



the MONITOR

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The Monitor is published monthly by the **Commodore User's Group of Saskatchewan (CUGS)**. Meetings are held on the first Wednesday of every month in Miller High School's cafeteria annex, unless otherwise noted. The next meeting will be held on **June 1, 1993** from **7:30 to 9:30 P.M.**

CUGS is a nonprofit organization comprised of 64 and 128 users interested in sharing ideas, programs, knowledge, problems, and solutions with each other. Membership dues (\$15) are prorated, based on a January to December year.

Anyone interested in computing is welcome to attend any meeting. Members are encouraged to submit **public domain** and **shareware** software for inclusion in the **CUGS Disk Library**. These programs are made available to members at \$3.00 each (discounted prices when buying bulk). Since some programs on the disks are from magazines, individual members are responsible for deleting any program that they are not entitled to by law (you must be the owner of the magazine in which the original program was printed). To the best of our knowledge, all such programs are identified in their listings.

Other benefits of club membership include access to our disk copying service, to make backups of copy-protected software, any members who own a modem and wish to call our BBS will receive increased access. The board operates 300-2400 baud, 24 hours a day.

Editorial

Time sure flies when you're having fun. In a matter of a few months, summer will be upon us once again — school ends, families go on vacation, and CUGS will be taking its usual two month holiday for July and August. In light of this matter, the last presentation before summer break will be on bulletin boards. It is our hope that by getting a few more members familiar with their modems, we can continue to stay in touch over the holidays. It is interesting to note that while nearly all of our members own or have access to a modem, surprisingly few call the BBS on a regular basis. Looking through the caller log, I see what most sysops would call their "regulars" — users who call at least once a day, if not more, to check out the new messages and play another round of games or so. It's these people that help keep the board going, but it's always great to have a new face in our midst. New users are an essential part of any bulletin board, so we invite all of you to attend the June meeting to become better acquainted with CUGS BBS.

This meeting, however, we shall see Keith Kasha presenting on disk drives, a demonstration which promises to be very educational. I'm not sure exactly what he has in store, but it's got something to do with the basics — tracks, sectors, files — something which I've always been wanting to learn more about.

Some of you may have noticed Byron Purse's name missing from the Vice President and Assistant Editor positions on the front page of the newsletter. Unfortunately, Byron has had too many other commitments to fulfill and has stepped down from the CUGS executive. On behalf of everyone I would like to thank him for his participation and involvement in the club.



Dual Top v2.5 for GEOS 64 v2.0 in 40 cols/GEOS 128 v2.0 in 80 cols.

Stan Mustatia

Dual Top was designed to work like Desktop as an area where certain functions could be performed on your disks and files. The big differences between the two are:

- 1) Dual Top does not use the icon format of displaying files. Instead, all files are listed by name.
- 2) Desktop only shows the files on a disk eight at a time. A second and third drive are only represented by a drive icon. Dual Top shows the files of two drives at once. A third drive can be accessed by the swap feature.
- 3) The big difference is the size of the two programs. Dual Top uses only 18K while Desktop uses 32K. This frees up more room for data storage.

Dual Top, to my knowledge, does not work on earlier versions of GEOS.

Dual Top still has the pull-down menus much like Desktop. What also is present are ten buttons going down the center of the page. The top three buttons are for picking one of three drives as the source drive. The next seven perform the following functions:

ALL: select all files from the *SOURCE* window.

CLEAR: deselect all files.

INFO: gives information on all selected files from the source window.

COPY: copy from source to destination. Works on any combination of drives; A:>B: A:>C: B:>C: or the reverse.

PRINT: send a selected file to the printer. This must be performed from drive A: or B:

RENAME: This allows you to rename all selected files.

DELETE: Delete all selected files.

There are two windows to work from, the source and the destination windows. All functions are performed from the source window. To make a window the source win-

dow, just click once on an empty area of that window.

There are two fuel gauges on each window. Each is used to cycle through files not visible in the window frame. At the bottom of each window, the number of kilobytes used and available are displayed. There also is a graphic display on the outside in the form of a bar to display room left on a disk. I think this feature is really just ornamental since it is clearly displayed at the bottom of the window.

Pull-down menus are as follows:

GEOS: Dual Top Info

Select Printer

Select Input

Select Preferences

Desktop (back to Desktop)

DISK:

Close

Rename

Erase

Format

CONFIGURE: swap A: & B:

swap A: & C:

swap B: & C:

OPTIONS:

reset

BASIC

AUTO DIR: drive A:

drive B:

drive C:

AUTO SORT: auto on(off)

do source

These functions differ only slightly from Desktop.

To select a file to load, simply double click on the file name. If you want to perform a function on a number of files, press the



mouse button once on each name. eg: Suppose you want to copy four files to the destination window. Position your arrow over each name and click once on each in turn. Next, position the arrow over the copy button and click. The selected files are now copied to the destination disk, and very quickly I might add. This is one feature I particularly like on Dual Top. No more flipping pages in Desktop and holding down the C= key.

When selecting a file on 128 Dual Top, Dual Top does not ask if you wish to switch to 40 or 80 columns. Dual Top checks to see what mode the selected file runs under and automatically switches for you. If the file is run in 40 columns, when you are finished and leave the program, Dual Top switches back to 80 columns and returns to the Dual Top screen.

There are some keyboard shortcuts included using the function keys. By pressing the C= key and the corresponding key for each drive, that disk will be listed into the source window. When performing multiple copying of files, holding down the C= key will abort the transfer.

At present Dual Top will support three drives. Work is being done to create a version 3.0 that will support four drives. As of yet I have not seen or heard of one such version being available. The current version 2.5 is available for both the 64 and the 128 in the CUGS library on disk **GEOS 20**. I use this program as a replacement for Desktop almost all the time. Rarely does an event occur where I am forced to switch back, but the function is quickly available from the pull down menus. If you decide to utilize this program, full documentation is included on the disk.

On the Degeneration of Adventure Games

Tristan Miller

Is it just me, or is the quality of an adventure game inversely proportional to the size of its programming team?

I say this because I recently acquired an MS-DOS CD-ROM version of the game Ultima VII. Though admittedly I was, at first, more than impressed at the great detail that had been put into the game, plus the dazzling graphics and marvellous sound effects, after playing the game for some time, I began to notice certain things that were... well, missing. Many of you attended our meetings on role-playing games and became familiar with the Ultima series of adventures. From my very first experience with Ultima, I was overwhelmed at the unique concept of tile graphics, the richness and depth of the games, and the original heart-stirring musical scores, features which I have known and admired for years. Ultima I, a captivating saga of a brave warrior (you) out to save the world from the evil clutches of the sorcerer Mondain, was Richard Garriot's first game of the series. He programmed it all himself, entirely in BASIC. Ultima II soon followed, boasting the speed of machine language plus more colour and action. For the next of his series, Garriot even went to the trouble of programming in several austere songs that played as the user paced his way around the vast continent of Sosaria, something that had rarely, if ever, been done before. This was a feature that has continued to survive throughout the Ultima series. Ultima IV, his next major work, featured one of the most unique concepts in adven

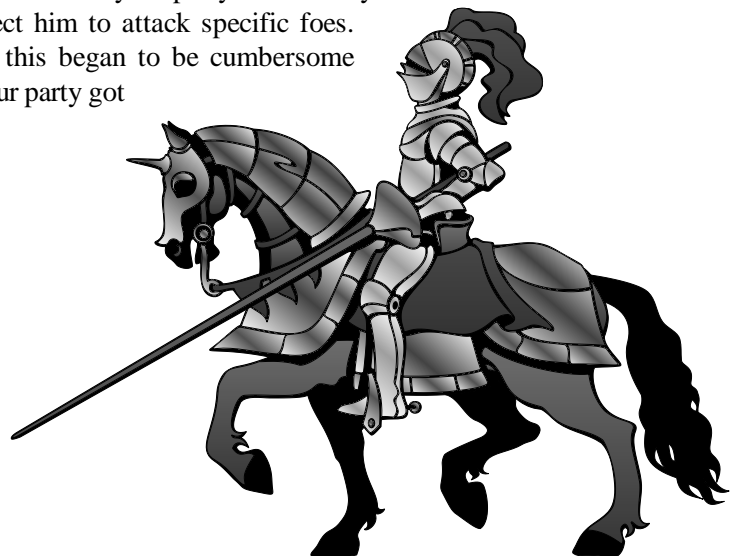


tures, the object of the game being not the typical "hack and slash" of most previous games of this sort, but to attain a level of spiritual enlightenment known as Avatarhood. Ultima V, I think, marks the pinnacle of Garriot's career as a programmer and writer, having the most depth and user involvement of any game in his series.

By this time, however, Richard Garriot had amassed so much wealth that he felt he was able to much improve his games by hiring other people to do the work for him. His software company, Origin, grew to the point where he had dozens of programmers working on his next project, Ultima VI. Though this game had by far the best graphics and user interface yet, you could tell that the overall quality of the game, compared to previous Ultimas, was on the decline. Perhaps, I thought, it is because that since the graphics are so detailed, little is left to the imagination. I actually think I liked it better when I didn't see the person's face to whom I was speaking, or the finely detailed weaponry that adorned my characters. It was inevitable, though, that this sort of thing would come about, and I shrugged it off as nothing more than a technological advance. When I finally completed the game, though, I was rather displeased with the it as a whole. For some reason I did not feel the great sense of accomplishment I had experienced after completing previous Ultimas — after all, this game took the least amount of time than any of the others (about three months in all). I was able to repeat the same feat in fifteen minutes the next day. The whole solution had been right there under my nose, and all I'd had to do was talk to several hundred people in the game to discover what and where it was. Not so with the other games; oh, no, if you want to win one of *those*, no matter how many times you've played the game before, you're going to have to work for it, slaying monsters and acquiring spells, doing great feats of heroism, rescuing princesses from dragons — the whole lot. In Ultima VI, you *can* do all those

things, but you don't necessarily *have* to, if you know what you're doing, that is.

Now, with the advent of Ultima VII, there are several sure signs that Ultima has decayed to the level of what many games are today — it exists simply to make money. Gone are the chilling subterranean tunes and haunting castle fanfares; gone is the strategy involved in fighting the monsters; gone is the keyboard interface (!!!); and most importantly, gone (and very sadly missed) are the tile graphics Ultima fans have always known. I've thoroughly played the game over these past few days, and I'm getting sick of the repetitive and dull tunes that the "mighty SoundBlaster" churns out. A new windowing environment has been created, and *everything* is controlled by mouse; you can't even carry on an independent conversation any more! When you talk to someone, the computer simply gives you a list of things you can respond with, which you must select with the mouse. No longer do we have the strategy involved in picking out clue words of what a character tells you; when you talk to another person, you are basically going to have to sit there and read everything he or she has to say, and I do mean everything. Few people have secrets. Even worse is the way in which fighting is handled. Before, you would guide each adventurer in your party individually and direct him to attack specific foes. Though this began to be cumbersome when your party got large





(say, around seven or eight adventurers), it was a facet of the game that many fans (including myself) enjoyed, because there was a lot of strategy involved in an effective attack. In *Ultima VI*, some of this burden was alleviated by allowing you to tell the computer to control specific players of your choice, a feature I found useful in some points. However, in *Ultima VII*, all your players' combat moves are controlled entirely by the computer, even your own (though you are supposed to be able to control your main character's actions if you want, the feature is too unreliable to be used effectively). This means all you get to do is sit back and watch your players annihilate the monsters, without involving yourself in the game at all, except to tell your people when it's time to stop.

The way it was in previous *Ultimas* when you went exploring was that you went wherever you wanted whenever you wanted, and you could have a heck of a lot of fun scouting the countryside while at the same time picking up important clues to solving the game. A bit in *Ultima VI* and more so in *Ultima VII* they seem to want you to follow a specific course of action when playing the game — they practically tell you "You must go to the city of Britain, then you must go to the city of Yew, then you must...". In fact, if you even dare so much as to tread off your predestined path, an ominous voice booms "You are not going the right way!" or "Do you *really* know where you're going?". I said to hell with this voice and I went off to do some exploring on my own, being much accustomed to roaming from my previous experiences. Apparently there is much in the game that you are not *supposed* to know about until you are *told* to go and find it. I cannot believe the amount of important and magical artifacts I am finding so early in the game. Why, already my main character is outfitted top to bottom in a full suit of gleaming magical armour, wielding a powerful magical sword and a magic wand, with dozens of spells, potions, and other magics at his disposal. Such items would have taken me

months to find in any other game! Though some people would consider this a positive boon, it only contributes to my boredom with the game — what fun are battles when you are *guaranteed* an easy victory? It's a no-win situation — either I restrict myself to the confines of the game's clearly marked path, or I amass so much wealth and items that nothing can stand in the way of my boredom.

Considerably *less* effort has been put into the non-software aspects of the game — basically what you get in the box that isn't a disk. From the very beginning, the box in which your particular *Ultima* came would house a vast array of material to pore over. *Ultima I*, for example, featured four coloured maps and a sack full of "ancient Britannian coins". The third of the series came with a cloth map and three different coloured books, all with breathtaking drawings. The fourth, fifth, and sixth came with their own cloth maps and pendants, as well as beautifully illustrated books and journals. When I opened my *Ultima VII* box I found myself disappointedly looking down at a remarkably familiar cloth map, a small card labelled "A Guide to the Isle of Fire" and a mundane, black and white, fortysomething-page booklet that was sparsely illustrated compared to previous works and had substantially less information and eye-catching formatting than any past tome. Obviously the game designers didn't feel it was important enough to supplement their game with anything more than what was absolutely needed.

Overall, there is a general sense of disunity about the game. Looking through the credits, I spy perhaps a hundred different



names. Playing the game, you can almost *feel* that it had been pieced together bit by bit. Whereas previous games had been written by just Garriot, or Garriot and a small team of programmers, this massive undertaking is so huge that it almost seems *too* big. One part of the game will look totally different from another part, and though I've always maintained that variation is good, it's got to the point where you can probably pick out individual sections of programming written by different authors. There's just not the smoothness and constancy that once existed.

The end of an era is at hand. Wherever I look, adventure games are becoming more and more sophisticated, but they are relying so much less on player involvement that the games could practically run themselves if you weren't there to turn the computer on. It is my theory that massive programming teams are what is responsible for the decline in the general quality of games, but again there's a no-win situation. One programmer cannot write a game with enough graphics, sound, and story to meet today's standards for adventures. No one has the expertise in every field, and even if they did, it would be a monumental task. On the other hand, if a large team of programmers is used, some taking care of the graphics, others the story, and others the interface, the final product will lack a feeling of harmony. It's like looking at a jigsaw puzzle — though the picture itself may be of exceptional quality, its beauty is marred by the irregular pattern of criss-crossing lines that clearly mark the individual pieces. A new sort of game has emerged — one with remarkably detailed graphics and spectacular special effects. But if the solidarity of past works is no longer present, I'm not entirely sure I'd like to remain a part of Ultima.

Perfect Print for GEOS by CMD Stan Mustatia

GEOS is a great productivity package. It has greatly simplified the use of Commodore 64 and 128 computers. The basic GEOS system includes geoWrite, geoPaint, and a large number of support programs, from database managers to desktop publishing.

I have been using GEOS off and on for at least eight years. At first I was amazed by all the icons, menus, desktop, and ease of movement through the pages. One thing that always daunted me was the lack of a good quality printout from geoWrite. Letters came out ragged and `s p l o t c h y`. Readability can be affected by this.

A way to mask this deficiency was to use a multi-pass driver to increase density.

This approach is much too slow and the printout becomes darker and somewhat fuzzy. Better than before, but not quite good enough. Perfect Print's approach is to interpolate (change) the print resolution by inserting extra dots in the letters to provide suitable printout. In essence, it examines the data from the computer and changes it, instead of just delivering it to the printer. Perfect Print will even use interpolation routines on graphics imported into geoWrite docs.

The manual is very thorough. Sections for quick installation and more in-depth study, should you require it, are included. Everything from differences in printers and

“...CMD does a much better job of explaining what printer drivers do than GEOS ever did...”



printer interfaces to fonts are very well covered. Almost a dozen font utilities are supplied, as well as sixty fonts designed to even better enhance your printout. Any other GEOS fonts are also compatible. For geoPaint and geoPublish, a large number of 9 and 10 pin drivers offering low, medium, and high resolution are included. CMD claims that their 24 pin HQ drivers, as they are named, are the only 24 pin drivers in existence for GEOS that actually use all 24 pins instead of 9. I own a 9 pin Star NX1000, so I cannot deny or verify this claim. The only problem CMD encountered was with geoCalc and geoChart. These two programs tend to destroy areas of memory normally set aside for printer drivers on 24 pin printers. Using a 9 pin driver here poses no problems and can be substituted.

All in all, CMD does a much better job of explaining what printer drivers do and how to choose them than GEOS ever did. They have even included a small section on how to construct a parallel cable of your own.

Included in the package from CMD are six double sided disks packed with all kinds of utilities, fonts and printer drivers. More font disks can also be purchased to supplement what comes on the original disks. Software Support International, a mail order company from the USA, also distributes this package. If you, like me, are looking for something better in your GEOS printouts, this is definitely for you.

✱ FOR SALE ✱
Turbo Master CPU - \$55
Phone 584-1736

The Best of COMPUTE!'s Gazette

Tristan Miller

I've always been a big fan of COMPUTE!'s Gazette. When I first subscribed to it in 1984, I was overwhelmed with the quality of the programs and articles. Frustrated at the slow speed at which I was labouriously typing in their programs, I started getting the disks to go along with the magazines, and by 1988, I had amassed an entire shelf full of issues and a whole box full of disks. The magazines proved to be invaluable for programming; I would constantly look up Feedback and Hints & Tips articles for use in my own programs, and from the disks I made regular use of dozens of their utilities, as well as a good number of their games. It was not until several years ago that I assembled a disk of all the programs I used most frequently, hoping that it would save me from alot of rummaging through my disk box trying to find the program I wanted. It just occurred to me recently, though, that this disk might make a good addition to our club's library.

Now in the library is this very same disk: two sides containing nearly a hundred program files, mostly for use with the Commodore 64. In this article I will review what I found to be my ten most-used applications. No doubt any purchaser of this disk will find these programs to be indispensable as well. Without further ado, here is the list:

CRUNCH August 1985
Anyone who has found theirself in limited supply of disk space (especially ssysops) has probably spent hours taking whatever steps were necessary to cut down on disk



space used by their programs. Some people maintain a disk library compressed with ARC or some other file compression program, but the disadvantage to this is that it takes forever to reinflate your programs once they've been archived, and having only one disk drive makes this awkward. Others, when programming in BASIC, make every attempt possible to conserve memory by making their programs as compact as possible, using confusing shortcuts and overstacking commands. This, while effective, makes the program difficult to edit. However, there is one more way to save your disk and memory space — CRUNCH. CRUNCH is a machine language program which takes standard BASIC files and actually *rewrites* them for you in as compact a manner as possible! It resides in memory until you invoke it with SYS49152, after normally loading the file you want CRUNCHED. You are then presented with three options for line length: original, 80, or 255. After selecting one of these options, CRUNCH goes to work, stacking commands, eliminating REM statements, and taking as many shortcuts as possible to make your file shorter. Choosing original or 80 for your line length will compress your program while still making it relatively easy to read, but if you're done writing your program, I'd recommend 255 for maximum compression. Believe it or not, CRUNCH can fit 255 characters on one line (this makes it impossible to edit, but the space saved is remarkable!). The CRUNCHED program is retained in memory until you save it. Though you may have cut your program size by as much as 500%, the CRUNCHED file is still fully executable and required no special loader or decompression. An invaluable tool for bulletin boards.

PRINT MAKER January 1986
 Every find yourself genuinely frustrated over Commodore's brilliant idea of "quote mode"? Sure, it's a great idea for changing the colour in the middle of a PRINT statement, or

perhaps moving the cursor around a bit, but it frankly bites the big one when it comes to designing graphic screens from BASIC. Gazette's Print Maker to the rescue! With this memory-resident program installed, all you need to is design your screen using the screen editor (that's right, folks, no need to memorize any special keys or commands; just use the graphics and colours on the keyboard) and when you're done, move the cursor to the top line (which should be left blank) and type SYS49152,x where x is a starting line number. Print Maker then analyzes what's on the screen (minus the top line, of course) and converts it into PRINT statements, appending it to whatever program is loaded in memory. Should save you a few hundred hours trying to design your graphic screens from BASIC.

TURBO FORMAT Movember 1986
 This incredible disk utility can actually format an entire disk in 9.5 seconds, or 17 seconds with the verify option turned on. In either case, you'll find yourself with several minutes to spare after you format a new box of disks.

ULTRAFONT 2+ September 1986
 Throughout the history of the Commodore 64, there have been countless font making programs. This program, I believe, is one of the most integratable as well as has one of the best editors. Load the program, design your font (using several time-saving options and commands), and then save it to disk or have Ultrafont create DATA statements so that you can use the font in your own programs by POKEing the numbers into memory. No game designer should be without this.

**DIRECTORY FILER** April 1986

A convenient utility that allows you to rearrange your disk directories to your taste. Directory filer can move files and insert dividers, all with a simple interface and two-column display. I found this program useful for moving certain files to the top of my disk directories so that I could conveniently load the files I used most often with LOAD"*",8.

NO-ZAP SAVE April 1985

It's probably happened to all of us at one time or another — you're up late at night working on your machine when all of the sudden, the power goes out, or the machine locks, or there is an unexpected power surge — and you end up losing all your data. The smart computer programmer/operator knows to periodically save data and keep backups, but one oftentimes becomes so involved in one's work that one forgets to save quite as often as one might have liked to have. A viable alternative to constantly having to take a break from your work to save it is to get the computer to do it for you. No-Zap Save can make periodic backups of your BASIC programs for you every x minutes. Another memory-resident program, after you load it you specify a file name and a time interval, and No-Zap will save your program under a new name (00programname, 01programname, etc.) at whatever interval you specified.

MENU SYSTEM October 1986

If you've purchased any CUGS disks, you're probably familiar with the menu that comes up whenever you do a LOAD"*",8:RUN. Now you, too, can make your own easy-to-use menus for any of your disks. Though not quite as glamorous or as flexible as the CUGS loader, the menus it creates are compact (the whole menu system will likely only take up 4 blocks) and easy enough to use.

TRIPLE 64 April 1985

When I first saw this program, I thought it

more an oddity than anything else — it is a sort of task swapper for the 64. When run, it creates three separate 16K areas for program space. You can type in a program in one area, then type SYS40004 and then either 1, 2, or 3 to access the different areas. The program is actually quite useful if you ever find the need to test different things out at the same time but only have one machine.

SCREEN 80 September 1984

80 columns on your Commodore 64! The quality of the text actually isn't that bad if you have a monitor, and all screen editing functions are preserved. Works with many text programs, but has alot more potential if you write your programs for an 80 column screen.

VIC EMULATOR September 1985

Alright, alright, so nobody uses a VIC-20 any more. Still, this is actually a quite remarkable program, considering it runs so much VIC software. Given how much memory the 64 has compared to the VIC, it can, of course, emulate memory expansion, up to 32K, I believe. I use it to play the Enchanted Journey, an excellent Ultima-like adventure for the VIC, which is also on the *Best of COMPUTE!'s Gazette* disk.

That's it for MY ten favourite programs. Don't forget, though, there are over 80 more programs packed onto that disk, including all the versions of MLX and the Automatic Proofreader, MetaBASIC, several games, compilers, graphics programs, educational programs, and programming aids. See you at the meetings..

Regina, Sask. Canada
 Courtesy Allan Finkas

BULLETIN BOARD LIST
 (Area Code 306)

April 27, 1994

System Name	Number	BPS	Protocol	SW	CPU	Nets	Flags
Adult Superboard	789-8682	14.4	3b,4b	PB	P	F	1\$
Arboria	584-8610	2400	None	CB	C		
Alpha Colony II	545-8342	14.4	3b,4b	Su	P	FW	Q
Atmospheric Environ.	780-6049	9600	3,M	WC	P		\$
Beach House	729-4185	2400	None	Vi	P	FV	Q
Crystal Visions	586-6790	2400	None	RA	P	F	
C.U.G.S.	586-6608	2400	None	CB	C		
Digital Underground	585-6077	9600	3	WC	P	FL	
Dispatch	565-6162	14.4	3b,4b	Su	P	FL	B
DLC-West <Hi Speed>	352-9390	16.8	H,3b,4b	--	P	F	\$
DLC-West	352-9378	2400	None	--	P	F	L\$
Double Check	525-0807	16.8	H,3b,4b	Mx	P	F	Q1
Eden	584-7062	2400	None	RA	P	L	
Excalibur	949-8605	14.4	3b,4b	Gh	W		
Extreme Outer Limits	545-0417	19.2	Z,3b,4b	WC	P	FZ	Q
FACT	924-8776	2400	None	WC	P	F	LQ\$
Fernando's Retreat	585-0298	14.4	3b,4b	Mx	P	F	B
Fourth Floor	352-0472	14.4	3b,4b	Sy	P	F	Q
Green Zone	789-7652	14.4	H,3b,4b	Mx	O	FI	Q2
Holistic	789-5070	14.4	3b,4b	Mx	O	F	Q
IEEE South Sask.	586-1939	9600	3	RA	P	F	B
Impossible Missions	569-9705	2400	None	Tr	P	FW	
Kothas	585-3819	14.4	3b,4b	RA	P	AL	
Mageholm	522-9816	14.4	3b,4b	RB	O		
Micro City <Hi Speed>	791-3388	14.4	3b,4b	Ma	P	JR	\$
Micro City	757-0088	2400	None	Ma	P	JR	\$
MEBBS II	775-1437	14.4	3b,4b	TA	A	F	Q
Missing Link I	775-1511	14.4	H,3,4b	PB	P		
Missing Link II	775-1512	14.4	H,3,4b	PB	P		
No Quarter	584-7428	14.4	3b,4b	TR	P	FLW	Q
Pool Hall I	586-8490	9600	H,4b	PB	P		1
Pool Hall II	586-0922	14.4	H,4b	PB	P		1
Q-COMM Data Services	584-2916	9600	3b,4b	LN	P		
Ronchy's Pleasure Dome	949-8486	16.8	H,3b,4b	*RA*	P	BFI	B1\$
Sage's Desk	545-2943	14.4	3b,4b	DL	A	F	Q
Shadowland	789-1899	14.4	3b,4b	RA	P	F	
Shareware Superboard	789-8690	14.4	3b,4b	PB	P	F	1
Short Circuit	751-0604	9600	3,4b	RA	P		
Skywatch	569-0581	14.4	3b,4b	TR	P	F	Q
Snake Pit	924-0773	14.4	3b,4b	Su	P	FRW	B
TeeWunKay	779-1237	14.4	H,3,4b	Mx	O	FI	Q
Tempest Town	751-0622	14.4	H,3,4b	Su	P	FW	1
Titan's Realm	949-8692	16.8	Z,3b,4b	Mx	P	F	Q
Tower of High Sorcery	545-0801	14.4	3b,4b	Vi	P	FW	
TTL Computer Concepts	522-3233	16.8	H,3b,4b	RA	P		B
Unibase	789-0709	9600	3,4b	--	U	U	\$

Total Systems: 41