modes. I'll list them with NUMBERS beside them, they can be used as a fast reference to the numbers besides the examples below.

Addressing Modes

- (1) Immediate (enter an actual number (\$00 to \$FF))
- (2) Zero Page (Address can be from \$00 to \$FF ONLY)
- (3) Absolute (Address can be from \$0000 to \$FFFF)
- (4) Zero page+ (Addressed with X or Y added to address)
- (5) Absolute+ (Addressed with X or Y added to address)
- (6) Indirect X (Address + X has target address)
- (7) Indirect Y (Target address is in zero page at offset with addition of the "Y" to the address)

| LDA | (Basic PEEK equivalent) |
|------------------|------------------------------------|
| LDA #\$0A | :A=10 |
| (1) LDA \$10 | :A=PEEK(16) |
| (2) LDA \$1000 | :A=PEEK(4096) |
| (3) LDA \$10,X | :A=PEEK(16+X) |
| (4) LDA \$10,Y | :A=PEEK(16+Y) |
| (4) LDA \$1000,X | :A=PEEK(4096+X) |
| (5) LDA \$1000,Y | :A=PEEK(4096+Y) |
| (6) LDA (\$10,X) | :A=PEEK(PEEK(16+X)+PEEK(17+X)*256) |
| (7) LDA (\$10),Y | :A=PEEK((PEEK(16)+PEEK(17)*256)+Y) |

(6) & (7) are extremely complicated, though they do easy tasks that make everything worth while when using them, as they have such a unique addressing feature that gives you almost infinite possibilities for programming.

(6) get's it's address from the BASE (\$10,X) by using the address found in memory location \$10+X to obtain it's target address. Whereas (7) gets it's target address from it's offset (\$10) and adds Y onto it.

| STA | (Basic POKE equivalent) |
|------------------|------------------------------------|
| STA \$10 | :A=PEEK(16) |
| (2) STA \$1000 | :A=PEEK(4096) |
| (3) STA \$10,X | :A=PEEK(16+X) |
| (4) STA \$10,Y | :A=PEEK(16+Y) |
| (4) STA \$1000,X | :A=PEEK(4096+X) |
| (5) STA \$1000,Y | :A=PEEK(4096+Y) |
| (6) STA (\$10,X) | :A=PEEK(PEEK(16+X)+PEEK(17+X)*256) |
| (7) STA (\$10),Y | :A=PEEK((PEEK(16)+PEEK(17)*256)+Y) |

| CMP | (Basic IF equivalent) |
|------------------|--------------------------------------|
| CMP #\$0A | :IF A=10 |
| (1) CMP \$10 | :IF A=PEEK(16) |
| (2) CMP \$1000 | :IF A=PEEK(4096) |
| (3) CMP \$10,X | :IF A=PEEK(16+X) |
| (4) CMP \$10,Y | :IF A=PEEK(16+Y) |
| (4) CMP \$1000,X | :IF A=PEEK(4096+X) |
| (5) CMP \$1000,Y | :IF A=PEEK(4096+Y) |
| (6) CMP (\$10,X) | :IFA=PEEK(PEEK(16+X)+PEEK(17+X)*256) |
| (7) CMP (\$10),Y | :IFA=PEEK((PEEK(16)+PEEK(17)*256)+Y) |

Alex Howell



| ADC | (Basic ADDITION) |
|------------------|---------------------------------------|
| ADC #\$0A | :A=A+10 |
| (1) ADC \$10 | :A=A+PEEK(16) |
| (2) ADC \$1000 | :A=A+PEEK(4096) |
| (3) ADC \$10,X | :A=A+PEEK(16+X) |
| (4) ADC \$10,Y | :A=A+PEEK(16+Y) |
| (4) ADC \$1000,X | :A=A+PEEK(4096+X) |
| (5) ADC \$1000,Y | :A=A+PEEK(4096+Y) |
| (6) ADC (\$10,X) | :A=A+(PEEK(PEEK(16+X)+PEEK(17+X)*256) |
| (7) ADC (\$10),Y | :A=A+(PEEK(PEEK(16)+PEEK(17)*256)+Y) |

| SBC | (Basic SUBTRACTION) |
|------------------|--------------------------------------|
| SBC #\$0A | :A=A-10 |
| (1) SBC \$10 | :A=A-PEEK(16) |
| (2) SBC \$1000 | :A=A-PEEK(4096) |
| (3) SBC \$10,X | :A=A-PEEK(16+X) |
| (4) SBC \$10,Y | :A=A-PEEK(16+Y) |
| (4) SBC \$1000,X | :A=A-PEEK(4096+X) |
| (5) SBC \$1000,Y | :A=A-PEEK(4096+Y) |
| (6) SBC (\$10,X) | :A=A-PEEK(PEEK(16+X)+PEEK(17+X)*256) |
| (7) SBC (\$10),Y | :A=A-PEEK((PEEK(16)+PEEK(17)*256)+Y) |

Experiment with those commands. If there is any problem with the execution of them, then look at last month's examples as those all work pretty well the same.

"ADC" and "SBC" need to be told to "CLC" and "SEC" before they get to operate, as the "CLC" tells the computer to Clear the Carry Flag and "SEC" tells the computer to Set the Carry Flag to 1. Those are set up as follows:

```
CLC
ADC #$00
```

```
SEC
SBC #$00
```

The Carry Flag keeps track of the Carry when adding and subtracting, just like you would when doing it by hand.

It can also allow you to do even higher addition than 1 byte by checking for the CARRY or, since the machine doesn't constantly change the CARRY flag, you can do the following:

```
CLC
LDA #$10
ADC $1000
STA $1000
LDA $1001
ADC #$00
STA $1001
```

The above will also work with "SBC" and "SEC". It also allows you to get the carry from the first addition and add it to another byte. So, in reality, you can add higher than 1 digit long without much trouble.

(G)U1 Utilities
(previously (C)GUA)

See previous listings for full details

GEODIRPRINT
PHOTO PRINT
CONVERT 1.4
CONVERT V2.1
ICON EDIT 2.1
IDENTIFONT
DUMP
DUMP DOUBLE
CHANGE INPUT
CHANGE PRINTER
40 SCREENPRINTER
GEOHEXCALC
PICONVERT
MACTO64
MACATTACK
INSIDE MAC
SOLO POKER
C I R C E
FONTS
PREFERENCES

(G)U2 - Show Disk
World of Commodore VI

GEOS DISK ID a desk accessory which can tell you which disk you are currently using.
QUICKVIEW this application file lets you view all types of text files without having to load GeoWrite.
ICON EDIT 2.1 read documentation files.
DISK PROTECT - self explanatory.
FONT EDITOR 1.2 a 64 BASIC utility that lets you custom design your

own fonts for GEOS. Documentation included.

SEQ READ & PRINT another 64 BASIC utility to read Commodore SEQ files.
CONVERT 128V a C 128 version of CONVERT. Lets GEOS 128 users convert SEQ files to GEOS and vice versa.
CONVERT 3.0V latest addition to the growing family of CONVERT application files for GEOS 64.
GEOFORMAT a desk accessory to format a disk much faster than through standard GEOS formatting procedures.
KOALA PAD III latest version input driver for the popular graphics tablet.
GEODUMP dump GEOS files to printer.
DISPLAY.CLK Don't know what time it is? Then use this handy desk accessory to constantly display and update the clock in the upper right hand corner of the GEOS screen. Looks similar to the clock/calendar display in GEOS 2.0.
PREFERENCES border colour is black, mouse pointer in the shape of a dark blue mouse, background colour light grey.
WRITERS REVENGE (formerly DOWNGRADE 5.0) converts any GeoWrite 2.X file to GeoWrite 1.3.
STRESS - a GeoWrite text file about stress.
DIALOG - more GeoWrite text files
INSURANCE - more GeoWrite text files - the pitfalls of insurance.
DESK ORGANIZER a neat application utility to add or delete DeskTop pages and move files towards the begin-

ning pages of the DeskTop.

GEOSHAND 2 a GeoPaint file allows you to change the mouse pointer to a hand.
DVORAK a GeoWrite font combination utility to rearrange all the keys to DVORAK format.
GRABBER UPGRADE an upgrade utility for the original Grabber that comes with the DESKPAC K1 software. Documentation included.
CBM 1526/802 improved printer driver.
UNTRASH lets you uncover recently trashed GEOS files from the wastebasket. Not needed with GEOS 2.0.
SET PATTERN, PATTERN EDIT, PER/PATTERNEDIT, - edit GeoPaint patterns, use through GeoPaint.
DISPMEM displays memory locations in hex format, where each GEOS file resides in memory.
GEOICON.E a "big" version of ICON.EDIT. Much easier on the eyes, not as powerful as the original IconEdit V2.1.
NOTE PRINTER this 64 BASIC utility will printout notes from your notepad.
PHOTOVIEW look through photo albums and photo scraps with this nifty application utility.
WRITEVIEW view GeoWrite text without loading GeoWrite.
64 L2R2L 1351 - yet another 1351 input driver for the beloved Commodore critter. Normal operations with left button, right button will move pointer to the edge of the screen.

Picture Disks New Releases

librarians - Anne Gudz & George Nicholson

(C)HR

Note - this disk also contains the overflow programs from (C)I20 (INFO disk 20). This disk is a must for graphics users.
autodoc By pressing the ? one can learn to use this program with your own disks. By pressing the return key, the program will be re-booted.
printbootdata This program permits one to print the directory of this disk as well as print the information found on this disk.
gas64 GAS (graphic assault system) is a high level, sophisticated toolkit of

commercial quality, with help screens, and in depth documentation.
gasdocs.sda A self dissolving arc from Wayne Schmidt, Master of C= graphics, a great graphics tutorial.
CAUTION! RUN this when a blank formatted disk is in the drive!
rgg.doc This is the 'read me' file for 'grafpax' program, which uses machine language drawing routines to plot high resolution graphs, histograms and even pie charts.
grafpax.cz Loader for 'grafpax'. Use the file editor option to enter data, select graph type, and watch the graph

painted on your screen. SAVE feature included.
seq read & print Use this sequential file reader to read and or print the seq files on this or any other TPUG disk.
doodle slideshow This program loads, displays and even sends to printer (1525/801, 1526/802) the graphs constructed by 'grafpax'.
grafdocs.sda Extensive docs for 'grafpax', in self dissolving arc format.
CAUTION: LOAD but do not RUN this until you replace this disk with a blank formatted disk.

Show Disk World of Commodore VI, December 1988

C-64 WEDGE (DOS 5.1) - is a boot which loads DOS 5.1 which is an enhanced DOS utility for the 1541.

E-Z-SEQ.READ lets the user view SEQuential files from disk to either screen or printer.

FAST FILE COPIER copies files quite quickly from one disk to another.

ZAPLOAD 64 this fast loading utility came along with the 1581 disk drive. It works with the 1541, 1571 and 1581 drives.

FSLIDE is a program that works without a fastloading type of cartridge to load hi-res pictures in either Doodle (DD) or Koala (PIC) format. Four Koala and three Doodle pictures are on this disk.

DRUM MAN, KALEIDOSCOPE, MAX HEADROOM, SWINTH - these four programs take great advantage of the 64's SID and VIC chips to perform the most extraordinary graphics and sound to date. Max Headroom doesn't have sound, but is still unique.

SIDPIC V3.4 plays .MUS type of files. Please read accompanying documentation first.

JAMES BOND.MUS, JAMES BOND.PIC - load and run SIDPIC V3.4 to view/listen to these files.

PINK - a game by a German author os based on the Pink Panther movies.

Read documentation to understand the game.

DEALING CARDS.C, SHUFFLE ONE.C, SHUFFLE TWO.C - sound effects of a deck of cards. Documentation included.

MOCKPAINT/CARS, DDMOC KPAINT, D.MOCKPAINT, CARS NA - excellent music and pictures showing MACPAINT. Documentation included.

TERMINAL.C1 V2A4 is a very simple terminal program for the 1670 modem. Quite adequate for day-to-day telecommunications. Supports C1 protocol and 300/1200 BPS.

(C)ABE Jan 1989

DISK DOCTOR V2.0 Checks disk alignment before the re-alignment process is engaged.

STAR WARS Complete onscreen instructions are included in yet another fine version of this arcade game.

MEMORY-MANAGER Hold 8 BASIC programs in memory with this handy utility.

EZ BIG ALPHABET A nicely done tutorial demonstrating how to make

large letters for video titles etc.
2COL PRINTER2.5 Prints sequential files in two column format. Useful for newsletters, etc.

DRIVE YOU NUTS A computer version of the Rubix Cube puzzle.

PSI This game tests your ESP, or PSI (pronounced SIGH) abilities and rates your performance on a % basis.

WITNESS IN COURT A text adventure in which you testify to a crime you have observed. There are different choices to take, and 3 ways to win.

DBASE64.V1 A database with multiple fields, and many features found in professional quality programs. Instructions included. Saves to disk or tape.

DISKMAGIC.2 Handy features of this utility include: write protect detector, and allows one to change screen colours.

DANCE An animated Indian Rain Dance, complete with humour.

LOG CABIN Watch this animated demo build a log cabin before your eyes.

Amiga Users -

TPUG always has a complete update of current FISH and AMICUS Disks in the Library

CP/M New Releases

librarian - Ray Whidden

TPUG Disk (Z)ABK - World of Commodore VI Show disk

EXPRESS editor V1.0, many features, complete with documentation

FORMAT New format allowing DU specified on command line i.e. **FORMAT B:(return)**

MACREAD Read Macintosh picture files

66MUSTANG.PIC Ford classic

BILL.CAT.PIC Bloom county critter

QL26 Quick Look ASCII/hex/unsq/uncr, more

SD118 Super Directory .LBR/.ARC/.ARK/, more

SNOOPY89.CAL 1989 Snoopy calendar

TPUG Disks (Z)ABM, ABN, ABM - January thru March 1989

WADE & Z8E Debuggers

These three disks present a pair of debugging tools for program development in the CP/M environment. To complement the DRI debuggers, DDT for CP/M 2.2 and SID for CP/M 3.0, the WADE debugger comes complete with source code and submit files. Z8E has been around for a few years but is included to complete our CP/M library.

VCR Hints:

You can save anything on your VCR that appears on the computer monitor. Just connect a cable from the OUTPUT of the computer monitor to the INPUT of the VCR, and put the VCR on 'record'. I have successfully used this for Christmas music, graphics, etc. The 'transferred' music, graphics, etc are wonderful for Christmas gatherings. Next year, forget about using the computer. Just put the pre-recorded cassette in the VCR and push the 'play' button.

Reprinted from CCCC Newsletter
Citrus Commodore Computer Club
PO Box 503, Beverley Hills, FL,
32665

(Y)SAD - World of Commodore 1988

CAT.128 Good cataloguing program, contains TPUG C128 catalogue
CHESSE 128 Great public domain version of this game
PRO128.TERM Highly featured terminal program
DISKMAGIC } Several utilities bundled together
SIDPLAYER 128 Music player. This disk also contains five songs this program will play.

C-128 Disk (Y)ABD

MACINFO- This is the documentation for MACVIEW128 and MACTOB8.0
MENU: RUN FIRST - This is the loader for the files mentioned above
MACVIEW128 - allows you to view MACINTOSH graphics on your 80 column screen
MACTOB8.0 - allows you to convert MACINTOSH graphics files to CBM

Basic 8.0 files. (You must have Basic 8 installed in order to view these.)
MMOUSE.MAC - is a MACINTOSH graphics file to demonstrate the above.
FLICKERMACH V3.0 - is also a program to view MACINTOSH files.
COLOR TEST 128 - puts the colour spectrum of the C128 on screen for you to make adjustments.
MACREAD 128 V1.0 - lets you read MACINTOSH files
VIDEO POKER - is a 40 column game for your C128
128 MC LOADER - loads MC DEMO which is a sound and graphics Master Composer Demonstration
ALIGNCHK.V2 - checks the alignment of 1541,71,81 drives
128 SEQ. EDITOR - allows you to edit sequential files
80 READER 1.1 - allows you to read sequential files
SD CREATOR - allows you to create subdirectories on your disks
PROJECTOR128 - creates perspective graphics on your 80 column screen.

OFF BASE 128 1.5 - is a shareware database program you may wish to use
CONVERSN.128 - is another math calculator for Imperial to Metric, etc.

C-128 Disk (Y)ABE

MAKE BASIC8 DEMO - DO NOT RUN this until you have copied it to a blank disk. It makes the demo program autobooting
BOOT RTL - Run this program to get the BASIC 8 run-time demonstration program on your 80 column screen. It is ICON driven so you will need a mouse or joystick to use it. Some of the demonstrations will also require expanded video memory on C128 or as already available on 128D.
IC.CDESK 128 - is another ICON type Workbench Program NOTE: You must have Basic 8 (commercial program) installed in order for this to work. You may be able to diddle with the RTL demo to get this loaded for viewing.

MS/DOS New Releases**(M) AAN**

CTUTOR Tutorial aid to learning C language programming, complete with extensive documentation.
BROWSE Permits scrolling forward and backward throughout a file without using a word processing program. Great tool for reading .DOC files on your screen.

(M)AAO

DANCAD is a program which will allow you to create 2D & 3D drawings. DANCAD requires CGA & 640K Instructions are included in the .ARC files

(M)AAP

DROEGE is a CAD pkg which is used in the design of printed circuit boards. Instructions are included - ARC files.

(M)AAQ (M)AAR

WAMPUM is a menu-driven implementation of the dBASE III

programming language. It will maintain dBASE III compatibility with up to 128 fields in its main data file. It can also produce reports & labels which will be compatible with dBASE III. requires HARD drive. A Two-Disk set

(M)AAS

All of the programs on this disk have operating instructions included.
NARC : Menu-driven utility to Extract files which have been ARC'd.
EDMAC : Editor for .MAC files
ALLMAC : "
FMAC2COM : Converts .MAC files to .COM files
THE-GRIN : Utility to Print .MAC files
CHOP2 : Chops Text files into smaller portions, useful when you want to edit a file which is too large for the word processor you are using.
PC-TOUCH : A Typing Tutor.
BROWSE : A Utility to read Text Files. This is better than the TYPE command since it will allow you to scroll through the file.

WHATIS : A handy utility written in Turbo-Pascal, that allows you to conveniently keep notes about files on your system.

(M)AAT

EZS - a Spreadsheet complete with documentation and sample templates

(M)AAU

GALAXY - a Wordprocessor complete with documentation

(M)AAV

MM - an indexed Database dedicated towards Recipes for cooking. Full documentation included.

(M)AAW

PC-FLOW, FLODRAW - 2 different programs for generating various charts, such as HIPO, FLOW, etc. Documentation included.

(A)TAS November 1988

November Amiga Disk of the Month: 1742 sectors used, 16 sectors free - 99% full.

GYPSY: You might be able to tell your fortune with this shareware tarot card reading program written in AmigaBASIC. Copy Gypsy, Gypsy.info and the Cards Directory to a disk containing AmigaBASIC. Read the file Cards/readme for further details.

BLITZFT: Increases the speed of text output by up to 6 times. Read the file blitzft/readme for more information.

CLOCK297: Version 2.97 of this handy clock, mouse, screen, and window program. Clock displays total memory left (chip and fast) and the time in 12 hour format, in a small window that pops to the front every 2 minutes. You can set the screen and/or pointer to blank after a specified time of no activity (saves your monitor); use the mouse to quickly send windows to the front or back; automatically activate a window just by placing the pointer in it, or set it so that you also have to press a key; easily cycle all screens from front to back. Read clock297/clkdj297.doc for all the details.

A68K: This is a nice machine language mini-assembler program.

DEFSYSDK: A new variation of J.K. Levines DefDisk program that works with the WorkBench. It reassigns SYS, C, LIBS, FONTS, DEVS, L, and S to another disk if they are already assigned. Thus you can easily redefine your systems disk from the disk you booted with to another one.

GALLERY1: A nice picture collage from Beyond Graphics, who produce Amiga graphics for television. To view, double click the icon, or from the CLI, change into the gallery1 directory and type "ViewILBM gallery". Click once at the top left of the picture to end.

(A)TAT December 1988

December Amiga Disk of the Month: 1660 sectors used, 98 sectors free - 94% full.

DIAGTEST: This handy program will check all the vital hardware components of your computer. It has to

either be put on a backup copy of your Workbench disk, or copied to RAM: and run from there. See diag-test/readme.txt for full details.

BOULDERTO: A fun little game in the spirit of "Boulder Dash". Has screens of increasing difficulty. Requires joystick.

MUSIC: I've included a little music on this month's disk. There are two different pieces; MIX and Rainbow.

(A)TAU JANUARY 1989

January Amiga Disk of the Month: 1737 sectors used, 21 sectors free - 98% full.

DISKSALVAGE: Version 1.32. Disk Salvage will scan a bad disk volume for anything that can be recovered and will restore these items to any Amiga-Dos volume. Complete documentation can be found in the file disksalvage/readme. * Must be run from the CLI.

FASTFILE: Includes a program called AutoDiskChange that lets you run FFS (Fast File System) on floppies. See fastfile/readme for details. * Must be run from the CLI.

WEATHER: Weathergraph will store up to ten years of weather data and display it graphically for you. Data may be entered quite easily with the use of mouse-controlled "gadgets". * Must be run from the CLI.

HOUSE INVENTORY: Household Inventory Manager is a database for recording all your valuable household property, so that you have a complete record for insurance purposes. It tracks serial #s, purchase costs, descriptions, etc., of up to 1,000 items. Make sure you copy it to its own disk before beginning data entry, and keep backups someplace else than in your own house! A "query" program is also supplied so you can make reports using your own criteria and format. Read the documentation files gen.doc, maint.doc, and query.doc in the houseinventory directory.

CLKDJ 300: This is the most recent update of a great assembly language clock, mouse, screen, and window program. * Must be run from the CLI. Clock displays total memory left (chip and fast) and the time in 12 hour format, in a small window that pops to the

front every 2 minutes. You can set the screen and/or pointer to blank after a specified time of no activity (saves your monitor); use the mouse to quickly send windows to the front or back; automatically activate a window just by placing the pointer in it, or set it so that you also have to press a key; easily cycle all screens from front to back. Read clkdj300.- clkdj300.doc for all the details.

COMDEX.txt: This text file is a collection of notes from the COMDEX show in Las Vegas, originating from Commodore Amiga Press Releases and Product Technology Preview Documents.

(A)MAA Music Disk 1 December 1988

1591 sectors used, 167 sectors free, 90% full.

Our first Music Disk. It may not seem like four files could fill up an entire disk, but some are digitized music and they certainly use up those free blocks quickly! There are four selections for you to pick from:

- 1) **Thriller.**
- 2) **Owner of a lonely heart.**
- 3) **Maniac.**
- 4) **Tubular Bells.**

Also included is a player program, so all you need to do to play the songs is to double click on their icon.

(A)GAB Games Disk 2 December 1988

This disk is a collection of some popular Amiga games. 1739 sectors used, 19 sectors free, 98% full.

YACHTC3: The game of "Yachtzee", for 1 to 4 players. Roll the five die up to 3 times per turn, trying for each type of result on the scoreboard ("Yachtzee" is just 5 of a kind). Go for maximum points, or with 2 or more players fill the whole scoreboard first AND get maximum points to win.

EGYPTIAN RUN: "It seems the pyramids have come alive and are out to take over the world! You are the world's only hope! Can you get past the pyramid missiles with bumps to contend with and get in range to fire

Amiga New Releases

your guided missile at the control pyramid? But even then your missile is damaged and hard to control." In this game, "you" are a jeep running across the sands, avoiding obstacles. The farther you get, the faster you go, thus the harder it gets. It sure isn't as easy as it looks! Joystick in port 2.

ESCAPE FROM JOVI (EFJ): "Escape from an underworld cave system on Jupiter (sorry, yes, even though it is a gas giant), transporting a valuable bottle of beer, with limited fuel available". Successive levels of caves get harder and harder. This German import uses real inertia and gravity effects, two-way hi-res scrolling, and digital sound. Watch out for inertia! You can end up going a lot faster than you intend!

OTHELLO : Standard game of Othello, instructions included. Briefly, it is a game of skill where each move can have effects that last throughout the entire game. Two players (human, or computer) take turns placing pieces on the board, attempting to "trap" one or more rows, columns, or diagonals, of the opponent's pieces between theirs. This entitles the player to flip those pieces over, changing them to their colour. Each turn must flip at least one of the opponent's pieces. Whoever has the most pieces when the board is full, or when neither player can move, is the winner. The computer can help by showing all possible moves, or the best possible 8move. By selecting two "non-human" players and clicking a choice from the "Guru vs. Guru" menu, the computer can play against itself step-by-step or free running, at various levels of difficulty. Great for learning how to play the game!

CHESS : A non-graphics version, but plays a pretty good game.

MASTERMIND : The classic strategic "guessing" game. The computer chooses a set of coloured marbles which you try to match in 10 turns or less. The only clues you get are a "white pin" for each correctly coloured marble you choose, and a "black pin" for each correctly coloured marble in the correct position. The more you play the better you'll become!

(A)SAA World of Commodore VI Show Disk December 1988

1988 SHOW DISK. 1754 sectors used, 4 sectors free - 99% full.

TYPEWRITER: This program lets you use your printer as a typewriter. Handy for quickly making labels, envelopes, or whatever you might need it for.

CALENDAR: I find that this program is a useful addition to my Workbench disk. Use your mouse to change the year or month by clicking on the "<" or ">".

SCULPT 3D DEMOS: Two Sculpt 3D demos, "BTHROWS" & "RAISIN", that show off some of the neat things that your AMIGA can do.

EASLY PICS: Five nicely drawn drawings.

L'I'L PAINT: Little paint program. Great for budding artists who want to get their feet wet with a drawing program before going out and buying one of those big dollar programs.

AMIGADEX: A rolldex type program which should be placed on a non-write protected workbench disk, as this program creates it's own data file.

UNKNOWN GIRL: A small music piece that shows off some of the AMIGA's sound abilities.

(A)UAA Utilities Disk 1 December 1988

This is the first in a series of specialty Amiga Disks. 1713 sectors used, 45 sectors free, 97% full. Coming soon our first Telecommunications Disk.

DIRMASTER: This is the newest full-featured version of this popular Disk Directory database program.

DIRUTIL : This is a great CLImate clone program that I use all the time. If you use it, you can feasibly delete 90% of the commands from your C: and SYS: directories, thus saving valuable disk space. No need to remember all those commands, just select from the menu with the mouse.

HELP! : A nice program to keep on your systems disk. Gives you quick and easy reference to ASCII codes, AmigaDOS (CLI) commands, Ed commands, AmigaBASIC commands; reads text files.

VIRUSX : Most recent update of this much needed program.

Utilities: Four small utilities.

UNDELETE: Restore deleted files.

WHEREIS: Checks your devices for specific files.

CAL: Unix CAL Command clone.

DCLOCK: Title bar Clock/memory gauge.

ONE : This is a text file giving you hints and tips on making one drive life a little easier.

CLI INFO : CLI information, in text files (Aliases, AmigaTricks.TXT, CLI Commands, Ed Commands) plus three programs (Help, defdisk, and DOSHelper). Useful reference material and tips.

HELP (in "CLI Information/help"): Place the file "Help" in your C: Directory, and "Manual" in your S: Directory. Then typing "help [command name]" will read help for that command (if it's in the "Manual" file). You can even add your own entries to the Manual. * Must be run from the CLI.

DEFDISK: Useful for people who work in the CLI; lets you change Workbench disks by reassigning SYS: C: L: DEVS: LIBS: and FONTS: directories to a new disk. * Must be run from the CLI.

DOSHHELPER: A mouse-driven program that gives help screens on System, Batch, File, and Misc. CLI commands. Runs from the Workbench, hold right mouse button to display selections.

VIRUS_ALERT: This program uses a "backward" approach to software protection. It writes information to your boot block, which is checked whenever you load the disk. If the information goes missing, then it has probably been replaced by a Virus.

ADDICON : Handy little program that lets you add icons to programs which don't already have them.

DISKX : This is a sector based disk editor.

