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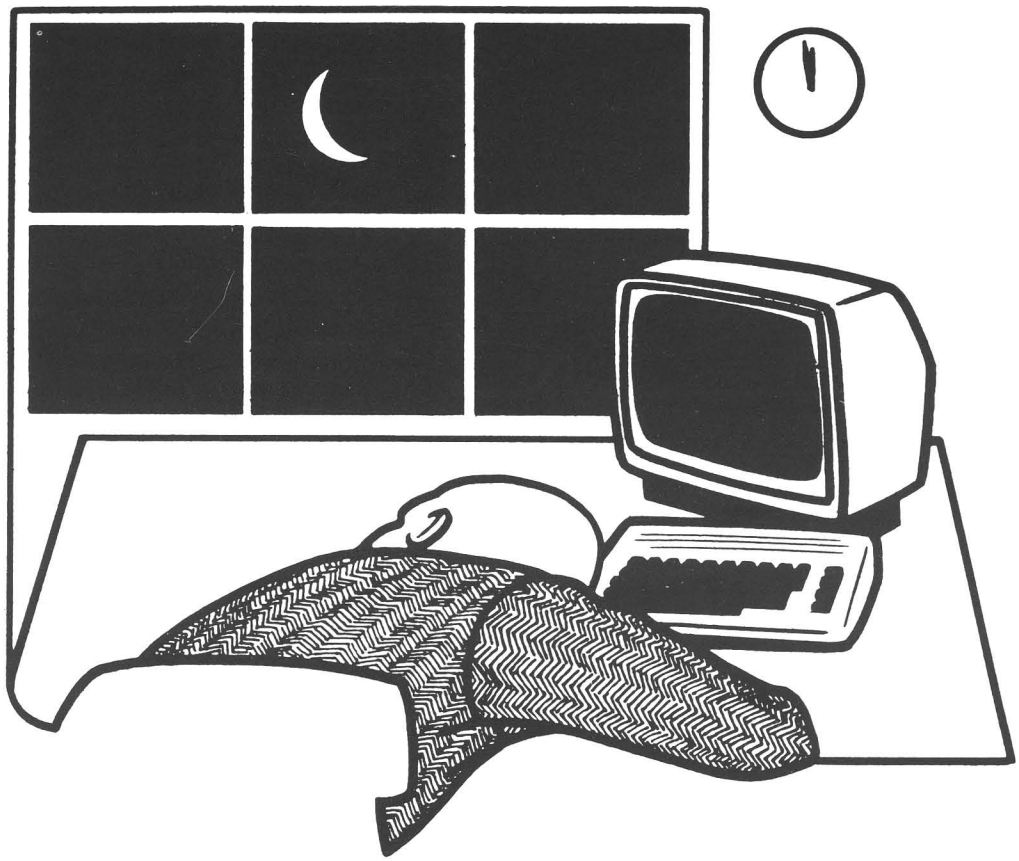
Midnite Software Gazette

The First Independent U.S. Magazine for users of Commodore brand computers.



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Robert Wolters
Editor-In-Chief: Jim Oldfield Jr.
Editor: Tim Sickbert
Assc. Editors: Art Lewis Kimball
Mike Stout
Robert Baker
Dr. Immers
Elizabeth Kasper

Address for all correspondence:
PO Box 1747
Champaign, IL 61820

Telephone: (217) 356-1885
BBS: (217) 356-8056
Punter 300/1200

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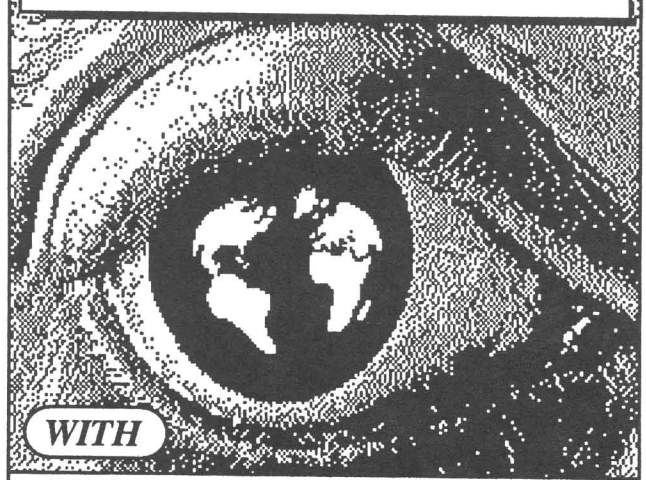

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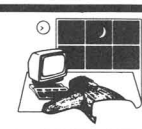

Sales of computer everything are obviously slow during the summer months. Warm weather, vacations, gardens, and quiet evenings in a porch swing put a damper on personal computer use. Along with slow hardware and software sales, publications also slow down. Thin issues rule supreme.

I don't know if anyone has noticed, but fourteen magazines are devoted to Commodore computers: **Compute!'s GAZETTE, Run, Ahoy, Transactor, TPUG, Commodore Microcomputing** and **Commodore Power/Play** (these two magazines are merging), **The Guide, The Midnite Software Gazette, Amazing Computing, Info, AmigaWorld, Twin Cities 128**, and **Input/Output** (from Canada). Whew! I knew I was getting behind on my reading, but this is ridiculous. No wonder companies sell indexes of articles and reviews. Why do I bring this up? Because the market is slowing down and magazine sales will most likely follow. Periodicals usually have between four and seven months before circulation follows the general market trend, so I predict that at least three of the above magazines will fold within the next year. Hopefully not us...

The stock market shuddered as IBM profits declined; it shows what kind of clout they really do have. To make matters worse, IBM suggested that third quarter profits will be down as well. CBM stock is trading at just under 6 dollars a share; I can remember 16 dollars a share in the not so distant past. I feel that a LARGF corporation will buy CBM within the year. That doesn't mean CBM will be no more; just different signatures on the paychecks. Apple seems to be moving along slowly, but steadily. You don't hear much from Tandy, although their new laptop Model 101 is a nifty re-make of the old Model 100. I, and most people involved in computer retailing, are tired of Mr. Tramiel.

For the CBM market, Fiscal Information might be signing an agreement with Xetec for mass production of FI's **Lt. Kernal** hard drive. Xetec is the maker of an excellent graphics printer interface. Suggested list prices are $899 for the ten meg and $1299 for the 20 meg hard drives. For special applications, such as HUGE databases, this is a much needed peripheral. All that is needed - and just MAY come - is for Precision Software to adapt a version of **Superbase** for the **Lt. Kernal.**

The LCD will probably never hit the market now; due to the nature of the business, I don't think it would be a success even if it were released. The anticipated **PC-10** and **PC-20** MS-DOS machines, rumored to be released to the U.S. market at the June CES, will not materialize either. The flood of Asian PC clones has made it impractical. The right time to place it on the market has passed and CBM cannot produce it cheaply enough to compete with all the other clones on the market.

I'm sorry to report that Mr. Kenny, Vice-President in charge of publications and telecommunications at Commodore, has left along with the latest wave of departures. I wish Mr. Kenny the best of luck in any new venture he undertakes. He was refreshingly different from most at corporate Commodore. Dianne Liebold, Editor of Commodore's magazines, is replacing him for the time being.

If you read issue number 33 you might remember that we gave several pages to commentary on the major on-line systems - **Compuserve** CBM SIGS, **Quantum Link**, and **Delphi**. Hopefully, (and I mean hopefully) we'll actually have portions of the Midnite on-line, plus some new material not previously published. It's an exciting idea that's long overdue.

Also, look to see a book from Midnite sometime this fall. Tentatively, it'll contain MANY reviews published in past issues, plus new ones. In addition to a compendium of reviews, we plan to include lists of resources that will be helpful to CBM owners of machines from the PET to the new 64C. Look for announcements, coming soon to a newsstand or bookstore near you.

The Starship MPC BBS Punter system has now become a PunterNet system. We are Node #35 for messages, subscription inquiries, and comments. If you haven't tried the BBS (217-356-8056, 300-1200 bips, 24 hour, Punter) yet, do so. It is a good board. There's at least 4 meg of public domain software on 32 bases. As you would expect, it's all the good stuff. Art Lewis Kimball, Associate Editor and Art Director of Midnite, is the main SYSOP and has worked untold hours keeping this board one of the finest in the country. Do try it.

Books

SUPERBASE The Book: [update, 34:2] $15.95 book by Dr. Bruce Hunt, from Precision Books/Progressive Peripherals & Software.

It is well known in the Commodore community that one of the most powerful database programs around is **Superbase.** When computing power increases so does complexity - more options and functions mean more commands and more things to remember. **Superbase** has plenty of power and can be adapted to almost any database need. Unfortunately, the manual supplied with the program, while well-written, limits itself to some fairly general applications and almost forces the user to explore certain areas on their own. **Superbase The Book** takes you beyond the manual and digs deeper into the practical uses of **Superbase.**

In 194 pages, Dr. Bruce Hunt covers subjects such as setting up a database system, using the built-in commands, extensive advice on programming using **Superbase** BASIC, and troubleshooting. Some of the biggest problems people encounter in any database system can be traced back to ill-conceived structuring of the data. Hunt's comments about setting up your system are eye-opening and intelligent. He gives detailed advice for initially formatting files and even suggests ways to correct existing problems. The section on automated processing describes the built-in **Superbase** commands such as SORT, FIND, OUTPUT and BATCH. Many generic examples show how almost anyone can run a fairly sophisticated database management system with very little effort. **Superbase** is a programmable database program but most people are afraid to program it. Usually one can get along without it, but programming gives **Superbase** almost limitless power. Hunt covers the topic quite well and may put budding programmers at ease with his easy-to-follow examples and general outlook. An advanced programming section is included for those more bold at heart.

The troubleshooting section is in two parts. The first section gives answers to popular problems, and advice on how to get out of certain error conditions. The second section is a list of all known bugs in all versions of **Superbase.** There are a surprising number listed (and a lot of versions) but fortunately most bugs rarely crop up. It is unique for a software publisher to air dirty laundry like this!

Throughout the book, Hunt drops little hints on how to overcome some of the limitations of **Superbase.** One little gem is how to make the 64 version PRINT command print to a disk file - a feature now included on the 128 version but missing for the 64. I don't know how long I've waited for that one! He also covers the OUTPUT command in detail explaining how to send printer codes, format reports yourself (without using REPORT), and print to the screen and printer more effectively.

If you have **Superbase,** buy this book now. There is a wealth of knowledge and advice here. You would have to use the program for a year or more before you might learn 50% of what is included. Hunt, a founding member of Precision Software, has been involved with the **Superbase** project since 1983; his experience shows. The book is well-written, easy to comprehend and entertaining as well as informative. Highly Recommended -Kevin Hisel

Compute!'s 128 PROGRAMMER'S GUIDE: $16.95 book from Compute! Publications. 444 pages.

This excellent wirebound book covers every aspect of the C128. It is written so that even a novice can understand it, yet it has enough information to be a good reference guide for experienced programmers.

The beginning of the book gives a brief introduction to BASIC and then goes into one of the best BASIC dictionaries I have seen. For every command it gives format, whether it is usable in immediate or program mode, tokens (in both decimal and hex), abbreviation, differences from BASIC 2.0, descriptions, and examples. There are things in this book that are mentioned nowhere in Commodore's excuse for

a system guide. Also, all the commands are together - you don't have to look somewhere else for numeric and string functions.

The next two sections discuss graphics and sound. All the graphics and music commands are listed and discussed again even more thoroughly than they were in the dictionary. Then you get the complicated stuff. Machine language sprites, sound, and 80 column graphics are covered with plenty of examples. Even if you don't want the machine language, there are enough BASIC programs to keep anyone happy.

Chapter 4 covers the peripherals. The 1571, autobooting, the fast disk mode, and the new disk commands are all covered well. An autoboot maker program is included. RS-232 and telecommunications are discussed, covering everything from BASIC and ML dumb terminal programs to up and downloading to register parameters. Brief sections on the monitor, printer, and joystick ports are also included, with paddle, joystick, and light pen reading routines, and instructions on building an 80 column monochrome cable.

The chapter on CP/M is disappointing. Even with my limited knowledge of CP/M I found it complicated. Unlike the rest of the book, which takes a tutorial approach, this section is better for those who have knowledge of CP/M and want to learn about this particular implementation. If you want to learn CP/M from the beginning, find something else.

The final chapters on ML and system architecture are well done. Like the CP/M, however, don't try to use the ML chapter to learn machine language; it is better for those who already know it from the C64 and want to move to the C128. A full description of the Kernal routines is included. The description of the system architecture is very complete, covering the Memory Management Unit and the different modes. Banking is also well explained. The book covers routines for accessing C128 features like the keypad and the FAST clock while in C64 mode.

Appendices cover character, screen, ASCII, keyboard, and ESCape codes, BASIC and DOS errors, 8502 and Z80 op-codes, musical note values, and CP/M BDOS service calls. Also given is a memory map that covers zero page and working storage addresses, and gives major ROM routine locations. C64 addresses are included if they exist. A complete index rounds out the manual.

The book is well written and easy to read. I feel it is worth its price just for the BASIC reference guide. Except for the CP/M coverage, I doubt that I will need another guide. For everybody from beginners to hackers, it is Highly Recommended. David Blezard

CAD: Computer Aided Design: $19.95 book for the C128 (and the C64 with Simon's BASIC). A Data Becker Book from Abacus Software. By Werner Heift. 310 pp, paperback.

Unless you want to write your own CAD program, in BASIC, forget it. This book contains a lot of listings and a few comments. The listings are independent little modules set up to be called by a short menu program. If you are interested in using your computer to aid you in CAD work, this book and a lot of paperwork will give you an idea of how a computer does it, but I don't believe it will actually help you use your computer for CAD. If you want to write your own CAD program, this book will give you a place to start. I have to wonder, though, about a programmer that assigns a constant to a variable within a loop (e.g. FOR FD=0 TO FF:... :FV=198:... :NEXT FD..., page 45). Half the listings are for the C128, the other half for the C64 with Simon's BASIC. It is an adequate source of algorithms and little more. Not Recommended. Tim

Commodore 128 PEEKS & POKES: $19.95 book for the C128. A Data Becker Book from Abacus Software. By Hans Joachim Liesert and Rudiger Linden. 247 pp., index, paperback.

I could find nothing in this book that I had not already found more fully explained someplace else - often in one of Abacus' other books on the C128. Six months ago, it would have been one of the best books available for C128 users. Today, you are better off with a **Programmer's Reference Guide**, and maybe **Internals**.

Further, the translation on this particular book is weaker than most, and there are a number of small errors. The third paragraph of page 18 states that, "Pointers have a specific format. They [pointers] are always two bytes long." Paragraph five state that, "A one byte pointer... " Not Recommended. Tim

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I want to make a few comments on the Abacus series of books for the C128. First, I am glad they are available, and I am glad that I have them. Well, most of them, anyway. I am particularly fond of Vol. 1, **128 Internals;** Vol. 3, **128 Tricks & Tips;** and Vol. 8, **CP/M User's Guide.** Thank you, Abacus. But I have found Vol. 5, **C128/C64 CAD** and Vol. 7, **C128 PEEKS & POKES** relatively useless.

It should also be noted that all of the books in the series have a more than generous amount of white space. There is hardly a solid page of text anywhere in any of the books. Much space is taken, also, by program listings, ROM listings, and the like. And, the type is large. So the amount of information in 100 pages of an Abacus book, while often very informative and useful, usually does not have nearly as much information you would find in the same number of pages of something like Commodore's **128 Programmer's Reference Guide.** Tim

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MACHINE LANGUAGE BOOK OF THE C64: $14.95 book by Loathar Englisch. From Abacus Software. 200 pp.

The author must have me in mind when he wrote this book because I was almost a total stranger to the world of machine language. When I began the book, I found each chapter an exciting adventure. The book starts with an introduction that explains why anyone would want to use machine language instead of BASIC. From there, it goes into a brief but adequate explanation of the workings of the 6510 processor. Next, the instructions and addressing modes of the 6510 are covered in detail. With the explanation of each instruction, a corresponding instruction in pseudo-BASIC is given so the two can be compared. The next section discusses the methods of entering machine language programs into your computer. This section includes a listing for a simple assembler, which is a must if you want to practice the material. There are also listings for a single step simulation and a disassembler. The last section discusses the uses of machine language.

In sum, I found the book very helpful for learning the basics of machine language programming. I do think an understanding of the BASIC programming language would be helpful in using this book because a lot of comparisons are made between the two programming languages. Chuck Frank

C64 PEEKS & POKES: $14.95 book from Abacus. 200 pp.

If you have ever wanted to know more about PEEKS and POKES, then this is a superb book. At the end of each chapter, there is a summary of the commands you learned in that chapter. This is a real help because you don't have to keep looking them up in the body of the chapter.

Part One gives an overview of the 6510 processor, operating system, interpreter, and zero page. Part Two 2 is full of tricks that are interesting, easy to follow, and easy to understand. You don't have to know machine language until part 3, and even then you don't have to know much.
All of the tricks and programs work when typed in correctly. This is an interesting book, and I have learned a whole lot. RECOMMENDED Kurt Kloba

PRINTER BOOK for THE C64: $19.95 book from Abacus. 330 pp.

Abacus does it once again with this printer reference book. They start by explaining how an interface works and takes its reader all the way up to controlling the 1520 plotter.

This book gives the fundamental understanding needed to take advantage of one's printer to the fullest. I really

can't think of one area Abacus left out when they wrote this book. Their demo programs are very useful and work well with the text.

The book starts out easy and moves into more complex subject matter with each chapter. If you want to know more about how printers operate, then get this one! Recommended. Mike Stout

GRAPHICS BOOK for the C64: $19.95 book from Abacus. 350 pp.

This is a very good book, but is written for users that have had a little bit of HiRes graphics experience. Even though I have little such experience, I learned plenty from it.

The way they explained things was kind of hard to understand, but I would still recommend it. Although difficult, I enjoyed the section on poking dots, lines and curves to the screen to make pictures. Recommended. Mike Saladino

ADVENTURE GAMEWRITER'S HANDBOOK: $14.95 book from Abacus. 200 pp.

This is a great aid to writing your own adventure games. The book includes complete listings for two adventure games, an editor, and an interpreter. For $14.95 you can order a disk with all of these programs on it.

The author breaks down the program section by section so you can understand the fundamentals of writing a good adventure game. It could be better written and go into more detail. A beginner would have a hard time understanding the examples that are listed. The examples are filled with typos, making some of it rather difficult.

Overall, this is a good book to add to your collection. I wouldn't recommend it to a beginner, but adventure game programmers with more experience might like it. Average. Dan Bluhn

ADVANCED MACHINE LANGUAGE for the C64: $14.95 book from Abacus. 210 pp.

Having purchased books from Abacus before, I had high hopes for the info I would find between the covers of this one. At first glance I thought the "Numbers and Arithmetic" section would be a waste. However, the floating point conversion routine will probably find its way into a number of my programs.

The second section, "Interrupts", was extremely informative but I am not sure if there will be any practical application in the type of code I normally write.

The last section, "Beyond BASIC", was designed to allow the user to alter the normal BASIC language. Since I have always had a strong dislike of BASIC this didn't sound real promising. However it is well written, and loaded with code for enhancements to BASIC. Many of these examples would have value for other users.

Overall, the book is as good as I had hoped and I would Highly Recommend it! Gary Knowski

MACHINE LANGUAGE FOR THE C64, C128, and OTHER CBM COMPUTERS: [update 21:21] 6502 machine language tutorial book for users of Commodore machines. By Jim Butterfield, from Brady Communications.

This update of Butterfield's 1984 hit now includes routines, memory maps, etc., for the C128. As always, an excellent place for the novice machine language programmer to begin. Highly Recommended. Tim

Educational

The PROFESSOR: [update 18:26] $29.95? basic system tutorial on flippy disk for the C64. By David Martin & Quinten M. Johnson. From Progressive Peripherals. Unprotected. No mention of warranty, backup, or support.

Hmmm... This looks vaguely familiar.... I know I have seen those balloons somewhere before... where did I put that disk? AHA! Now who wrote this new one? ...

Don't let the flashy new packaging mislead you, The Professor appeared about three years ago as The Commodore 64 Tutorial, Vols. 1 & 2, from Cyberia. Minor modifications have since been made to Vol. 1 to make the keyboard tutorial require more interaction. I had not seen Vol. 2 before. It is a nice introduction to the concepts of sound and graphics on the C64, giving exposure to terms such as gate, raster, register, and the like. It does it well and gently.

The Professor might help a novice user, or even a novice programmer, get a better feel for the machine. The explanations are clear, and the sound generator on the second side is particularly nice in demonstrating how the SID chip works. Users might find it interesting to learn a little about what is going on behind the scenes, and intermediate programmers might find the BASIC programs interesting to look at. Advanced programmers might as well forget it, except to recommend it to novices. The price, if correct, is ridiculous. It would be more reasonable at about $10 to $15. Average. Tim

Games

BARD'S TALE: $39.95 role playing game on disk for the C64. By Michael Cranford, from Electronic Arts. Keyboard controlled, DOS protected.

In my opinion, the best of the role playing games. Multiple split screens provide ample information as you play - something many of the D & D games lack.

You have a party of six characters that you choose from a menu of seven character types with ten classes of each. Battle provides multiple fighting sequences, dozens of magic spells, and you may get some help from the Bard - if you can keep him in ale.

The game features real-time action - including day and night sequences - and a 3-D window displaying the many buildings and streets of the Shara Brae, with statues, towers, and guardian gates as well as the monsters of old.

If you are into role playing games, this one will give you many, many hours of good play. I Highly Recommend **Bard's Tale**. JO.

TEMPLE OF APSHAI TRILOGY: $39.95 graphics adventure game on disk for the Amiga. From Epyx. Mouse and keyboard controlled, 512 K required. DOS protected.

If any of you recall, **Temple of Apshai** was one of the first role-playing games for the old PET computers. From the PET, EPYX transferred it to the C-64, added better graphics (obviously), and released two sequels, **Upper Reaches of Apshai** and **The Curse of RA**, to create the **Temple of Apshai Trilogy**. Now it is available on your Amiga. I was optimistic when I first heard that it was ready, but I was disappointed in this version. It's not that I don't like the game, because I do. It's just that very little of the Amiga's power is used. Although the Amiga is still fairly new to

software vendors, I was still hoping. Yes, some of the graphics are new - the title screen and the character creation menu portions are well done. But after entering the dungeons, the graphics are only adequate.

There are twelve levels of 568 rooms with over 30 monster types. There are literally dozens of treasures and traps to use, collect and avoid. I still consider this game a classic, but if you already own one of the other versions, don't bother. Recommended. -Art Lewis Kimball

TEMPLE of APSHAI TRILOGY $39.95 adventure games on disk for the C64. From Epyx. DOS protected.

Having had the original adventure game, **Temple of Apshai**, for about three years, I was skeptical that it would be worth the extra expense to buy the newer **Trilogy** version. To my surprise and delight, it not only gave me two new adventure games, **Upper Reaches of Apshai** and **Temple of Ra**, but through the addition of joystick control and fast load routines, the action of the game was greatly speeded up. While the documentation is good, gone is the tale of Brian Hammerhand that yielded interesting visions of the adventure. Geb's beard! Everything that made the original game a success - bartering with the innkeeper, monsters, treasures, secret passageways, and mysterious rooms, are all in this improvement. For every adventure gamer - whether he has the original or not - this one is Recommended. Todd Hill

ROGUE: $39.95 game on disk for the Amiga. From Epyx. One player, mouse and keyboard controlled. 512K required, DOS protected.

Rogue is from the old mainframe days (or so the docs say...you wouldn't know it without being told) and has been rewritten for the Amiga. HiRes graphics and game play are both similar to **Apshai's**. There are 27 levels of the dungeon and 26 different monsters to contend with. Play is very easy with the mouse. You just point and shoot. That's it. You can use the mouse or keyboard to pick up and use weapons, potions, and scrolls, cast spells, and fight in your attempt to survive the Dungeons of Doom.

I enjoy this game more than the **Apshai** trilogy mainly because of the random factor. Rooms, monsters, and many other variables all change from game to game. No maps are needed. You can save a character you have been playing for later use, but if he ever dies he'll be scratched off. Many gamers will not like this but you're going to play HUNDREDS of hours before ever getting near your final goal: the Amulet of Yendor. As in **Apshai**, adequate graphics, excellent playability, and good features. I Recommend this game. JO

WILLOW PATTERN and CHIMERA: $19.95 two games on disk for the C64. From Firebird Licensees Inc. DOS protected, joystick and keyboard control.

Chimera is a rose amongst the thorns of programs in the Silver Disk Series. Of all the Firebird packages reviewed, it was the most fun and challenging. Very good graphics, sound effects, voice reproduction, and game play make it a good buy. **Willow Pattern** is yet another graphic adventure game that has the player running around in a Japanese garden battling monsters and plants of all types in the hope of rescuing the princess. In light of **Chimera**, I recommend this package. JO.

MICRO-LEAGUE BASEBALL: $39.95 baseball simulation on disk for the C64. From Micro League Sports Assoc. DOS protected.

This is one of the best sports simulations on the market. Released in 1985, it's been on the market and selling very well. Even though I'm not a baseball fan, I do enjoy playing Gamestar's Baseball, but it's all strategy and very little joystick.

M.L.B. is a very sophisticated program. I'm amazed at the statistics (which all baseball fans love to spout) and various baseball players all act in character.

You don't have to worry about hand-eye coordination. You're the manager of any

current or past NL and AL team, including World Series teams of the 60's and 70's and All-Star rosters. No two games are alike. I played half a dozen games with the same teams and the variations were great!

As manager, your decisions directly affect the outcome. You can choose line-ups, have your players steal bases, put in relief pitchers, call for bunts, and control nearly all aspects of the manager's game - except the tobacco chew. You, as the manager, must make all the real-life decisions just as the majors do. You can even draft players into your own team.

Besides this program, Micro League Sports Assoc. also has the following titles that enhance this sports simulation: **Team Disks** for $19.95 each, **Season by Season** at $19.95 (includes '83 to '85 teams), **Franchise History Team Disks** for $29.95, and **General Manager/Owner Disk** for $39.95.

Of the many baseball games available, I recommend Micro League Baseball above the others for strategy, realism and, most importantly, playability. Highly Recommended. JO.

SLUGGER: $12.95 game on disk for the C64. From Mastertronic. For one or two players, joysticks required, DOS protected. No statement of warranty.

One of the best releases from Mastertronics, **Slugger** is an excellent simulation of baseball - probably one of the best on the market. It simulates practically all the aspects of the real game, and playing it is made easy by using only one joystick per team.

After a lengthy load, the playing field comes to the screen and, if you do not input specifications, a demonstration game begins. You choose a one or two player game. If you do not like the default team colors of red and blue, you can change those as well.

A touch of the <F7> key and presto! The Great American pastime begins. On the one player version, the computer takes to the field. As the visiting team (naturally the computer is right at home) you are first at bat.

On the offense, you can swing the bat at three different speeds or not at all. Once on base, you can control the lead base runner and steal bases (very hard to do against the computer).

The defense has two outfield position options as well as nine variations of pitches. You control the entire team one player at a time. Each player can run, field, and throw the ball.

The sound effects are second to none. A jingle plays when the field is first shown, an abbreviated version of the American national anthem is played when the game starts, and another jingle is played when the cheerleaders do their rooting on the field four times per game. There are also the expected sounds of the bat/ball contact and the ball/glove connection. There is yet a third tune when someone hits a home run.

The scoreboard is worthy of mention. In addition to the score, it gives you the outfield position options, the steal base option, and a close-up of the pitcher to the batter before each pitch. Here is where you determine whether the pitch will be high or low, in the strike zone or a ball.

The game runs nine innings, with extras if the game is tied. The graphics are all excellent - even an anxious fan who says, "Hi, Mom!" As good or better than most $40 or $50 dollar software, **Slugger** is a must for any library. Highly Recommended. Dan A. Sieben.

TWO ON TWO - GBA Championship Basketball: $39.95 arcade game on disk for the C64. From Gamestar, one or two player, joystick controlled, DOS protected.

If you have played Electronic Arts' **One On One**, you will be pleasantly surprised with Gamestar's **Two On Two**. If one is good, two must be better! One of the most anxiously anticipated sports simulations so far this year, T.O.T. has lived up to nearly all expectations.

Basketball games can be played with one or two players. You and a human or computer teammate challenge a computer pair on the full length basketball court. **Two On Two** very well simulates most aspects of the game of basketball, excepting the sweat!

There's a practice mode for one or two players to warm up and get familiar with

the game. Practice your shooting with hooks, jump shots, slam dunks, and tip-ins. Ball handling must also be practiced as this is a very important part of the game.

Your options for playing include: one player versus computer team, two players versus computer, 2 players against each other, or just practice. You can even have a friendly game of Round-the-World or Horse!

You use the joystick to pick your offensive and defensive plans every time you get the ball. Your player moves, shoots, and passes as you control him with the joystick. Game play is smooth and controlled. This game is not just for the joystick jockeys; you must use strategy and teamwork to win. Knowing when and where to pass is just as important as shooting technique. And knowing your own team and the opponent's traits are critical to a great game of basketball.

You may choose your computer teammates from a ten player list of real personalities including stars like Magic Lyndon and Wilt Dulmage. In league play, there are 23 other teams to compete against in the hopes of becoming GBA champion.

I have only two criticisms: no chance to call time-outs and the players never seem to tire. These are small but would enhance the game even more. You'll find GBA Championship Basketball, **Two on Two**, one of the best sports simulations on the market today. Put on your tennies and wristbands, you're going to have a ball! Highly Recommended. JO.

SLAP SHOT HOCKEY: $14.95 game on disk for the C64. By Sean Grant, from Advantage Artwork, For two players, joysticks required. DOS protected. 90 day media warranty.

Slap Shot was the first attempt to capture all the action of ice hockey on a graphic computer. Skating, shooting, and checking are very well simulated in this program. The action of the game can be halted at any time by hitting the <RUN/STOP> key.

After a three minute load, both players are asked to choose their team. The options include Teams Canada, West Germany, USA, Czechoslovakia, Sweden, and Soviet Union. Upon each selection, a few chords of the chosen country's national anthem are played.

The sound effects, done by Electronic Speech Systems in California, are an excellent addition to the program. The roar of the crowd, the organist, and the announcer (at scores, penalties, and face-offs) can be heard.

Each person controls six players with a joystick - one at a time, but control can be shifted between team members. This allows passing and goaltender saves. The goalie can even hold the puck for a face-off. You can choose the speed of the game: fast, medium, or slow. However, even the fastest mode seems slower than normal game speed.

Penalties are called for rough play. Where in the real game your team plays short-handed for two minutes, in **Slap Shot** a face-off is conducted in the zone of the penalized team. This loss of forward progress seems inappropriately light.

Missing from the game are off-sides calls and overtime, although overtime was only introduced into the National Hockey League during the 1985/86 season. Penalties other than roughing are not called.

Some enhancements could be made to better the game. The players could be larger and it would be nice to have a computer opponent. A revised version has just been put on the market under the name of **International Hockey** which has included the latter feature.

It seems to have been distributed a bit too early and should have been kept back until some enhancements were made. Certainly not the best, **Slap Shot** was once the only hockey software available and has sold well. Not Recommended. Dan A. Sieben.

HOLE IN ONE GOLF: $5.99 (CANADIAN) game on disk for the C64. From Artworx Software Company. 1 to 8 players. DOS protected, no warranty.

Hole in One Golf comes complete with an 18 hole, par 72 course. As you progress through the course you are given an bird's eye view of each hole, showing you the tee, fairway, sand traps, water hazards, and

green. Before you begin you have the option of starting at any hole on the course - good for practice or playing just the back nine.

Players are given nearly as much control of their shot as in the real game. Every golfer begins with a bag of 10 clubs - three woods and seven irons including a wedge and putter. On each shot, using only the joystick, you choose the club, the direction of the shot, the strength of your swing, the location where the club contacts the ball, and whether the ball will go straight, hook, or slice (with a degree of chance on the latter two).

If a shot hits a tree, it will change directions. If a shot hits the water (with a splash), it is dropped on the side of the water farthest from the hole. If a ball lands in a sand trap, a wedge must be used on your next shot.

When you get on the green, a close-up view shows where you've landed and are rolling in relation to the green and the cup. A putter shot allows you to control the direction, strength, and club face angle. It is just as tricky as any real green.

Where most other games will wear out their appeal, this one has added bonuses. Firstly, the greens and sand traps change their shapes every time the game is played. Secondly, you can design your own course. There are 228 different combinations of fairways, trees, sand traps, greens, water hazards, and rough grounds. You can build your own version of Glen Abbey or any other golf club.

The simulation is completed with the addition of appropriate sound effects. **Hole in One Golf** is truly an extraordinary piece of software. It is undoubtedly a great buy at any price. Highly Recommended. Dan A. Sieben

MINI GOLF: $9.99 (CANADIAN) game on disk for the C64 from Gold Disk, Ltd., and Laing Marketing, Ltd. One player, keyboard controlled, DOS protected. No statement of warranty.

Mini Golf does a great job of mimicking the real game of miniature golf. It has 18 holes and is really quite challenging. The player controls the direction and the strength of every shot from his eye-in-the-sky vantage point. The screen displays the number of shots taken on the hole being played as well as maintaining a running total of shots for the round.

The courses are littered with sand bunkers, water hazards, and other obstacles that cannot be penetrated - there are no clear shots to be had. A hole in one is almost an impossibility.

Many holes are simple, but others are quite hard. Having only keyboard controls adds to the difficulty. Overall, you can expect to complete the course under par after only a few rounds. The fact that only one player can play eliminates much needed competition.

This is the type of program that you may use now and again, but not too often. Playing this game too frequently will wear out its appeal since it does not change. While the program does show you the par for each hole, you must manually compute the par for the entire course by adding up the pars for each of the holes.

I think maybe the author spent too much time trying to protect his software at the expense of a better program. What is there is good but additional programming could have made it better. Average. Dan A. Sieben.

SNOWDRIFTS & SUNNY SKIES: $40 action game for the C64. From Tri Micro.

Snowdrifts, a game for all ages, includes arcade action, graphics, audio and a learning database. The object of the game is to predict the next day's weather for a given city using the current conditions and known weather patterns.

Within the program, very pleasant background music has been added to maintain continuity between action events. In addition, action audio lends to the arcade effect. Very good graphics show a detailed weather map of the U.S, showing high and low pressure centers, fronts, etc.

The database contains a great deal of information on standard weather patterns and variations. The database is called upon randomly to provide the uncertainty as

Mother Nature would do herself.

The program is menu driven with plenty of prompts. Very little time is required to develop the skill needed to play the game.

Snowdrifts and Sunny Skies is a unique program in that it incorporates learning and arcade. Very good graphics and ease of use make it suitable for young players. I was surprised at the good use of the C64's power in sound, graphics, and database processing. Young and old can enjoy the competition against one another. Recommended. Tom Warning

WORLD KARATE CHAMPIONSHIP: $29.95 disk for the C64. From EPYX. Joystick required, DOS protected, one or two player.

Yes, Virginia, another karate simulation, but this one is from the game giant, EPYX. The characters seem surprisingly similar to **Fists of Death** by UBX. The EPYX version is, however, very good. Animation is quick and responsive to joystick control. You have fourteen realistic karate moves and the fighters even have facial expressions as you fight. You can fight your opponent in many parts of the world - Australia, Japan, eight in all - as you battle your way from white belt to black belt. Highly Recommended. JO.

SUPER CYCLE: $29.95 action game on disk for the C64. From EPYX. Joystick required, DOS protected.

In this action game, you are placed on a motorcycle and must maneuver and shift your way to the finish line in an limited time. Fast graphics show the road and various background scenes as you progress through more and more difficult race courses. These scenery changes are encouraging because otherwise the game becomes very boring, even for the kids. Animation is very similar to **Pole Position** by AtariSoft. Not recommended. JO.

CHICKEN CHASE and **RASPUTIN**: $19.95 games on disk. From Firebird Licensees Inc. DOS protected, joystick controlled.

You're a rooster and you have a mission: Keep your hens happy and safe from predators. Not a bad game but the playability and graphics are difficult. **Rasputin** involves neutralizing evil spells that have been cast by that evil guy, Rasputin. Again, hard to play. I Don't Recommend this one. JO

THE ARC OF YESOD and **THE NODES OF YESOD**: $19.95 games on disk. From Firebird. DOS protected, joystick required.

You have a small fellow in a spacesuit on a lunar surface. All scenes are graphically displayed and playing the game is straightforward. **The Nodes of Yesod** is a sequel or continuation of **The Arc** with the same character but now you are below the surface and must deal with a new set of bad guys. Good sound though. It's easy to play but not very interesting. Not Recommended. JO.

PUZZLES: $24.95 disk for the C64, Plus/4, and C128. From Cardinal Software. Keyboard controlled, printer required. Unprotected.

This package of BASIC programs includes a Find-a-Word puzzle printer, Headliner, Code Breaker and Crypto. Of these, I enjoyed the word search program most. There are nineteen ready made puzzles and an option to custom make your own. You can print the solution as well as the puzzles.

Crypto and Code Breaker are familiar to anyone who enjoys cryptograms. Code and decode your own messages. Headliner is a simple program that will print a banner (or headline) that you type in. I can recommend spending $24.95 for this package only if someone wants to learn about BASIC programming. Otherwise Not Recommend. JO.

BATTLE GAMES: $24.95 collection of games on disk for the Plus/4 and the C128. From Cardinal Software. Keyboard controlled, unprotected.

Battle Games is a collection of five BASIC programs: Sea Battle (1 or 2 player versions), ICBM, Gryxxl and Depth Charge. Sea Battle is similar to the board game of the same name. Of these games, it's the only one I'd play more than once. I also found a couple of bugs in it. Five programs for the retail price puts these at five dollars apiece. I can recommend spending 24.95 for this package only if someone really wants to learn about BASIC programming. Otherwise, Not Recommended. JO.

LEARNING CAN BE FUN: $24.95 collection of educational games on disk for the Plus/4 and the C128. From Cardinal Software. Keyboard controlled, unprotected.

Math exercises, States and Capitals, Word Games (with four variations), Hangman, Word Finder and Jot are included in this package. All programs are in BASIC and are appropriately slow. I can say this package is worth something to Plus/4 owners who can't find any public domain software for their machine. Also, this package would be good for someone wanting to see an example of BASIC programming and it's shortcomings. Not recommended. JO.

MAD LIBS (and other Fun Games): $24.95 collection of games on disk for the Plus/4 and C128. From Cardinal Software. Keyboard controlled, unprotected.

For new newcomers to personal computing, **Mad Libs** is an old program that creates random stories based on your words or words supplied by the computer. Name Games include Hangman and Word Scramble. Roll-X is a simple dice rolling game with the object of attaining a given score. Oregon Trail is another old game; use your common sense in a trek to Oregon in 1874.

Again, these are BASIC programs that are slow, clumsy, and unforgiving in data input. Not recommended. JO.

LOGIC GAMES: $24.95 games on disk for the Plus/4 and the C128. From Cardinal Software. Keyboard input.

This package of software includes: Concentration (VERY similar to the board game), Mastermind, Capture, Magic Squares, Poker Solitaire, Wumpus, and Twister. All are in BASIC and are slow in keyboard response. Concentration and Twister can be for two players. These programs are adequate for learning BASIC programming and lonely Plus/4 owners. Not recommended. JO

Graphics

PERSPECTIVES II $59.95 3D graphics program on disk for the C64. From MicroPACE, Inc. By Anthony Chandler and Aaron Butters. (Originally Flexi-Aided Design, from Pioneer Software). Control port input device required, e.g. light pen, joystick, graphics tablet. [**Flexi-Aided Design**: $49.95 is the same program but requires a Flexidraw light pen.] Color monitor desirable. DOS protected.

If you want a simple, two dimensional image of a three dimensional object, like a box, stay with a graphics program like Flexidraw or Doodle. If you want a sophisticated CAD type program that will let you draw a box, turn, tumble, and view it from almost any conceivable position, from any range...this is as good as you are going to get.

Perspectives II seems to do everything it claims. Drawing in three dimensions is rather cumbersome compared to drawing on a simple two dimensional plane, but that is to be expected. The authors of this fine program went a long way toward making it as easy as possible.

The program, obviously graphics oriented, uses menu windows driven by your chosen input device connected to one of the control (joystick) ports. The primary activity, drawing the three dimensional objects, is done on its own four part screen. Three of the four parts offer

objects, is done on its own four part screen. Three of the four parts offer different views (top, front, and right side) of the object you are drawing. The sequence for drawing a single line is rather long, but effective. You must tell the program that you are starting a new line, that the current point will be the origin, and then set the point. When you set the point, you are not setting it directly with the control device, but indirectly. The center of the screen is the origin, having X, Y, and Z axis values of zero. As you move the control pointer relative to this origin, indicators move within each of the viewing quadrants to indicate the actual position with respect to the current object being drawn. This indirection is confusing at first, but it offers somewhat finer control.

Also, when you are drawing a line, you ARE working primarily within one of the three viewing quadrants. Each quadrant directly affects a different pair of axes. Thus, while working within the top view quadrant, you are directly affecting the values of the current point's X and Z coordinates, while the Y coordinate stays constant. Changing the Y coordinate, when working in that quadrant, requires manipulation of the value within the control menu. When drawing in the other two quadrants, the Y coordinates change directly, with either the X or the Z remaining constant.

Even though the setting of points and drawing of lines requires several steps, and can get tedious, the advantages add up. For example, I wanted to draw a three dimensional "3D." I drew the front view of the character "3," which took a while. Then, within the Edit Data option, I copied all the data and changed the Z value of the complete range of points that comprised the "3." That took about 2 minutes. I wanted the three dimensional character deeper, so I increased the Z value again, which took about 1 minute. I was starting to be impressed. It did take awhile, then, to print out the point data value - the X, Y, and Z values of each point I had set - and then join the points of the front image with those of the rear image.

Once I had the three-dimensional "3" constructed, the program got really impressive. I could view the character up close, from far away, or from any horizontal position (azimuth) or vertical position (elevation) I wanted. Further, I could take a series of snapshots of the character from different perspectives and then show the series in a filmstrip, making the three dimensional character appear to tumble. THAT is where **Perspectives II** is nice.

Other features include the options to translate the pictures to **Flexidraw** or **Doodle** format, to combine pictures you have drawn, to view the objects in stereo (with 3-D glasses, just like the movies), to hide lines, to change colors, to print the pictures to most standard printers - either in standard size or expanded 4 times, etc.

The program supports multiple drives - something I always look for. This allows you to leave the program disk in device number 8 (it must occasionally call routines from disk) and your data disk in device 9. I spent good money for the convenience of a second disk drive, and I expect programs to support it. This one does.

For this review, I used both the **Flexidraw** Light Pen [18:57, 32:5] and the **Animation Station** graphics tablet [22:47]. Both devices worked very well. The light pen had some trouble in drawing mode when I wanted it to register coordinates that had dark characters on the screen, a simple matter of not enough light. The graphics tablet had trouble registering coordinates at the far left edge of the tablet. The tablet seemed to offer slightly better control when setting points, and had the advantage of not being required to bend over the keyboard to get to the screen to draw. The light pen had the advantage of being more direct in moving around the screen. Either one is very good.

While **Perspectives II** requires far too much work for two dimensional drawings (you already have another program for this anyway, most likely), it would be hard to beat for three dimensional drawings. As such, it is somewhat specialized. It does require some getting used to, and a good bit of work to get a nice drawing. But if you have need for such a program, or would enjoy some serious play, it is great. Highly Recommended. Tim.

CADPAK 128: $59.95 computer aided design program on disk for the C128 mode. From Abacus Software. DOS protected. 30 day free replacement media warranty, nominal fee thereafter.

One of the few C128 CAD programs out there right now, **CADPAK 128** works, but I would hardly hold it up as a standard. It looks like it properly handles all the basic CAD functions. It seems to be written in compiled BASIC, and it runs only in the forty column mode (as expected) and so must run at 1 MHz. It is supposed to print in true aspect ratio, but while it came very close, it did not quite do so on my MPS 803.

Cadpak 128 provides a virtual screen of 640 x 360 pixels, with about 300 x 200 pixels visible at any one time. When creating the design, the program offers two different menus with slightly different features.

The only real advantages I can see that **Cadpak** might have over something like **Flexidraw**, or even **Doodle**, is the large virtual screen, and the ability to draw using absolute coordinates and to scale the drawing. I would not want to have to use **Cadpak** for serious CAD work. Average. Tim

CHARTPAK 128: $39.95 charting and graphing utility on disk for the C128. From Abacus Software. DOS protected. 30 free replacement media warranty, nominal replacement thereafter.

This is a very versatile program that would be excellent if it were not so slow and cumbersome. The package lets you draw pie, bar, line, and other charts on the C128's 40 column screen and then send the graphs to a printer. There are many options for the creating and modifying the charts, but an extensive menu system makes it fairly easy to use. But, because the data has to be hand entered, or ported over from **Busicalc or Multiplan** (with which **Chartpak** is compatible), or tediously adapted from another spreadsheet, it can take a long time to enter all the data and set up the graph. I prefer using the simpler, faster graph utilities built into a spreadsheet, such as **Rhapsody**, **Swiftcalc**, or **Vizastar**. **Chartpak** is supposed to print the charts it creates in true aspect ratio, i.e. a circle is suppose to be a true circle; it did not properly do so on my CBM MPS 803, although it came very close. It also seemed that the full range of charting options was not available with the 1525 printer module.

Abacus should be commended for the support it gives for porting information over from other spreadsheet programs - it has about three and one-half pages of information on how the data files and chart specification files are set up. This will allow users to create their own program to translate information. There is a Conversion program to help with this.

All in all, it seems like a decent package, but I don't see that there is a great need for it. Most people can stick with the better spreadsheets to no disadvantage. Average. Tim

Wordprocessors

GHOST WRITER 128: $39.95 word processing program on disk for the C128. From Human Engineered Software, licensed from Viza Software. 90 day limited media warranty, $12.50 (plus postage and handling) replacement after warranty.

Boy, this seems familiar...Licensed from VIZA, you say? It looks an awful lot like Vizawrite Classic for the C128, but without all extra features. And, basically, that is what it is. The price is lower and you don't have to mess around with the cartridge. Both Vizawrite Classic and its shadow, Ghost Writer 128, have many little quirks. Vizawrite has enough power to make up for the quirks; Ghost Writer does not. I think one can do much for same the money, and a lot better for a little more money. Average. Tim

THE WRITE FILE: word processor and file utility on disk for the C64. From Tri Micro.

The Write File is an elementary word processor combined with a simple mail list manager that can be used together. The word processor offers 77 columns of text on a virtual screen, with 37 columns visible. A help screen can be brought up with a touch of a function key to make it easier to find the right command. Two reversed color indicators at the bottom of the screen give the column and row position to let you know where in the text you are working.

The second program, the File Manager Enhancement, can be used to create mailing lists, inventories, etc. It is limited to seventeen fields, but does allow multiple sorts. The lists are easily merged into the word processor.

Both programs are easy to use and you don't have to have the manual close at hand for most operations. This is a very nice introduction to word processing and file management. For heavier use...? Average. Joe O'Hara

CHECKBOOK 128: $19.95 checkbook ledger and balancing program on disk for the C128. From Nu-Age Software. Unprotected. Requires 80 column monitor.

People have been saying for years that computers will make life easier. We all know better, and most of us remember the frustration we felt when, with our brand new computer, we tried to use it to keep track of our checkbooks. Most of us never followed up.

The problem was, it now seems, that there were no programs that were just right for keeping checkbook records. Spreadsheets and databases, however nice, are overkill. BASIC programs were just too simple, error prone, and buggy. This may sound a bit silly, but Checkbook 128 may be the harbinger of the next revolution in home computers.

You see, Checkbook 128 is incredibly easy, and it works. It makes sense. It doesn't have a manual - you just load the program and press the <HELP> key. It makes no claims to do everything you ever wanted; it just keeps a log of the checks, charges, and deposits to your checking account and calculates the balance. It does EXACTLY what a simple checkbook program should do; no more, no less. And it does it easily, quickly, and simply. The only disadvantage is that you must, of course, enter the data. Highly Recommended. Tim

VIZASTAR 128 $120 integrated spreadsheet, database, & graphics program on disk and ROM cartridge for the C128. By Kelvin Lacy, from Viza Software. 15 day money back satisfaction guarantee, 90 media warranty ($3.50 postage and handling), $10 replacement for defectives after warranty.

I have mixed feelings about Kelvin Lacy's programs. It is not ambivalence; the feelings are too strong. One the one hand, Mr. Lacy's programs are incredibly powerful, full of features, and they generally work. On the other hand, there are enough irritating little things about his work that I often want to scream.

Vizastar 128 is the new brother of Vizastar for the C64. Big, powerful, plenty of features, and just as good as its predecessor. As such, it is an excellent program. Sixty-four thousand cells, and about 64K of workspace. Full control over all the cell formats and contents. Easy to use. What more could you ask for?

To begin with, you might ask for the program to start up with legible colors - the default light blue on gray is pretty poor.

I understand that the disk is NOT DOS protected, but it might as well be. The BOOT sector does enough rearranging that you cannot use a Uni-Copied copy to boot the program. Pity - it makes it so convenient to keep the program and the data on the same double sided disk. A little thing, but it would be nice. Of course, it does not need any DOS protection because you must have the ROM cartridge plugged in. Which brings up another point: If you want to use both Vizawrite and Vizastar, you will have to have multiple slot cartridge port extender, or swap cartridges every time you switch between programs. I don't like programs that require a cartridge anyway, and here the cartridges get in the

way of integrating two very powerful programs.

Another little thing: The worksheet window shows a full eight standard cell columns (A through H), and part of the ninth. If you put the cell pointer in the ninth cell column from the original screen, you can see that the pointer is there, enter and edit data in that column, etc., but you must cursor over to the tenth column to see what is in the ninth. No big deal, just a hassle. The window should automatically scroll over. It becomes a bigger deal if you are using the whole sheet and make it over to column BL. You will never see the rightmost part of it. Again, you can enter and edit, but it will never appear correctly on your sheet window.

In spite of all these irritations, Vizastar 128 remains a very powerful program. The graphs are fast and beautiful, especially MultiBar and Pie. I have no complaints with the actual function of the program...just with the way some of it is designed. It is an excellent spreadsheet, and a very good database. [I would very much like to have another review of Vizastar 128, from somebody who is able to use it more extensively. In a few days of use, I found no real bugs, but it was a reviewer's test, not a real life situation.] Highly Recommended. Tim

SWIFTCALC 128 - revised: $70 spreadsheet program on disk for the C128. From Timeworks. DOS protected.

After using **Multiplan** on the 64 and **Lotus 1-2-3** on an IBM PC, I feel that I've seen both extremes as far spreadsheets are concerned. Where does **SwiftCalc 128** fit in between these two? We'll get to that in just a minute.

First, **SwiftCalc 128** offers just about every popular feature you'll find on any spreadsheet. The menu can be called by hitting the <ESC> key, then you use your cursor to choose among the options. Pull down menus are used under each command at the top of the screen. If all of this seems too slow, you can use the fast keystroke commands to get the same results.

The screen displays 128 cells at a time, out of a possible 62,500. This feature alone makes **SwiftCalc** a powerful program. With this amount of workspace, small businesses should have ample room to operate. The screen is also full of helpful status and prompt areas that keep the user informed as to what is going on. A touch of the <HELP> key gives a quick look at the most commonly used commands.

A major feature of **SwiftCalc 128** is that it comes with the popular Sideways program. Take any spreadsheet file and create a Sideways file and you're in business. That file now can be printed out sideways on one or several sheets of paper.

The newest feature, present in the most recent versions, is graphics. **SwiftCalc** can now display numeric data as vertical, 3D bar, scatter, line, pie and exploded pie graphs. The quality of these graphs on both screen and printer are excellent.

Now, back to my original question of where **SwiftCalc 128** fits in between **Multiplan** for the 64 and **Lotus 1-2-3.** It certainly is 100 times the program **Multiplan** is for the 64. **SwiftCalc 128** lacks the speed of **1-2-3,** but that is because of memory and clock speed restrictions in the 128. Timeworks did the best job possibly in working with the 128. It was a pleasant surprise and it also interfaces with my other Timeworks applications.

I would recommend **SwiftCalc 128** to any 128 user that is seriously considering buying a spreadsheet. Besides its power, Timeworks offers users a toll free help line! HIGHLY RECOMMENDED-Mike Stout

FINANCE and STATISTICS: $24.95 BASIC mathematic utilities disk for the Plus/4 and the C128. From Cardinal Software. Keyboard input, Unprotected.

Sixteen financial calculators, five regression modules, many statistical routines, linear programming and odds calculator are all in this package. Probably some of these financial programs could be used for mortgage amortization tables and present-future values and payments. All in all I Don't Recommend these programs. JO

Disk Utilities

PARTNER 128: $69.95 cartridge utility for the C128. From Timeworks. Toll free support line. 80 column monitor required.

The fool thing not only works, and works well, but also shows incredible thoughtfulness and thoroughness in concept and design.

Partner 128 provides the C128 with seven utilities that are, apparently, completely invisible until activated. The cartridge plugs into the expansion port and has a cord that plugs into one of the joystick ports. A button on the top of the cartridge activates the utility and brings up a menu.

The cartridge provides: 1) Appointment Calendar; 2) Memo Pad; 3) Address & Phone List; 4) Calculator; 5) LoRes Screen Dump; 6) DOS/Printer commands; and 7) a password keyboard lock. An eighth option provides for configuring **Partner** to your system and needs.

The cartridge has its own RAM in which is stores the current information - either the Calendar for the current month, the current Notepad, or the current Address List - which limits the amount of information that can be immediately accessed. This is no big problem as long as you have a disk with the **Partner** data in the drive. Flipping back and forth between the Lists, Calendars, and Notepads is fairly quick and very painless. It beats the heck out of exiting the current program, loading up another, then going back to the original.

The Calendar provides displays for every month from January 1986 through December 1999. A flashing cursor highlights a date, and <RETURN> takes you to the notes for that day. Four boxes show information for the day. The first is a title which will show on the monthly calendar. The three other boxes are for goals, things to do, and appointments. **Partner** will print the schedule for the current day, for all days of the current week that have scheduled events, or all days of the current month that have scheduled events. You can move from month to month to see the overall calendar, but you can only work with one month at a time, loading and saving the current month before loading the information for the next month.

The Memo Pad is a sixty column by fifteen line screen editor with a number of editing functions. While not a full fledged word processor, it is a good little notepad for specialized help screens, writing short memos or letters, or keeping an outline. It also has an option to act like a line edited typewriter, accepting text until it wraps to the next line, or you hit <RETURN>, and then sending that current line to the printer.

The Address/Phone list is pre-formatted for name, address, city, state, ZIP code, and phone number. The number of entries is limited by memory size. This utility includes options to insert and delete entire records, sort the records alphabetically, search for information (in the name field) sequentially, print the entries onto mailing labels or paper, and to use a 1650 or Hayes type modem to dial a telephone number from within the entry.

The Calculator provides simple arithmetic functions, plus memory, and has an option to print a hardcopy of the entries and results as you go along, much like a simple adding machine.

The low resolution Screen Dump sends the current screen - not the **Partner** screen, but the screen before entering **Partner** - to the printer, and then returns to the original program.

The DOS/Printer commands don't really offer much; this utility just gives you access to a command channel to a drive for formatting, validating, initializing, and the like, plus the ability to send control characters to the printer - for activating alternate characters sets, setting margins, etc.

The Swiftloc function prompts for a password, confirms it, and then locks the keyboard until the same character sequence is entered. This can help prevent prying eyes from looking over your files...unless the prying eyes have fingers that will reset the computer. This feature might come

in handy at times, but I don't use it much.

Finally, the Setup option lets you tell **Partner** in which drive you will be keeping your **Partner** files (8/9, 0/1), whether to handle the files as ASCII or PETSCII (for disk, and for the printer), secondary address for the printer, spacing for mail labels printed for the address list, and commands to set up the modem to dial from the address list.

So much for the features. The incredible thing is just how invisible **Partner** is, how well it works, and the little things that Timeworks did to make life easier.

The cartridge is activated by pushing a button at the end of the cartridge, far away from the computer. Continually pressing this button would eventually weaken the computer's circuit board...except Timeworks provides a rubber foot to put on the bottom of the cartridge so the end of the cartridge won't go down when you press the button.

The cartridge has a cord that connects to joystick port number 2. This can be troublesome if you want to use a dongle protected program that requires the dongle be in joyport number two, e.g. **Paperclip, Matrix,** or **Bob's Term 128.** So, you can either use a joystick Y connector, and connect them both, or you can put the cable in joyport number 1 and hold the <CONTROL> key down when you press the cartridge button. That works too.

The **Partner** menus and utilities appear in a window in the center of the screen. The window is outlined in dark blue, with text, cursors, forms, etc., appearing in complimentary colors, all on a black background. This may not be the colors you are using for the program, so it sets the screen to its own colors, and changes them back to your chosen colors when you exit **Partner.**

Because **Partner**'s memory is limited, and you lose the information in one utility when you move to another (e.g. from Calendar to Mail List), it prompts you to optionally save the data in the one you are moving from...but only if you have made any changes. It automatically replaces a file when you SAVE, without requesting any confirmation. I have not yet lost anything to this, but I am sure that I will.

Partner works only in 80 column mode. The 80 column VDC can handle alternate character sets at the same time. Bob's Term Pro loads its own character sets, so when you first call **Partner,** you get garbage in the utility's window. '<LOGO> G' takes care of that. The characters still look funny, but they work and are readable.

So far, I have used **Partner** with **WordPro, Paperback Writer, Gnome Kit,** and **Bob's Term Pro 128;** I have encountered no problem other than some funny looking characters. A cursory test showed that it also seemed to work with **Superbase** and **Superscript** both in the machine.

If you want to quit the main program you are running, but want to keep **Partner,** and its data, intact, a '<LOGO> Q' from the **Partner** menu will reset the machine without disturbing **Partner.**

Finally, the manual says that it is possible, and might be desirable, to provide further utilities, and that it can be done in machine language. For a nominal fee, Timeworks will send you a disk with documentation, sample source files, and a sample utility.

I have encountered only two (possible) problems. The first is that the text reformating function within the Notepad works funny. I don't trust it, and I don't use it much. I don't lose any text when I use it, but it sure screws up the format that I had. The other is that when I access **Partner** from within some programs, such as **WordPro,** it will not let me access a disk without manually overriding it (with a '<LOGO> o'>.

All the files are stored in standard DOS sequential form, either as ASCII or PETSCII (your option). Thus it should be possible to merge Address List data to or from a number of database programs, or Memo Pad text to or from a number of word processors.

I have only had **Partner** for a couple of days, but I am getting used to it REAL fast. It is very nice to have a notepad, a calendar, and telephone numbers all at hand at the touch of a few keys - without leaving what I am doing. I am less likely to loose a disk than a piece of paper. It could be cumbersome with a single drive system. I sit all day, and most of the night, at two drive C128 systems. I have

WordPro 128S (with dictionary), **Bob's Term Pro 128, Gnome Kit 128,** half a dozen assorted and sundry utilities, and my **Partner** files all on one disk. I put this disk in device 8 and I'm ready. It can only get better when I get a 1581 (3.5 inch 700 Kbyte micro floppy). Highly Recommended. Tim

Mach 128 - revised: [versions **Mach 128** V.2A, **Mach 5** V.1B] $49.95 disk speed up and utility cartridge for the C128 with 1541/1571 disk drive(s). From Access Software.

Actually, this cartridge is two utilities in one -**Mach 128** for 128 mode and **Mach 5** for 64 mode. Fast disk routines are reliable and about the same speed as most such schemes. A well-rounded selection of wedge commands are always available to make disk access more convenient. Access has fixed many of the little irritations, like not being able to define TI$ from BASIC and improper initialization from mode to mode using the built-in reset switch, that plagued earlier releases. Other added goodies include a command that lets you use the C128 numeric keypad while in 64 mode and better handling of multiple disk drive device numbers. All in all, Access has had fewer problems with **Mach 5/128** than Epyx has had with their **Fast Load.** Users have not reported messed-up disks like they do with Fast Load, and **Mach 5** is more transparent to the system - more programs work with it.

Unfortunately, ACCESS is still claiming that in 128 mode the 1571 will load at burst speed. This is not true. Despite what was reported in Midnite earlier, the 1571 will load at the same speed - whether **Mach 128** is present or not. Phone calls to Access reveal that they think burst mode is the same as fast serial on the 1571. You must disconnect or disable **Mach 128** if you want to use double-sided disks in 64 mode - it will not load in double-sided mode. Loads are fast when the 1571 is in 1541 mode, though.

Note: The very earliest C128's to roll off the production lines were incompatible with **Mach 5** (and **Mach 128**) - they simply would not work because one of the lines on the cartridge port was wired incorrectly by Commodore.

Mach 128 has limitations but is still the best product of it's kind. If you only use a 1541 with your 128 or you use C64 mode frequently this is a "must have" product. Recommended. -Kevin Hisel

SUPERAIDE: $donation programmer's utility on disk for the C64. By Steve Gast & Rich Rollins. Freeware. Available on many BBSs and most major telecommunications services. Not protected. No backup, no warranty.

This is a comprehensive set of programmer's utilities for BASIC and machine language work. The extended error driven wedge provides all the standard DOS Wedge 5.1 commands, plus listing PRG and SEQ files from disk, without disturbing memory; finding individual REL file records; two commands to find the LOAD address of a program, with one of them showing the ending address. Other commands include CHange, AUto numbering, DElete, APpend, and NUmber - which also provides for the renumbering of a block within the program. Two machine language monitors and a screen editor are also included. It is impossible to document all the features.

The utility is entirely PAL compatible and resides primarily under BASIC and Kernal ROMs, leaving 38911 bytes free for BASIC programs. The disk was released with complete documentation and commented source code on the flippy disk. The PAL source code on the back side is well over six hundred disk blocks long.

SuperAide is almost a new BASIC programming environment on the C64. While it is intended to make BASIC programming easier, the utility provides so many new commands, so many added features to the standard Kernal operating system and BASIC interpreter that once you have used it for a while, you won't want to do without it. It is out there now, so look for it. Highly Recommended. Tim

Hardware

EPSON FX-85 PRINTER: $450 dot matrix printer from Epson America. One year warranty.

The Epson FX-85 dot matrix printer is an improved version of the FX-80 printer. It has all the features found on the FX-80, plus several new ones.

The FX-85 has a 160 cps draft mode and a slower (the manual does not give a rate, but I would guess about 15 cps) NLQ mode. The FX-85 can also be used as an IBM compatible printer and has both IBM character sets in ROM. An 8K buffer can be used as a buffer or for holding custom character sets. The printer uses a nine-pin head, and the firmware supports all the standard features (roman & italic characters, pica, elite, compressed, expanded, super- and subscript, double strike, underline, and international characters).

The NLQ Mode is one of the best I have seen. [And one of the best I have seen, judging by hardcopy of the review Dave sent. Ed.] The characters look so close to typewriter quality that I have done papers in NLQ that teachers thought were typed. The price you pay for this is the much slower speed. But I feel that the print quality is worth the wait.

A feature called SelecType allows easy access to most of the print styles. NLQ or draft is selected by the press of a button. Others - like elite, compressed, and perforation skip settings - are available by pressing certain combinations of buttons. These settings, however, are for the entire printout, not just a single word or line, but they can still be helpful if, for example, you need to print a wide spreadsheet but your program won't send the codes to the printer. Just use SelecType to choose compressed mode.

The FX-85 has a 10 inch carriage with both friction and pin feed (adjustable between 9.5 inches and 10 inches) built-in. An optional tractor feed ($30) and a cut sheet feeder are available. The FX-286, the next model up, has a 13.5 inch carriage, built-in tractor feed, and a faster (200 cps in draft mode) print speed.

The IBM mode allows use of the IBM character sets in both NLQ and draft mode. The IBM sets offer a better selection of international characters than the Epson sets. Some features such as pica and italic characters are not available in the IBM mode.

DIP switches allow control of default features. The 12 switches control: print mode (pica/compressed, emphasized/normal), zero (slashed/unslashed), paper end detector (on/off), printer mode (Epson/IBM), international sets (choose from 8 sets), printer select (allows software deselect of printer), cut sheet feeder (on/off), auto perforation skip (on/off), and auto line feed (on/off).

Other features include horizontal and vertical tabs, margin setting, adjustable line feed, proportional mode (only using emphasized pica, and thus fairly useless), justification in NLQ mode (left, center, right, and full), dot addressable graphics (from 60 to 240 dots per inch with several variations), user-definable characters, and a hex dump mode (very useful for programming).

The wirebound manual is well written and easy to read. It covers all the features and includes many examples. A useful program allows for the easy creation of your own characters. The only problem is that the examples are in IBM BASIC so a little translation is needed. The manual also includes instructions for use with commercial software. Appendices cover the codes needed for all the features in both Epson and IBM mode. Complete technical information on the parallel interface is also in the appendices. A fairly good index rounds out the manual. A reference card is also included.

The FX-85 is a very good, reliable printer. I doubt that compatibility problems could ever arise as Epson is the industry standard for printers. Aside from a few problems like the lack of a useful proportional mode, the FX-85 is Highly Recommended. David Blezard.

C300 MOUSE: $49.95 mouse for the VIC, C64, or C128. From Contriver Corp.

This input device is identical to **Mighty Mouse**, [32:8] As I said there, a perfectly decent mouse, nice feel, and compatible with Jane, Doodle, Blazing Paddles, etc. It still has the little adaptor box that you have to use to hook it up to your Commodore. The only difference, other than the name, and the only reason I mention it again, is that the box in which it comes shows a three button mouse. It is a two button mouse. A further note, there is no difference between the left and right mouse buttons as far as the hardware goes. Thus, unlike the Commodore **1350** mouse, it has only one fire button. There is, at present, no software that takes advantage of two different fire buttons on the 8 bit Commodore machines, and I doubt that any software will, but you might want to take it into consideration. The mouse itself is OK, but there is no excuse for the deceptive packaging. Average. Tim

TAC-3 JOYSTICK: $14.99 joystick controller for the VIC 20, C64, and C128. From Contriver Corp.

Cheap. Adequate, but it certainly does not measure up to the Wico. It is about the same as far as response, and it does have the advantage of three different fire buttons - two on the base, one on the end of the stick - but otherwise is rather flimsy. I doubt that it will stand up to heavy use. Average. Tim

SPEEDKING: $14.95 joystick for the VIC, C64, and C128. From Konix of England. One year warranty.

This interesting little joystick is designed specifically to be held in the palm of the left hand. Its curved base will NOT tolerate being held in the right hand or placed on your computer desk. I guess this is what you would call ergonomic design - except it hurts to use it. Maybe I am weak in my left hand, but fatigue set on real fast. The one fire button is on the right side of the base for easy firing with your left forefinger. A nice idea, but it didn't work out. The stick itself is very short, coming out only about two inches from the base. The contacts are very positive and very responsive - I never had any doubt when I was going in whatever direction. The materials seem like they would break down after several score hours. If you want improve the grip of your left hand, or if you don't want anybody to spend too much time playing joystick games, this one would be pretty good. Otherwise, Not Recommended. Tim

PRINTERMATE 2 Piece Universal Stand: $14.99 pair of wire racks for most printers. From Suncom.

Simple in concept, simple in design, and cheap. But I like it. These wire racks just give you a way to elevate your printer with the back end higher than the front. The advantage of this setup is that it lets you put the paper directly under the printer and effectively take up less space. Each of the two parts has four feet, so it is very stable. By using two separate pieces, it doesn't much matter how wide your printer is. Be careful, however, as some printers will have trouble dragging the paper up from directly under the printer. If your printer has a weak paper feed mechanism, or if you have cables coming out of the middle of the back of the printer you will most likely have problems. Average. Tim

The NOTCHER: $5.99 write enable notch punch for 5 1/4" diskettes. From Suncom.

This notcher has a plastic case, and may break after several months use. The actual punch, however, is a single point die. This makes it very easy to punch the hole but is liable to leave the piece you are punching hanging by one corner. You just have to pull it off. Average. Tim

DISK DOUBLER: $9.95 write enable notch punch for 5 1/4" diskettes.

This notcher has a metal case that will probably never break. The die, however, has four points, meaning that it punches through at two or four different places at the same time. This makes it hard to punch...you will either need to use two hands or set it on the table and hit it, maybe with a hammer. The four point die does give a very clean hole, never leaving any of the sleeve hanging. Average. Tim

CBM 1670 MODEM 1200: $179.95 1200 bips direct connect modem for the C64 and the C128. From Commodore. Package includes Common Sense and VT100 terminal software.

If you do much computing on line, whether with your local BBS or with a major national computer service, it is certainly worth buying a 1200 bips modem. That settled, the 1670 is, generally, pretty good. It connects directly to the Commodore user (RS 232) port, so you don't need any sort of interface, and has two jacks (in and out) for standard modular telephone plugs. An integral speaker lets you listen in - this is nice when you are dialing, and the modem mercifully turns off the speaker when it detects a carrier.

The modem accepts a subset of the standard Hayes (AT) command. Only three of the S registers are supported, the S0 (zero) register, to set which ring the modem will answer on; the S2 register, to set the escape sequence (+++ is standard); and the S7 register, which determines how long the modem will wait for a carrier when making a call.

The only problem I have encountered in several months use of the 1670 is that it defaults to answering on the first ring - even if you do not want it to. This means that if you have your computer turned on and the telephone line plugged in the modem will answer when somebody calls. While this might be useful in discouraging crank calls and over-interested mothers-in-law, it is generally not desirable. You can get around this any number of ways. One is to buy an in-line switch from Radio Shack that effectively turns off that particular line extension; another is to unplug the phone cord from the modem when you are not using it; and finally, you could open a channel and send a command to the modem every time you reset the machine. Commodore is supposed to be taking care of this problem with a revision to the modem this fall.

All in all, it is reasonably priced - for a 1200 baud modem - and works very well. It has two advantages over cheaper, generic 1200 baud modems like the Avatex [34:14], namely the speaker and that you don't need an RS 232C interface to connect it to your Commodore machine. As with most Commodore hardware, you can find it discounted well below the list price. Recommended. Tim

Editor's Aerie

Tim Sickbert

If you have not yet read Jim's Meanderings on page 1, please do so now. Did you catch that little bit about a book? Well, Jim is guilty of some minor understatement. Fact is, we intend to put together a fairly comprehensive compendium of resources for Commodore users. The book will include not only several hundred reviews from current and recent issues; it will also include lengthy lists of manufacturers, major vendors, services, and user groups. We hope to make it complete. For this we need your help.

It will be easy enough to find all the major manufacturers. The problem is with some of the smaller companies that provide specialty products. There are several hundred of these scattered around the country. How many of you heard of such companies as NuAge Software? Most of you probably have not; it is a small firm that we happen to to be familiar with.

The point is that you, as a user with your own special interests and with your own personal contacts, may have heard of or dealt with some small company that is producing a product for Commodore computers. Since we do want our index of manufacturers to be complete as possible, we would very much appreciate it if you - or have the manufacturers themselves - would send names, addresses, and business phone numbers along with a list of the software the company produces. While you are about it, if the product is any good, write a review! There is always a market for good software and we are more than happy to share such information.

While I am on the subject, we NEED your reviews. There are thousands of products out there for the C64 and there will soon be thousands for the C128. Midnite has a full time staff of two which - even with major contributions from Art Lewis Kimball, Robert Baker, Gary Fields, and all the others who regularly help out - cannot begin to cover the field. We are confident that you can give an honest evaluation of the programs that you regularly use; there is nobody who can review software and hardware better than regular users. Midnite started with reviews from users; Midnite has continued to publish reviews from users; Midnite wants to publish more reviews from users. Granted, the ten dollars we pay for each review is not a great deal of money, but we are not asking you to run out and buy software just to review it. We want you to review the software you use. And, we are glad to review high quality public domain or freeware software. How about it?

Getting back to the book: While we do want to list every resource we can find, we will NOT be doing the same for products. Anybody can read the back of a box or glossy advertisements. As always, the only products that will be mentioned will be those which we have published a review of. Our whole purpose is to give you some idea of the quality of a product, not merely announce its release or availability.

The book is still early in its development, so we are still open to comments about what you would like to see and what you would find most useful. Note that our book will NOT compete in any way with Karl Hildon's Anthologies. The **Transactor** does a much better job of covering the technical side of Commodore machines than we could ever hope to do. We intend to cover the user's, rather than the hacker's, side of the machine. [As a loose definition, a Commodore **hacker** is one who spends more time, in any given month, writing software or taking apart hardware, than running software. Likewise, a Commodore **user** is one who spends more time running, or trying to run, software, and may or may not know the difference between a CHRGET wedge and an error driven wedge.]

Which brings up yet another point: We do want to help share any information we can get our hands on that will make it easier for users. This information might include anything from something as simple as a '<SHIFT> <RUN/STOP>' at the end of a LOAD statement to automatically RUN a program or the CHR$(one can send to a 1670 modem to turn off the auto answer, to the undocumented print to disk feature in **Easy Script** or how to merge programs on the

C128. Such information usually comes only after weeks of use or hours of work. Jim and I cannot find it all. We need your input, your experience. With our roots still firmly imbedded in user groups, we are still firmly committed to the free flow of information. Collectively, you, our readers, know quite a bit. Share it.

Lincoln College Commodore Computer Camp

Report by Mike Stout

In July of this year, I was fortunate to have the opportunity to spend a week at the Lincoln Computer Camp. This made my third year in a row and it keeps getting better.

Students came from all over the U.S., Canada, Mexico, and Puerto Rico to enjoy a fun and very educational week. The usual big names, Butterfield and Immers, were there as instructors, and both lived up to their reputation as excellent teachers.

One of the most pleasant surprises was that the not so big name instructors were quality educators themselves. Steve Michel, Debra Landrey, Jim Grubbs, Doug Wall and Jim Tucker all did fantastic jobs that week. Combining these instructors with Butterfield and Immers produced the finest staff Lincoln College has ever assembled.

Lincoln College offered three different courses a day plus an evening session. This schedule made for a very busy day for all involved, but a very fruitful experience to say the least. The pace of the camp picked up considerably this year compared to past ones, but allowed students to get more for their tuition.

Classes at the camp covered almost every portion of our hobby. This year some new classes in telecommunications, robotics, and software applications were added. Preliminary reports lead me to believe that all three will be back next year.

All in all, this year's camp was Lincoln's best. By the second day of this six day event, most students were already talking about coming back next year. The enthusiasm of the campers was evident everywhere you looked. It will be very hard for Lincoln to improve the camp, but I'm sure they will find a way!

LETTER

Dear Sirs,

This is a letter sent today to Xetec. Do you have any comments or answers to any of my questions?

I have a Super Graphix between a Commodore 128 and a Star NX-10 printer with a Commodore 1571. I previously used a Star SG-10 with the same problems. I use the VizaWrite word processor. DIP switch settings used are: Device 4; Printer, SG-10; Mode, Transparent. I hope you can help me with several problems I have.

I can load the "super" fonts, but I cannot get them to work. I get continuous form feeds (with the form feed toggled off on the VizaWrite) and a few characters of garbage on each sheet. As you can see, the "normal" fonts work almost perfectly. I cannot shift into the compressed mode using the various suggested ESCape codes.

I do a lot of writing in French. My main question is about the ESCape codes. I cannot get the escape codes to work so that I can shift fonts in the middle of a letter. Also, I have modified a font to print French characters but cannot backshift to put accents over certain letter. I have tried several secondary addresses as noted in page 18 of [the Xetec] manual.

Do you offer your Utility Disk to run on the C128? I'm fast forgetting how to C64er it.

What is the "special" font? All I get are very sharp graphic symbols.

For your information I get very good printouts from CP/M using either of the ASCII conversion modes. I don't get a linefeed between each line of text, and I am able to use the fonts.

I am very happy with your product [Xetec Supergraphix printer interface] and would recommend it to anyone.

Sincerely yours,
J. Roquemore.

Can anybody help with this? We would be happy to print any helpful responses. Ed.

C128 QUIRKS

by David Blezard

In issue #31, I told of the possible effects of doing a list in INSERT (<ESC> A) mode on the C128. I have since discovered that this can be used to merge program lines together.

Two lines can be joined by listing the second line and deleting the line number on the screen. Then, place a colon (:) at the start of the line. Now, move up to the line that the LIST command was typed on. Replace the line number of the line listed with the number of the first program line. Now go into insert mode with an '<ESC> A' and then <RETURN>. Finally, delete the second of the two lines that were merged.

Here is an example to help clarify things. First, enter the following two lines:

```
10 PRINT "HELLO"
20 GOTO 10
```

Now, clear the screen and 'LIST 20'. Then, move the cursor to where line 20 is on the screen, and use the <DELETE> key to erase the '20' at the beginning of the line. Insert a colon so the line looks like

```
:GOTO 10
```

Hit the <HOME> key to move the cursor to where the LIST command was typed. Change the 20 to a 10. Activate the automatic INSERT mode with an '<ESC> A' and hit the <RETURN> key. Lastly, delete line 20. If you list the program, it should now look like:

```
10 PRINT "HELLO": GOTO 10
```

This technique can be very useful for program crunching, especially since the C128 can have lines up to 160 characters long. Multiple lines can be done at once by repeating the process. Take note that some lines such as those containing IF...THEN statements or other branching statements cannot always be merged without causing problems.

C128 PROGRAM MERGE

found by

Jim Butterfield

Mr. Butterfield put a message on **Quantum Link's** C128 message base telling how to merge two program files, and was kind enough to demonstrate it when he came to Champaign to speak to the local users group.

Merging two programs is a relatively easy process on the C128, and it does not require any special utilities or hardware. All you need to do to merge 'PROGRAM 1' and 'PROGRAM 2' is:

```
DLOAD"PROGRAM 1"
DOPEN#8,"P1",W
CMD8:LIST
DCLOSE#8
NEW
:
DLOAD"PROGRAM 2"
DOPEN#8,"P1"
SYS(DEC("FFC6")),0,8,0
wait until things calm down
SYS(DEC("FFCC"))
DCLOSE#8
```

This will give you a fully merged, ready to run program. It is easy, relatively quick, and you cannot beat the price. Many thanks to Mr. Butterfield for finding this feature, and for all the work he has done over the years to make things easier for all Commodore users.

If you have any tricks, tips, or undocumented features of any of Commodore's PET line of computers, please send them in!

DATA BUILDER

By Robert W. Baker

Here's a handy utility program for all Commodore systems. Although written for the PET and CBM systems, it will run on the VIC-20, Commodore-64 and Commodore-128 as well. The program was designed to read a machine language program from disk and create a BASIC program on disk with the same machine language program converted to DATA statements. It also adds a FOR-NEXT loop with the correct parameters to read

the data and poke it into memory. Now you have a very easy way to get machine language programs into a form that can be merged with a BASIC program.

When this program runs, it first asks for the filename of the machine language program to be read and converted (lines 210-260). The machine language program must be a standard, loadable program file. It cannot be any kind of intermediate file created by an assembler. If you use an assembler to create the machine language program, you can load it following normal procedures then use an available monitor to save it onto disk as a program file. Once it's saved as a program file this program can be used.

After getting the machine language program's filename, this program prompts for the name of the new BASIC program to be created (lines 260-310). There cannot be any file on disk already using this name. If either file cannot be opened, an error message is displayed and the program terminates.

Note that the OPEN commands in lines 250 and 300 open a program (P) file for read and write respectively. This cannot be done with the BASIC 4.0 or 7.0 DOPEN command. The standard OPEN command must be used as shown. You probably won't find this in the Commodore documentation, but you can open and use program files just like sequential data files. Just keep in mind that the first two bytes of a program file specify the load address, indicating where the program will be loaded in memory.

Once the appropriate files are opened, this utility first reads and displays the load address of the machine language program (lines 330-370). When the program file is opened for reading, the first two bytes read are the load address in 6502 format (lo-byte/hi-byte). Thus, the address is converted to it's decimal value by adding the first byte (the lo-byte) to 256 times the second byte (the hi-byte).

A load address of 1025 is then placed at the start of the BASIC program being created with the PRINT#2 in line 390. The 1025 value is the standard load address for all BASIC programs on the PET and CBM systems. If you have a VIC-20, Commodore-64 or Commodore-128 system, there's no need to change this value since the BASIC loader will properly relocate the program when it's loaded on these systems. Thus, this value works for all Commodore systems.

After knowing the starting address, the utility program enters the main loop that reads a byte from the machine language program (line 410), gets the decimal value of the byte (line 420), and adds the data to the current BASIC program line being constructed in L$ (lines 430-440). The byte count for the length of the machine language program (NB) is also incremented.

The length of the BASIC program line created is checked in line 450 to see if more data can be added. If there's still room for more data on the same line, the program returns to line 410 to read the next byte from the machine language program. Otherwise, the subroutine at line 580 is called to add this line to the BASIC program being written on disk. After writing the line to disk, the program returns to line 400 instead of line 410 to place the DATA token (131) at the start of the BASIC line.

The subroutine in lines 580-610 adds the length of the line in L$, plus the five byte overhead for every BASIC line, to a pointer in LK to compute the link or starting address of the next BASIC program line. The two byte link value is written to the BASIC program file followed by the two byte BASIC line number from LN. The actual line from L$ then follows, along with a zero byte end flag to indicate the end of the BASIC program line. Another subroutine in lines 620-630 is used to convert the link address and BASIC line number into two byte 6502 address format and write them to the BASIC program file.

When the utility program reads the last byte of the machine language program file and detects the end of file, any remaining data will be output to the BASIC program file (lines 470-480). The status from ST is saved in SS after every read to the machine language file. This value will be 64 when the end of the file is reached.

After all data has been written to the BASIC program file, a BASIC FOR-NEXT loop will be created in L$, inserting the length of the machine language program as the loop count and the load address read used as the poke offset address (lines 500-540). This program line is then written to the BASIC

program file along with a zero link (two bytes, both zero) to indicate the end of the BASIC program created. Before closing all files, the utility program indicates the length of the BASIC program created.

I've included a short example of the type of program the utility program might create. Note that the line numbers of the BASIC program created start at 10 and increment by 10. If you want to change the starting line number, simply redefine the value of LN in line 180 as desired. Likewise, changing the value of LI in line 190 will change the increment between line numbers.

As I mentioned earlier, the program creates BASIC program lines limited to 78 or fewer characters when displayed on the screen. This allows you to use the screen editor to change the lines if necessary. If you want to compact things and don't care about not being able to edit lines, you can change the test value in line 450 from 65 to 250. The larger value will cause the utility program to create the maximum length program lines that BASIC can handle. The lines can be displayed but cannot be edited!

As usual, I'll supply copies of this program on disk for $5 to cover costs. I'll take care of the disk, mailer, and first class postage.

```
100 rem ******************************
110 rem
120 rem     d a t a   b u i l d e r
130 rem
140 rem       by: robert w. baker
150 rem
160 rem ******************************
170 :
180 ln=10: rem starting basic line number
190 li=10: rem line number increment
200 :
210 print"[CLR]machine language pgm"
220 print"to be converted is -": print
230 input f$
240 open 15,8,15
250 open 1,8,5,"0:"+left$(f$,16)+",p,r)"
260 input#15,en,em$: if en<>0 then print"disk error
-";en;em$: goto 650
270 print: print"basic pgm to be built"
280 print"should be called -": print
290 input f$
300 open 2,8,6,"0:"+left$(f$,16)+",p,w"
310 input#15,en,em$: if en<>0 then print"disk error
-";en;em$: goto 650
320 print: print"ok,": print"building new pgm file":
 print
330 get#1,c$: if st<>0 then 640
340 ad=0: if c$<>"" then ad=asc(c$)
350 get#1,c$: if st<>0 then 640
360 c=0: if c$<>"" then c=asc(c$)
370 ad=ad+(256*c): print"starting address =";ad: pri
nt
380 lk=1025: nb=0
390 print#2,chr$(1);chr$(4);
400 l$=chr$(131): rem "data" token
410 get#1,c$: ss=st: if ss<>0 then 470
420 c=0: if c$<>"" then c=asc(c$)
430 if len(l$)>1 then l$=l$+","
440 l$=l$+mid$(str$(c),2): nb=nb+1
450 if len(l$)<65 then 410
460 gosub 580: goto 400
470 if ss<>64 then 640
480 if len(l$)>1 then gosub 580
490 if nb=0 then 650
500 rem following lines create a basic line
510 rem for x=0 to ...:read c: poke...+x,c:next
520 l$=chr$(129)+"x"+chr$(178)+"0"+chr$(164)
530 l$=l$+mid$(str$(nb-1),2)+":"+chr$(135)+"c:"
540 l$=l$+chr$(151)+mid$(str$(ad),2)+chr$(170)+"x,c:
"+chr$(130)
550 gosub 580: print#2,chr$(0);chr$(0);
560 print"length =";nb+1;"bytes": print
570 print"done conversion": goto 650
580 l=len(l$): lk=lk+5+l: x=lk: gosub 620
590 x=ln: gosub 620: ln=ln+li
600 for x=1 to l: print#2,mid$(l$,x,1);: next
610 print#2,chr$(0);: return
620 x1=int(x/256): x2=x-(x1*256)
630 print#2,chr$(x2);chr$(x1);: return
640 print: print"disk error,": print"program aborted
"
650 close 1: close 2: close 15
```

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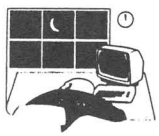

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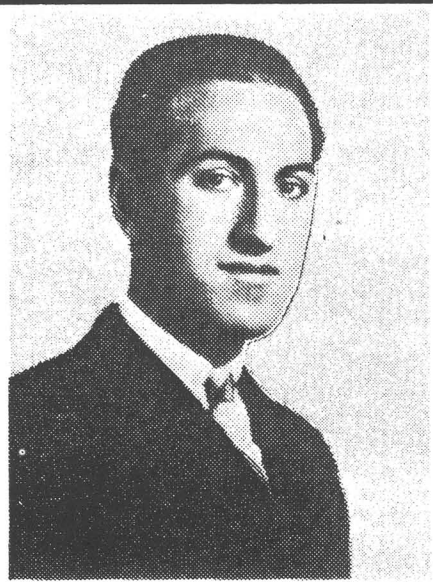

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