TANDY

The CoCo Column

by Dan Robins

In the past month, more CoCo enthusiasts have begun using Multi-Vue, the new graphics-oriented addition to the OS9 Level 2 operating system. A major design flaw discussed lightly in last month's article is fixed in this article. Also, a continuation of our look into what makes the CoCo tick and reviews of new software, including an update to one of our favorites which was recently purchased by a new company.

Fixing Multi-Vue

In last month's article, we briefly touched on a design flaw that was discovered in the Multi-Vue system (and in particular, the GSHELL program). Although it didn't occur to 100% of the time, many reports were circulating about how the computer stopped operating when the system looked for AIF files that did not exist.

The AIF (Application Information File) file problem exists when you have a file whose name ends with a "dot and three letters" (an example might be ".BIN" or ".VEF"), and no AIF file exists for that particular extension. Normally, when the system runs across a file name and no AIF file, it will display a default ICON. Such was not the case when the system came across the problemed extensions. It was learned later that the system would also crash if more than 255 filenames were contained in one certain directory.

Our thanks go to Kent Meyers of LeRoy, Minnesota, who spent many hours figuring out what caused these problems, and for providing a fix which corrects these design flaws. Using the MODPATCH module on your original OS9 Level 2 system disk and typing in the file shown in Figure No. 2, the bugs of the Multi-Vue system will be a thing of the past.

Inside The CoCo

Having covered the pinout design and the register of the 6809 processor chip, next we take a look at sample program and how it affects the registers of the computer as each instruction is carried out.

Looking at Figure No. 1, you'll see how each of 6 registers (the stack registers are NOT covered in this example) are affected by each instruction. Additionally, we have included the OP-CODE for each instruction which appears to the left of the instruction area.

Instruction 1. LDA #$41. The "LoaD A" instruction will take the 8-bit hexadecimal value of #$41 (decimal 65) and put it in Register A. This example is called an Immediate Address of the Register A.

Instruction 2. LDY #$400. The "LoaD Y" instruction will take the 16-bit hexadecimal value of #$0400 (decimal 1024) and put it into Register Y. This example is called an Immediate Address of Register Y.

At this point, we could perform a different type of addressing, available to the 6809 microchip. Since we have a byte in Register A, we could store it at the memory location which is in Register Y. In this particular case, the value of #$41 is the ASCII equivalent of the letter "A." The address in Register Y is the same as the top/left memory location of your 32 column screen. So let's make the letter "A" appear there.

"STA ,Y" would be the command to accomplish this. The "STore A" instruction will "store" the byte in Register A to the memory location "pointed to" in Register Y. The use of the comma (" , ") next to the register name (Y in our case, also allowed are X, U, and S). This type of addressing is known as "Indexed Addressing."

Instruction 3. LDB #$07. The "LoaD B" instruction performs just as the LDA command, except that it stores the value in the B Register. We have loaded this register in preparation for our next instruction.

Instruction 4. MUL. This is the multiplication instruction for the 6809's instruction set. It takes the value in Register A and multiplies it by the value in Register B. Next it places the result in Register D. Keeping in mind that Register D is equal to the most significant byte in Register A and the least significant in Register B. So the values you had in the A and B Registers will no longer be there, but the result of the multiplication.

Instruction 5. CMPD #$01C7. This is the "CoMPare with D" instruction. In this example it compares the value in Register D with the value that follows in the instruction. Since Register D does contain the value of "#$01C7," the result of our previous multiplication, the appropriate flags of the CONDITION CODE REGISTER will be turned on. In Figure No. 1, you can see which flags have been turned on. The Half-Carry, Negative, Zero, Overflow, and Carry flags are affected in this example.

"BEQ XXXXXX" could have been the next command. In this example, since Register D was equal to the value, the "Branch if EQual" instruction would have taken the program to the labeled area named "XXXXXX." The "BEQ" instruction will take a look at the ZERO flag in the Condition Code Register and if it is set on, it will transfer program control to the address of the program labeled by the name that follows the instruction.

In the next CoCo Column in the *Computer Shopper*, we'll delve into the area of your CoCo and the cassette recorder interface.

Reviews And News

Every once and a while, I refer to the earlier years of the Color Computer. It was quite interesting, because the "computer age" was somewhat still in it's infancy when the first CoCo was available for sale. Your software library consisted of the programs you (or some of your friends) had put together. As we are seeing with the Color Computer 3, a certain time period exists after a computer's release and when major applications hit the market for sale.

One of the first major software series available commercially to Color Com-

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Fig. #1 — Assembly Language And 6809 Registers

REGISTERS:	A	B	D	X	Y	efhinzvc
*Load Register A with Hex $41						
86 41 lda #$41	$41	$00	$4100	--	--	N/A
*Load Register Y with Hex $0400						
10 8E 04 00 ldy #$0400	$41	$00	$4100	--	$0400	N/A
*Load Register B with Hex $07						
C6 04 ldb #$07	$41	$07	$4107	--	$0400	N/A
*MULTIPLY - Reg. A x Reg. B = Result in Reg. D						
3D mul	$01	$C7	$01C7	--	$0400	N/A
*COMPARE Register D with Hex $01C7						
10 83 01 C7 cmpd #$01C7	$01	$C7	$01C7	--	$0400	00101111

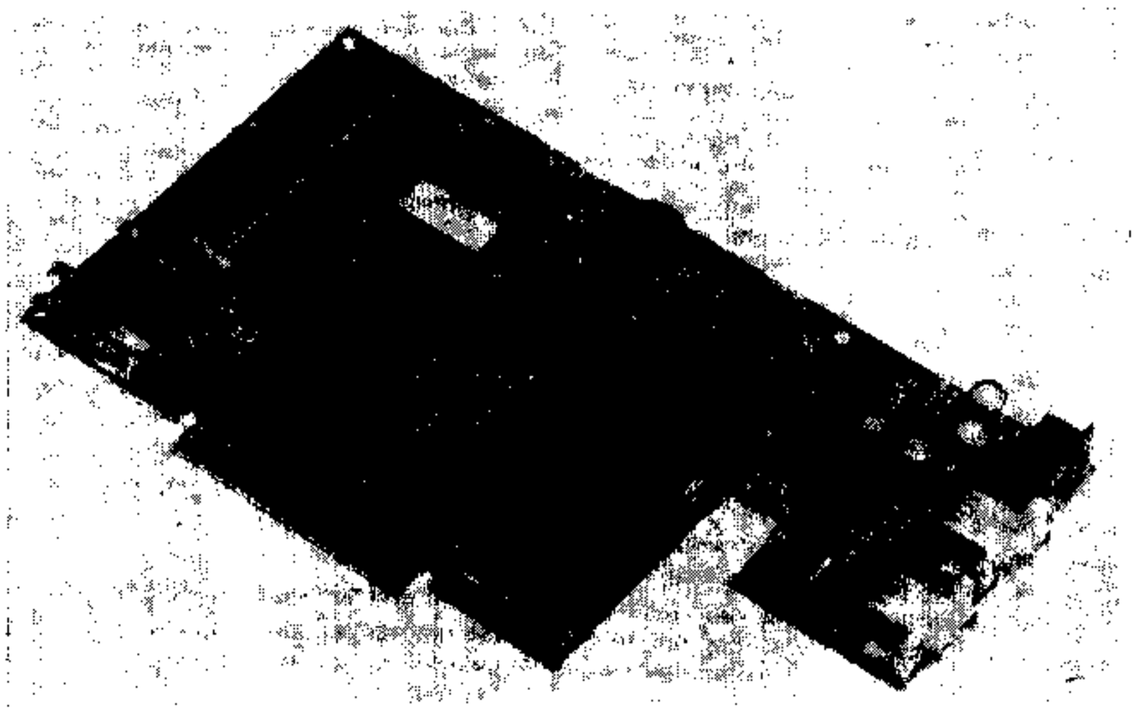
Fig. #2— Multi-Vue Bug Fix
From Kent Meyers-LeRoy, MN

Use the MODPATCH program and this script to fix the bugs with GSHELL

```
1 gshell
C 117D 42 2C
C 1838 32 16
C 1839 64 1D
C 183A 0C CC
C 18CF 32 16
C 18F0 62 1D
C 18F1 0A 21
C 3607 EC DC
C 3608 62 3D
C 3609 E3 C3
C 360A A9 00
C 360B 05 01
C 360C 8D DD
C 360D 25 3B
C 360E 21 32
C 360F 1B 64
C 3610 A3 1F
C 3611 A9 E2
C 3612 B5 29
C 3613 BF DC
C 3614 24 3B
C 3615 1A 83
C 3616 34 00
C 3617 B6 01
C 3618 AE D0
C 3619 A9 3B
C 361A B5 32
C 361B 8D 62
C 361C 4F 1F
C 361D BC E2
C 361E E4 D4
V
```

TEXAS INSTRUMENTS

The Geneve 9640 From MYARC



by Walter Howe

The MYARC Geneve 9640 is a fast, up-to-date home computer that is upwardly compatible with most TI-99/4A software and hardware. In hardware capability, speed, graphics, and price, it stands favorably alongside the Atari STs and Commodore Amigas. It offers one major advantage that the Atari and Commodore computers could not offer when they were first introduced. It will run nearly all the software that its predecessor ran, so that buyers who already have a TI-99/4A software library start with an established usable software base. It has the hardware capability and operating system to take its place with modern business systems in the office, but lacking substantial business application software, the latter can remain no more than a distant possibility. MYARC, a small New Jersey company, fulfills a promise that diminishing numbers of 99/4A supporters have been awaiting expectantly for years.

Background Of The 9640: Its Predecessors

The TI-99/4A from Texas Instruments brought millions of households into the computer world. It's sales, up until TI's abrupt 1983 exit in the wake of huge losses, were second only to Commodore in the home computer market. TI's marketing techniques have been the subject of many debates, and whether or not a different strategy could have succeeded, TI certainly succeeded in selling a lot of computers.

The original 99/4 console came with a 32-column display, 16K of memory, a very slow and limited resident BASIC language, an atrocious chiclet keyboard, and was bundled with a composite color monitor. The succeeding 99/4A separated the monitor from the pur-

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TEXAS INSTRUMENTS

The Geneve 9640 continued from page 206

chase, enabling use of the system with a TV set. The chiclet keyboard was replaced with a three-quarter size 48-key model that a touch typist could use, if somewhat grudgingly. A much improved Extended BASIC was made available through a plug-in cartridge.

Support for assembly language programming was released. Pascal, Forth, and LOGO were made available. A peripheral expansion box with room for eight cards was added. Memory cards, RS-232 cards, a disk controller for single density drives, and a P-system card came along in turn. A well-developed word processor, TI-Writer, was released with a 40-column display and Microsoft's Multiplan followed. A modem, a terminal emulator, and a speech synthesizer were added to the inventory.

While this was going on, TI was looking to the future. A 64K machine was developed known as the 99/8 or the Armadillo, which TI would probably have released in 1984, had the business profited. None of the 99/8s were sold, but a number remained in the hands of TI employees. One of those who ended up with a 99/8 was Lou Phillips, now the head and brains of MYARC.

In the years following TI's pullout, many of the unexpanded consoles ended up on the closet shelf. Some owners, particularly those who had added on to their systems, stayed with the 99/4A. either because it met their immediate needs and interests or because they saw a lot of undeveloped potential in the computer. While programs written in the doubly interpreted BASIC were slow, assembly language programs showed off the full power of the 99/4A.

A mainframe style assembly language with relocatable registers made sophisticated programming possible. The remaining market was large enough for a number of companies to stay with the 99/4A producing new hardware and software. The once closely held secrets of the 4A's architecture and its operating system were solved and put to use by commercial companies at home and abroad and by a number of talented hobbyists.

MYARC did their part to modernize the TI-99. They produced a double-density disk controller and later an 80-track version. They produced a hard disk controller, soon to be replaced by a new hard disk controller card for the 99/4A and 9640. They produced their own RS-232 card. They added 128K to 512K RAMdisk cards. They developed a new Extended BASIC II written in assembly, which runs much faster than TI's Extended BASIC.

The Coming Of The 9640

From their perspective as a regular supporter of 99/4A owners, MYARC saw a community ready to support a new, more modern computer that would be upwardly compatible with 99/4A software and much of its peripheral hardware. The plans to produce a new computer were announced by MYARC at the Chicago TI Faire in November 1985.

Little noticed by the rest of the computer world, 99/4A supporters watched every move that MYARC made for the next year and a half as the computer came closer to release. It was designated the 9640—the 9 was an acknowledgement of the 99 series and the 640 represented the 640K of memory to be built into the computer. The memory later grew, but not the model number. The name Geneve came from a travel poster in Lou Phillips' stairwell. Wire wrap prototypes were demonstrated at various TI Faires around the country as the 9640 came closer to production. Every success brought cheers; every delay or failure of a fragile wire wrap device brought out the critics. Finally, the first production models were released in May 1987 and shown at the Ottawa TI Faire.

The first models released, like the Atari STs and the IBM O/S2s, came with a lesser operating system and the promise, now fulfilled, of a much improved later version. The first operating system did little more than load a look-alike to the 99/4A's operating system, called the TI mode or GPL mode. It enabled users to run their older software and see how much faster it would run on the 9640. 80-column enhancements were provided to the 99/4A's excellent TI-Writer word processor, and Microsoft's Multiplan for those who owned it. The word processor, taking advantage of code that TI had released to the public domain, had substantial new features added to it, and it was renamed MY-Word. Both of these enhanced versions run from the 9640's TI mode. While these are far from the most modern word processors and spreadsheets, they had the distinct advantages of being well known, functional, substantially improved and available for immediate use.

MYARC also included a system for dumping the 99/4A's plug-in cartridges to disk to enable them to run on the 9640. They further promised that a new Advanced BASIC for the 9640 would be completed and sent to all buyers along with an adaptation of the UCSD P-system from Pecan Software. Since TI had sold a P-system card for the 99/4A, this would support the interests of P-card owners, and offer to all an entry to the many programs written for Pascal, Modula II, Fortran, Lisp, and Pilot under the P-system.

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The GENEVE 9640 by MYARC, Inc.

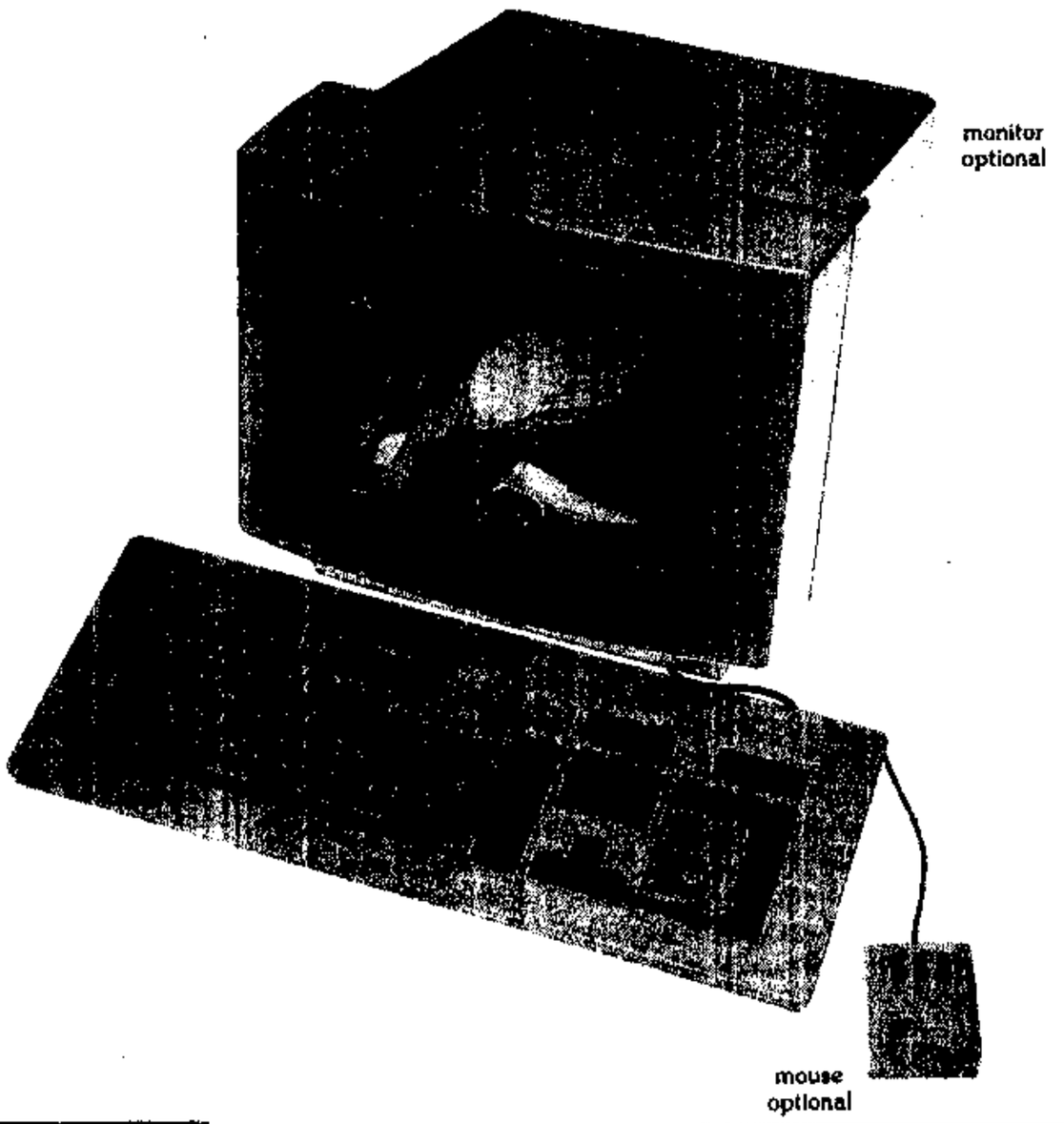
a complete upgrade system for the TI99/4A

Features include:

- 640K RAM, expandable to 2MBytes with optional memory expansion cards
- Real time Clock with day, date, and battery backup
- 32K High Speed no wait state static RAM, upgradeable to 64K
- V9938 Advanced video processor with 7 graphics modes, three are VGA comparable
- Up to 256 colors displayable on the screen simultaneously
- Interface for the optional MYARC Mouse and support from Advanced Basic
- Built in sound chip with three tones and one noise
- TMS9995 CPU, 12MHz clock and pipeline "U" processor, for the speed of a 80286 AT
- Compatable with MYARC, TI and Corcomp floppy disk controllers and RS232 cards
- Standard TI99/4A Joystick compatable
- Hard Drive compatable with the MYARC Hard & Floppy Disk Controller with streamer tape backup support

Software included:

- MYARC-DOS with commands similar to MS-DOS, but as advanced as OS/2
- Cartridge Saver Program to save cartridges to diskette
- MY-Word Processor with 80 column by 26 line display and compatable with TI-Writer files
- Microsoft Multiplan upgrade with increased memory and speed plus 80 column by 26 line display
- MYARC Advanced Basic, 80, 40, and 32 column support, the fastest and most advanced on the market, plus MYARC and TI-Extended Basic compatable
- UCSD PASCAL version 4.22 run time, allows the loading and running of thousands of standard PASCAL programs, such as FORTRAN 77 and COBOL
- MYARC GPL Interpreter loads and runs cartridges saved to disk at a comparable speed to the TI99/4A or over three times faster



monitor optional

mouse optional

For details on the complete GENEVE 9640 system phone MYARC, Inc. (205)854-5843 or write for a free brochure to, P.O. Box 140, Basking Ridge, NJ 07920

TEXAS INSTRUMENTS

The Geneve 9640 continued from page 207

The 9640 computer consists of an enclosed card, which fits in a slot in the expansion box, and a keyboard. The card contains the 16-bit TMS9995 12MHz microprocessor chip, the 9938 video processor chip, a battery backed clock chip, the SN76496 sound processor chip, a custom gate array, 512K of one wait state RAM, 128K of video RAM, and 32K of high speed, zero wait state RAM. A 16Kx8 EPROM contains the boot software which looks for an operating system file in RAMdisk, hard disk, or floppy disk in turn. MYARC will probably soon offer the operating system in a 128Kx8 EPROM. The operating system file occupies 90K on disk.

The four-voice sound processor chip is identical to the one in the 99/4A, insuring full compatibility. The Yamaha V9938 video display processor system provides 128K of VDP RAM expandable to 196K and 7 different display modes featuring up to 512 colors and up to 512 by 400 resolution. The display modes include the modes offered by the TI-99/4A's 9918 video processor. For the high resolution modes in full color, it requires an analog RGB monitor. I am using an Amiga 1080 monitor, which works very well, except that there is a perceptably annoying flicker in high resolution interlace modes. Anyone who anticipates a need for the full 400 line vertical interlace resolution modes in color should consider buying a high persistance phosphor monitor to overcome the flicker. Monochrome monitors can, of course, be used if the primary applications are text oriented. Composite color monitors are also supported, but the 80-column text display, while readable, is not something you would want to spend much time with.

The 512K of RAM can be expanded through one or more external cards to up to 2 megabytes. MYARC's present 512K cards can be converted to run with the 9640 as add-on memory, and MYARC plans to introduce a 1.5 megabyte card to expand to the full memory capacity in one step. A particularly useful feature is that available RAM can be partitioned to act as RAMdisks and print buffer through commands in an AUTOEXEC file called when the system boots.

After initially offering 84-key and 95-key optional keyboards, MYARC has recently upgraded to a 101-key version as the new standard. It offers 12 function keys, a numeric keypad, and a cursor and word processing function keypad, similar to IBM AT-type keyboards.

In the rear of the card, which extends from the back of the expansion box, are four ports. These provide the connections for the monitor, the keyboard, a mouse, and joysticks.

The standard MYARC mouse, available separately, is a well-designed three button mouse with a non-standard connector. MYARC includes a good color art program, MY-Art, as an added inducement, with the purchase of the mouse.

The joystick connector is identical to the one used for the 99/4A. This is not the standard joystick connector used by other computers. MYARC decided to stick with the 99/4A connector, even though the TI joysticks are particularly poorly designed. Fortunately, better joysticks can be used, and the adapters are readily available. Joysticks are not included, and they are not likely to receive much use in new software anyway. Most applications for joysticks are likely to come from older 99/4A software.

The MYARC Disk Operating System: MDOS

MYARC's Disk Operating System, called MDOS, is a major feature of the 9640. It is deliberately written to look like MSDOS, although the program is completely different. It offers all the applicable commands of MSDOS, version 3.2, and more. In mimicking MSDOS, it often improves on the MSDOS commands. For example, the TYPE command, used to view a text file, allows you to view a page at a time, unlike MSDOS. Due to disk architecture which TI established with the 99/4A, directories are always displayed in alphabetical order. I use MSDOS on the job, and I find I greatly prefer the alphabetical listing to the order-in-which-they-appear listing of MSDOS. I can create an alphabetical directory in MSDOS by piping it through a sort routine, but then I cannot readily use paged or brief directory forms. Like MSDOS, simple commands enable disks and files to be copied, checked, compared, erased, protected, unprotected, run, read, and even written. Files can be copied to other files or to other devices. Text files can be created by "copying" them from the keyboard to a disk file. MDOS offers many more applications than a simple disk manager program does.

MDOS further includes many routines that can be called upon and used by other programs. These extend beyond disk and file management routines to include support for graphics and colors, windowing, screen scrolling, math functions, running other devices, and memory management. The 9995 chip, like the 99/4A's 9900 chip, has an immediate address space of 64K. Unlike the 99/4A, the 9640 with MDOS makes addressing many times the space quite easy for programmers. 8K pages of memory can be paged in and out of the 64K address space at will. The user has ready access to the full 672K of the system or 2 megabytes when fully expanded.

Replacing The 99/4A With The 9640

To make the 9640 attractive to as many 99/4A owners as possible, MYARC adopted a policy of supporting existing 99/4A peripherals from most manufacturers. For an initial expenditure of around $500, the 99/4A owner can modernize while continuing to use his previous drives, cards, monitors, printers, modems, etc. To piece together an all-new, minimally configured system more than doubles that price.

Three companies made floppy disk controllers for the 99/4A: TI with its single density controller, MYARC, and the West coast based CorComp. It was a challenge to make MDOS compatible with all three controllers, which were designed quite differently, and it shows in floppy disk operations. While disks are read very fast, writing to disk is somewhat slow in comparison. TI's first drives were single-sided, single-density full height drives from Shugart and others. Many 99/4A owners still own these, but others have modernized to fast DSDD half-heights and 80-tracks in both 5-1/4 and 3-1/2 inch drives. Both the MYARC and CorComp controllers have provision for setting the head step times of drives with dip switches on the card to accommodate this range of devices. Because many owners still have the older SSSD drives, SSSD has been retained as the standard for commercial software, with the minimal 360 sector, 90K floppies. MDOS itself was designed with that 90K limitation in mind.

At this early stage, while a great deal of 99/4A carryover software exists, little software exists exclusively for the 9640. MYARC released their MY-Art program mentioned previously, and several fairware programs have started to appear from the hobbyists. Up to now, it has appeared to provide a better return to developers to write programs that will run on both the 99/4A and the 9640 than to write programs that can really take advantage of the 9640's much greater capabilities, although that should change quickly now. Rewriting existing software to take advantage of MDOS utilities and greater memory space is not just a matter of simple patches. It requires a substantial rewrite. Software development is in progress by some of the smaller companies that have supported the 99/4A, but larger software companies have shown little interest so far. The 9640 will have to prove itself in the marketplace before larger companies will put effort into software development. In turn, the 9640 will have a very difficult time finding a place in the market for anything but former 99/4A owners until there is substantial soft-

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COMMODORE

GeoSynch continued from page 210

background. For most purposes, white is amost suitable here.

Conclusion

GeoFile's internal security at times locked my keyboard. It seems BSW's most sensitive application program in this regard. Once, I misclicked a wrong sub menu box and suffered frostbyte. I powered down, reloaded GEOS, then opened the File data disk and validated it. I re-opened the DB, closed it to update the files on disk, and finally reopened it. Damage inflicted: zero, none, zilch. No major bugs, just a sensitivity to user error.

An unexpected plus: DB files are relatively compact. Fifty pages of window-filling data took up only 12K bytes on my disk. Simple math suggests a data-base of 500 + entries should be possible for single drive users, if the Master Page is kept simple.

I ran into trouble printing mailing labels and index cards—two other nice features—until I reworked my sub layouts created for those purposes. Make data fields and spaces between them thin to fit those one-inch labels.

Finally, after Manager and Superbase I found geoFile flexible, easy to learn, and a breeze to use. In all, a good performer.

Did it win me over? Well, I transfered my original data-base (100 plus names) to geoFile but still keep a back-up file on another disk, and a back-up "back-up on Manager." I don't yet feel 100% secure with geoFile; you'll hear the final score after a couple more months of working with it. But for now, I give it an 8.2 out of 10.

Down the road I'll respond to the letters and geoGoodies I've received, but please keep letters brief or I'll pare excess verbiage.

I'd like to thank in advance Peter and Paul Hughes for their quick response in shipping me back issues of *Geoworld* magazine—a must for every serious geoUser, and Skip Goetzinger of Pro-Mark for the moutain of Laser Direct material.

Speaking of Peter and Paul—these nice people also sent a disk crammed with geoGoodies, and two disks of downloaded MacPaint files, which he then converted to geoPaint with MacgeoPaint 1.1, by J. Hastings-True—and they're wild!

Flash from the Rumormill: BSW is currently looking into designing GEOS for Amiga and Apple machines. I'd say more but that's all I know now. Check out the monthly GEOS Forum on Q-Link to join us well-informed rumor-mongers.

Error...error... In my geoPublish review last month, I stated the geoLaser driver drives the Apple LaserWriter for geoPublish. Nope. I overlooked the green card in the box that I'm supposed to send in for a FREE(!) geoPubLaser driver disk. The driver wasn't ready when shipping started... mea culpa.

Next item, we take on BSW's WYSIWYG geoSpell, geoFont, and try again for Laser Direct, laser printing on QuantumLink. From Berkeley Softworks: GeoFile, $49.95.

Questions, comments, and letters to: this magazine, or me at 7331 Hearthstone Way, Indianapolis, IN 46227. On Q-Link, send E-mail to: Geodeamon.

GeoFile and other GEOS products are available from Berkeley Softworks, 2150 Shattuck Avenue, Berkeley, CA 94704, 415-644-0890, 9am-5pm, Pacific Time. ●

More Commodore on page 216

COMMODORE

Getting The Most From Your C-128

by Patrick A. Tillery

Last July I wrote a detailed review of Sylvia Porter's Personal Finance Series (SPPF) for the C-128. I like the program and said so. But I did point out a few short-comings hoping that Timeworks would take the hint. They did, plus they added a few more goodies. I just received my copy of the latest version and it is good! The first thing you notice are subtle differences in the screen. The screen is the same, but the font is slightly different. I wonder why they went to the trouble?

The important points, though, are first, the program still switches to Fast mode as it loads, and I still don't know why Word Writer 128 doesn't. SPPF now supports the 1581 Disk Drive and the program is unprotected so you can copy it to your 1541, 1571, or 1581 (more on that later). And, Hallelujah!, it supports the expansion module! New HELP windows have been added, and the pull down windows automatically drop when you select them. All of these things add up to more speed and convenience and are worth our attention. Let's take the improvements one at a time.

The HELP windows drop automatically as you select them, but the new Help Windows are perhaps more exiting. Your "Chart of Accounts," or expense/income categories with their index numbers, are there for the asking (just push the Help key). You formerly had to print them and then refer to a piece of paper, as you entered data. There is also a HELP window for your Account ID. If you are keeping up with several checking accounts, for example, with the touch of the Help key you can bring up a list of them with their assigned number. These are handy features, but the best is yet to come.

One of the things I suggested in the previous review was a faster way to enter the data that doesn't change, or that increments. For example, in the old version you had to enter the Account ID for each check, even if you only had one account. Now SPPF will repeat what you used on the last operation when you push F2. This also applies to the "Ref #" or check number but it increases by one each time so that if you are entering checks in order, all you have to do is hit F2 and return. If you hit F2 in the date window, it repeats the last date you entered. You will be surprised how much these simple little improvements speed things up.

I was disappointed that they didn't give us a quicker way of moving about in the Add or Reconciliation windows. You check off your checks in chronological order when reconciling your acount. The window comes up at the last one entered, so you have to slowly, one check at a time, go back to the first check to start. A "Page-up" key or a GOTO TOP command would be very handy!

Perhaps the best improvement is Timeworks' use of the expansion module. If SPPF detects the presence of an expansion module it presents you with a window that asks you which modules (Transaction, Budget, Assets/Liability, Income and Balance Sheet or Financial Planner) you want copied to the expansion module. Your answer is written to the program disk, as is the printer configuration, so you must leave the write-protect tab off the first time you use it. It takes a while to copy the programs to the expansion module, but it is worth it, because with it you can move from one module to the other, as fast as you can change your data disk. Before the expansion module, you had to load in a separate program for each of the modules.

Timeworks has removed the copy protection and expects and recommends that you make back-ups. They put this program, like all their others, on single-sided disks for those people who haven't upgraded their 1541 drives to 1571 drives. This means that about half way through copying to the expansion module, you must turn the program disk over. If you are going to make a back-up anyway, why not make it double-sided so you won't have to stop and turn it over. If you agree, do it this way: 1. Format a new disk double sided. 2. Next, use the "Autoboot Maker" on your "1571 Test/Demo" disk that you received with your disk drive. For the program name use "SP1.START" and it is a BASIC program. 3. Use Uni-Copy from the same Test/Demo disk and file copy the front side of SPPF to the new disk. 4. Without turning the new disk over, file copy the second side of SPPF to the new disk. Don't try to copy "SP1.START" and the version number file (mine is named "VC 7-2.1) from the second side as they are duplica-

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ATARI

Do It Yourself continued from page 214

alone on a good worksurface, keys down. Remove the metal back plate carefully keeping those tiny phillips screws. Once the back is loose, be even more careful not to let any key springs get lost. They will stay put without popping, one in each key, if you don't dump the whole keyboard. Maybe you'd better put your cat in another room.

You will be looking at a plastic sandwich of two conductive-trace layers and a punched plastic insulator between them. The idea is that the key spring presses down on the top layer and squeezes the top conductor through the hole onto the lower layer, making the connection. After a few jillion keypresses, the top layer stretches and touches the lower all the time, or at least when you don't want it to. Many times, simply pulling the layers apart, gently cleaning them, and reassembling the unit will result in complete recovery, as the sheets will be sitting in a slightly new orientation. More severe cases may require some shimming (use ordinary tape, cut into thin strips) to thicken the "swiss cheese" insulator around the problem keys.

Problem: One or a group of keys (including the "console" keys, START, SELECT, and OPTION) no longer work. This can be simply too much junk in between the layers of the plastic, and fixed by cleaning. It is more likely (especially if a group of keys are affected) either a break in the conductive traces or a bad connection at the ribbon. It's worth the effort to try to clean it first, using the procedures above.

Newer keyboards have the conductor printed on the plastic. These can develop broken traces where a piece of the conductor either wears of is flaked off, losing the connection. The break may be hard to find, but careful inspectin and/or testing with an ohmmeter for conductivity in the problem area will show where the circuit is interrupted. The area of the actual contact between the sheets can also be worn too badly to conduct. Either way, repair it with Conductive Paint. This can be found at Radio Shack or other electronic parts stores, or use Rear Window Defroster Repair, from auto-supply houses. Using a toothpick as a brush, bridge the problem area with Fresh and Stirred conductive paint, and allow to dry. Test it again before you reassemble, and be careful not to create new traces where there were none before!

The ribbon end is very fragile. Some older units have a thickish metal trace glued onto a small plastic tab that pushes into the connector, and these almost always fall apart upon disconnection. They also are usually the original problem. To fix one, remove the tab and clean the new hanging "fingers" of the ribbon. They bend easily!!! so watch it. When you have them looking good, spray out any junk in the connector, and try this trick to reinsert the ribbon: fold the ends of conductors individually back up against the ribbon, facing the side that will best contact the connector on the motherboard. Gently press the ribbon back into the connector, trying to see that the fingers on the ribbon stay straight and don't touch each other. You can jockey them a bit with a toothpick after the ribbon is connected. Beware, you may only get to do this a couple times before you lose a conductor. If you do, you can try to bare the ribbon back aways, but more likely, you are finished with that keyboard.

More Atari continued on page 294

TEXAS INSTRUMENT

Geneve 9640 continued from page 212

ware available or special interest markets can be created. This is no surprise to MYARC, which realizes it must carry the burden of software development for the time being. Their arranging for the P-system was a step to open additional sources of software, they have plans for a C compiler which will bring more, and they are contracting under their own label for some of the major software items that wider sales will require. In the future are multitasking, windows, a GEM-like operating system, and a lot of applications software, according to MYARC.

Another challenge is to provide a replacement for TI's aging eight-bit bus expansion boxes, and at least two small companies have demonstrated prototypes and announced plans for production. Miller Communications of Seattle has announced their 220 Watt expansion box available from the Queen Anne Computer Shop, and RYTE Data of Canada is working on a box with various power options. Probably the long-range answer will be the production by MYARC of a stand alone computer that does not require the separate expansion box, but their initial target has been 99/4A owners with their own boxes.

In summary, the MYARC Geneve 9640 is a well-designed modern home computer with solid links to the past. It is an excellent buy for the present 99/4A owner, who can continue to use present software and peripherals, while gradually upgrading the system and the software. Right now it offers little more than promises to anyone else, although that should change in time. The key concern at this point is not whether it can outperform an Amiga or Atari ST or IBM PC AT or Macintosh in benchmark tests. It is whether it can provide the software that potential buyers need. Its capabilities for multi-tasking and fast, high quality graphics give it the potential to broaden its appeal and perhaps find specialized markets as well. Without the resources of a large company, MYARC is limited in how much development it can bring about and how fast it can produce needed software. On the other hand, with its relatively low overhead, it does not have to sell hundreds of thousands of units to justify its existence or stay in business. The months to come will determine how effectively the 9640 will stop attrition from the TI world, and how the appeal can be broadened to capture a wider audience. ●

More Texas Instruments continued on page 366

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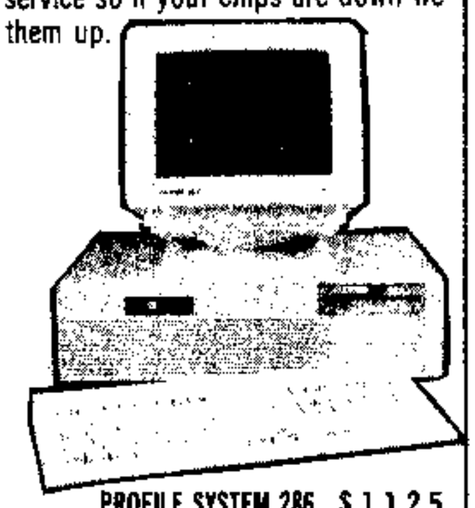

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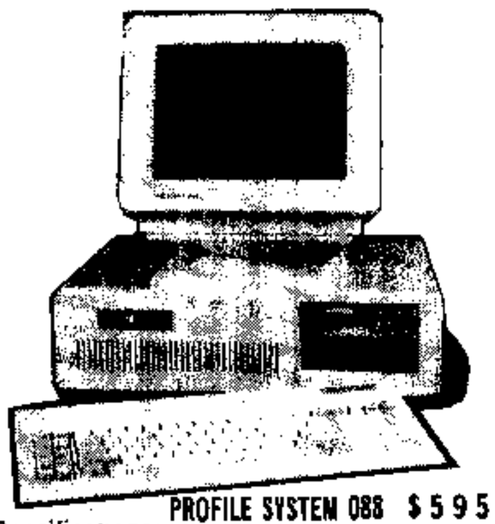

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The TI Forum

by Ron Albright and J. Zittrain

TextLoader Bug Fix

Curtis Alan Provance of Paragon Computing (17 Constance Street, Merrimack, New Hampshire, 03054) wrote in to let us know of a bug in his excellent TextLoader program. "It seems that the original version only allowed multiple line entry up to 127 characters," explained Provance. "Since this is less than the length of the maximum Extended BASIC line, it certainly wasn't a very attractive option."

The following commands entered after the TextLoader program is loaded will extend the maximum number of multiple lines to 162 characters, or almost six lines:

```
CALL INIT
CALL LOAD (-2094,9)
```

Save the program back to disk and the fix is done.

What Is TextLoader Anyway?

TextLoader is an excellent shareware program distributed through the Boston Computer Society's TI-99 Users Group and other groups and bulletin boards. The program, although an assembly language routine, can be loaded into Extended BASIC through the normal Old, Save, and Run commands (e.g. OLD DSK1.TEXTLOADER).

Once run, several extremely interesting Call Link's become available:

CALL LINK ("BATCH," "DSKn.-filename")

The Batch Call Link will read a Display/Variable 80 file in from disk (such as those files created by TI-Writer) and then pass each line along to the Extended BASIC command interpreter. Any program in memory is erased, but the lines read in can be either direct commands (such as New or Print) or program statements (such as 10 PRINT). One use that Provance suggests for this is to set up batch files to custom-initialize a Myarc 128K RAM-disk:

```
CALL PART(90,6)
CALL EMDK(2)
RUN "DSK1.SECONDLOAD"
```

Batch files can also be used to enter

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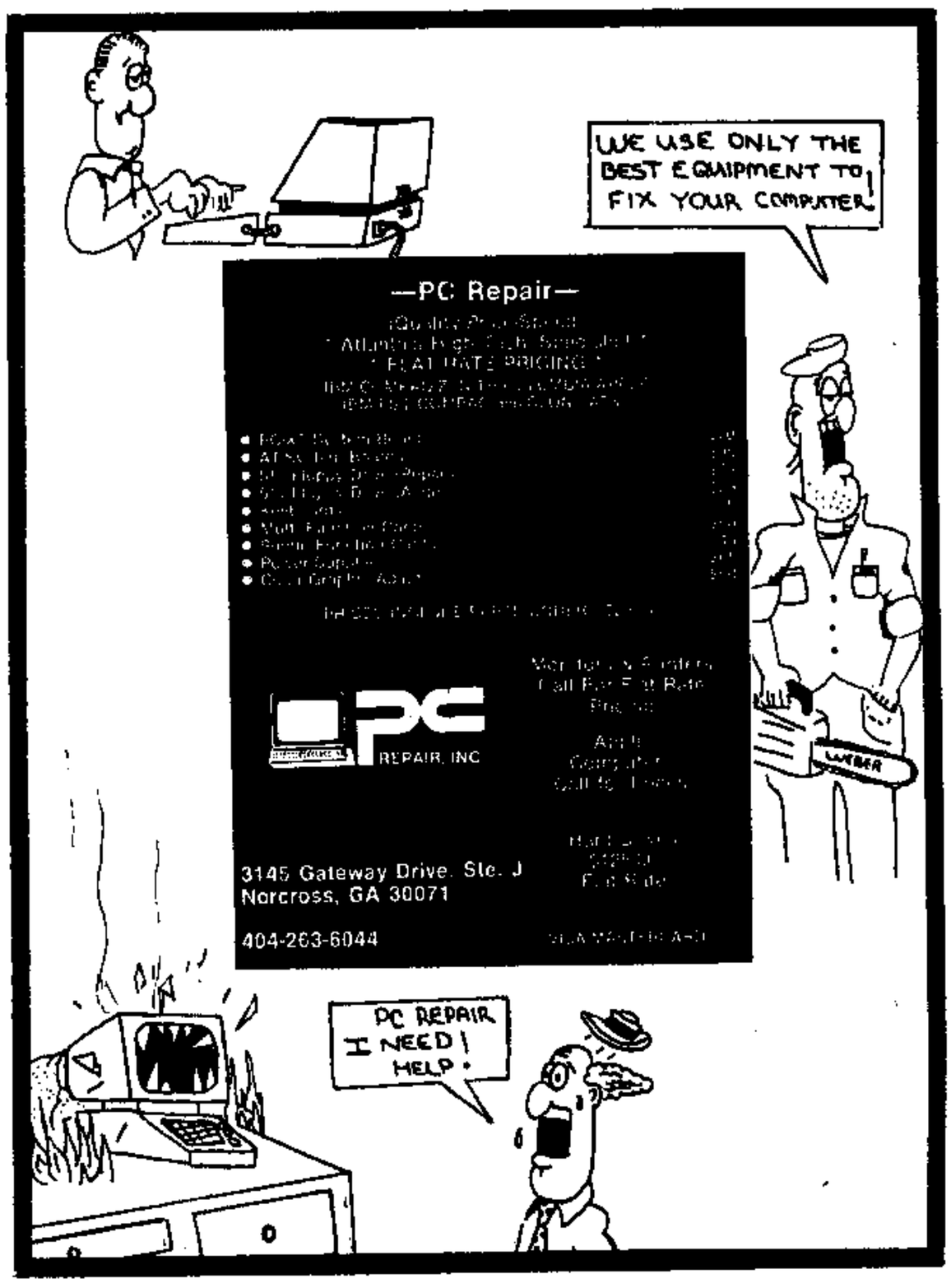
More Timex Sinclair continued from page 365

static electricity and static discharges. This is why there is a tiny bit of aluminum foil on the carrier that your chips arrived in (or it is conductive foam). If it is a dry winter day, and you get shocks from the doorknob just by walking over the carpeting, you will need to take precautions. If you have a humidifier, put it in the room first to adjust the climate that you will be working under. If not, remove your shoes, and roll back the carpet. Wrap a piece of wire around your wrist and connect it through a 1,000,000 ohm resistor to the metal cover of the circuit board. Each time that you touch the chip, first touch the metal cover with your hand, then touch the chip against the cover too. This drains off any static charge that is present also. Just use good common sense for the best results.

Many thanks to Dr. Bruce Allen for technical expertise with this procedure. Additional questions regarding this procedure may be addressed to him at 12-14 Winter Street, Apartment 4, Somerville, MA 02144, (617) 623-5889. Bruce also mentions that the C & D switches control the 50-60 hz display, so for a 50 hz display leave them in the opposite position. Ensure too, that the chips are firmly in place before closing up.

Bruce has donated to the public domain a program he has written entitled TERM52. The program, available for the PCW-8256, provides 100% emulation of a VT52 terminal, including graphics character set, numeric keypad and all VT52 escape sequences. TERM52 is recommended for users wishing to connect to a deck computer-vax at work, etc. Simply send a check or money order to Dr. Bruce Allen (at address mentioned earlier) for a copy of TERM52. He will cover the cost of the disk and the postage costs.



Tips & Techniques

For those of you struggling with MAIL 232, an inferior communications program, try MEX instead. MEX is generally found on most public domain disks that you are likely to encounter for the PCW-8256. MEX is available from the AMSTRAD SIG. Write Al Warsh, 12472 Reche Canyon Rd £93, Colton, CA 92324 for details on joining the Amstrad Sig, or for information on Al's public domain library. (By the way, Amstrad users groups have sprung up in Hawaii, Spokane, England, California and on the East Coast.)

If you have password protected text files, then suddenly cannot remember the password, here is a little known procedure that will help. Start with LOCOSCRIPT. Place your CP/M disk with the protected file on it in the disk drive. Press F1 to examine the contents of the file on the disk management screen. Now, create an "empty file" and select "insert text" with the F7 menu, and choose the CP/M that you wish to unprotect. After you have completed the edit, select "Make ASCII File" to create a file that CP/M can relate to.

As always, keep it here on this same BatChannel for the latest developments, reviews, tips, techniques, user support, gossip and hardware projects for the TS/1000, TS/1500, ZX-81, TS/2068, Spectrum and Amstrad computers. See you next month. ●

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continued from page 366

CALL FILES(1) and New automatically before running programs that require large amounts of string space.

CALL LINK("OLD,""DSKn.filename")

The Old Call Link works as the BATCH one does, but assumes that each line of the Display/Variable 80 file is to be added to a program being entered. Those lines of the D/V80 file without line numbers are assumed to be concatenated to the preceding line.

One advantage to this, as Provance points out, is that highly intuitive and easy-to-follow Extended BASIC program source can be written with TI-Writer, and then loaded into Exended BASIC through TextLoader.

For example,

```
100 DISPLAY AT(1,1)ERASE ALL:
"HELLO THERE" ::
LINPUT "How are you?":HOW$
IF HOW$ = "FINE"
Then PRINT "I'm not feeling too bad
myself."::
CALL CLEAR::
END
ELSE PRINT "Aren't you feeling
FINE?"::
GOTO 100
110 REM THIS PROGRAM DOES
VERY LITTLE
```

The indentations and multiple line usage make the logic of the program very easy to follow, and TextLoader makes it possible for Extended BASIC to understand the formatting via the Old Call Link. This could be an extremely helpful feature, especially for those just beginning to learn BASIC and programming.

CALL LINE("MERGE,""DSKn.-filename") will do the same as the Old Call Link but will not erase the program currently in memory. CALL LINK("HELP") provides a quick and easy help screen for those who might have forgotten the exact syntax and purpose of the new Call Link's.

TextLoader, if received as part of the whole TextLoader package disk, also comes with a five page formatted helpfile (a printer is required to easily read it, however).

And what makes TextLoader such a distinctly TI community concept is the asking fairware price: $5 minimum. The program is worth far more. If this is the kind of work Paragon Computing does, I await the company's "flight simulator and true DOS" eagerly.

USUS And The TI-99/4A P-system

USUS, a users group for the p-System on all makes and models of machines, reports that TI users comprise a sizable portion of its membership. The Winter 1987/88 Newsletter of USUS had the following to say:

"Hays Busch, our Administrator, has been keeping an eye on the renewal applications as they come in, and reports that the two most popular systems among USUS members are the Apple (II and III) and the TI-99/4A.

"While they don't have all the speed and technical acclaim of the Stride, or the marketing support of a large Blue company, they are useful machines, and a lot of games, utilities, and solid business applications are available.

"The other thing they are is cheap—which makes them ideal for students and learners. USUS recognizes very well that we are not going to survive very long without these people, and is committed to serving them."

It is a true (and not often-experienced) pleasure to see those outside of the TI world express their understanding and appreciation of the TI-99/4A—and USUS' offerings of p-System programs do generally apply to the TI-99/4A p-System.

USUS also offers an online forum called MUSUS on CompuServe for the discussion of the p-System and the machines it runs upon.

To learn more about what USUS has to offer or participate in its program, write to USUS, Inc., P.O. Box 1148, La Jolla, CA, 92038. They could use our support—and we could use theirs.

BBS Program Information Wanted

We've received some questions about available bulletin board programs for the TI-99/4A. There are quite a few out there; like terminal emulator programs they are of varying quality, price, distribution method. We are now in the process of compiling a list of as many available bulletin board programs as possible. If you have written or know of a BBS program for the TI-99/4A, please drop us a line and we will be sure to include information about it in an upcoming issue.

And from the ever-industrious TI C99 guru Warren Agee comes the following C tip:

Two functions often used in c99 programs are atoi() (to convert an ASCII string to an integer) and itod() (to convert an integer to a decimal string). These two functions are found in the CONV;C file on the c99 disk.

What is not documented anywhere is that atoi (and itoa, which is similar to itod) are already defined and available to your program if you use the PrintF library in your program. To make them available to your program, include the statement "extern itoa(),atoi();" at the beginning of your source code. Here is a short example:

```
extern printf(),itoa(),atoi();
main() {
char s[10];
int i;
puts("Enter a number:");
gets(s);
i = atoi(s); /* convert ASCII to integer
*/
printf("\nYou entered: %d",i);
itoa(i,s); /* convert integer to ASCII
*/
printf("\nBack in string form:
%s",s); }
```

To run the program, just load in the printf file in addition to csup.

Ron's Part

I had the distinct pleasure of interviewing Mr. Jack Riley, vice-president for Marketing at MYARC, Inc. He has been a frequent exhibitor at the many TI fairs across the country and has been demonstrating the new MYARC Geneve (a.k.a. 9640) with great enthusiasm at each stop. Converts have followed as the installed owner-base of the Geneve has increased rapidly. The

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MDOS operating system is out and working well. I felt it was time to let MYARC and Mr. Riley tell us where they are going from here, and what we can look forward to from this fine firm in the future. Here is what Mr. Riley had to say:

Question: What new software are you working on at MYARC and what are the projected availabilities?

Riley: Let me break it into near future, mid-future and end of the year. Probably for the 3rd party 9640 software developers, the most exciting piece is called "PDS" which stands for "Programmer's Development System." It is a program that loads at the A > prompt of MDOS that has the "linkers" and "macros"—all the tools that an assembly language programmer will need—to develop programs that run under DOS on the 9640. That software is up and running now (actually that is being written in Canada) but we do not expect it until at least next month before its ready to be released. Now, we have a lot of software behind that. One, is for me the most exciting and is expected around mid-year. It is called "GEME" or "Graphics Enhanced Multi-tasking Environment." It is an existing piece of software developed by one of the best and largest northeastern colleges in computer science and one of the "heavyweights" in the computer industry. It was developed as a multi-tasking system to run on Sun and other UNIX based workstations. Of course, we are making some changes in it but most people do not realize that the 9640 is much like the UNIX operating system so multi-tasking is not that difficult. At any rate, it is three pieces of software in one. At the front end, you have the icon-like environment not unlike a Mac (but then again, it is not like Mac—I think it is more friendly and more natural to me). There are some similarities there and then again there are not. Beyond that, you have windowing environment through which your multi-tasking runs. You will notice a difference between the MicroSoft Windows and GEME, in that MicroSoft does an overlaying pattern that for some novice will become confusing—they see their software disappearing and the "where did it go" kind of thing. Under GEME, it is more in a "columnar" design. Now you can expand that column to take a full window or screen, but when it collapses down everything is in neat columns. Under GEME, you can run as many different pieces of software as you have memory to support up to the 2 megabytes the 9640 will currently support. And once you go into a window, if that piece of software is written with pull-down menus, reverse video mouse clicks, etc., all of that will be there just like the front-end is—the graphics-enhanced portion. And on the back-end of it, is an intelligent print spooler that will allow you to output from any of the tasks going on in the windows and control them to any printer output you like. Of course if you had one RS232 card, you could, theoretically have 2 serial and one parallel devices going. So, you can keep them separated all intelligently, all to different devices all simultaneously. That is pretty much what the piece of software is going to look like. The great thing about doing this under the 9640 is all the hard stuff to do this has already been done within the hardware and the operating system, unlike trying to do windows on a PC that caused MicroSoft to pull their hair out for a couple of years to try and get done. It is not that difficult on the 9640. For me, it would be difficult. But for a talented programmer, it is really not that difficult.

Question: So that is mid-year.

Riley: Yeah, that is mid-year. Now, we will talk about generally where these are and I will give these to you as they come to mind. The same programmer that is doing GEME originally wanted to do a terminal emulator program. We felt GEME was more important than a terminal emulator (even though a lot of people in the /4A and the 9640 market had wanted a really good terminal emulator). So, what we are doing is, he had already done a great deal of code, but we moved that back and sometime after GEME, he will be doing a terminal emulator with full mouse support. And we are still taking suggestions from people because we have got some time to still do some changes. But, currently, I guess the nearest you could that the design specs are this: if people are familiar with Procomm for the PC, if you took that (which is probably the most complete and comprehensive terminal emulator program that I have seen) but if you added the mouse support with the pull-down menus and so forth, that is what you would have—that is where we are aiming with it. Incidently, all software, or major software that we do—such as the terminal emulator—will have two

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modes of operation. One, if you run it under GEME, then you will have the full graphics enhanced mouse support, pull-down windows, etc. However, if you simple load it at the A> prompt of DOS, then you will have the standard keyboard input. So, it will run either way.

Question: So, you are saying that, under multi-tasking, you will theoretically be able to boot up a terminal emulator program, log onto CompuServe, initiate a file transfer, and then switch windows and use MyWord to continue typing on a document, while the download continues.

Riley: Right! Now, the way the system is set up, you can run under GEME something over a hundred programs at one time. Obviously, running that many programs (assuming you had memory for them—which you probably would not), the operations of some programs would be rather slow, but, then, most people are not going to do that. But running a handful (of programs) is a piece of cake and you will not notice a tremendous loss in speed. In that same vein, at the same time we will be releasing GEME, there will be a new version of the Geneve which will have 20 MHz clock on it. And it will be as an option. It is not a simple matter of plugging in a 20 MHz clock onto your existing 9640 because very probably your chips will not be able to take the speed. And even if they did, things would work fine as long as you didn't run the GPL. But anything under GPL, the timing will be shot to heck. It will take a new version of GPL as well.

Question: I had wanted to stay away from technical matters, but how would a 9640 running at 20 MHz compare to a 80386 running at the same clock speed?

Riley: Well, it will actually out run it. It will out run it for two reasons, even though the 80386 is a 32-bit machine. With the 9640, you have (and you can credit Texas Instruments with this) the Reduced-Instructional Set in the chip mode. So it is faster, already. By the time you add a 20 MHz clock and you include the increased speed you get with the 9938 video chip, the end result is that it is actually faster than the 80386 machines, in most cases.

Question: In graphics, I would expect, primarily.

Riley: Well, not only in graphics. For instance, if you tie it with the hard and floppy disk controller, it will actually read and write to a floppy faster, because the transfer speed is faster. In no way are we trying to say the 9640 is a replacement for an 80386 machine. And we try to stay away from speed. Most of what we have heard already is that the machine is fast. We have just released some benchtests from a couple of publications—one done from *Byte* magazine—several years ago, right after the Macintosh first came out. They did a PC, a Turbo PC, the 68000 chip and other chips in this test. We took their benchtest, and duplicated them for the 9640, in both the 9640 mode and the GPL mode at speed 5 and duplicated a 99/4A. And the 9640 in the 9640 mode was faster than all of them. Now, as I recall the figures, the 9640 in the DOS (or 9640) mode, had a .95. The 6800 with an 8 MHz clock on it was 1.12. The slowest was the /4A which had a 6.0.

Question: What is the status of the Pecan Pascal system?

Riley: Both the Pecan system and Advanced BASIC are up and running. It is as far as we can develop it at this point until we can get some additional information from Pecan. I talked with them yesterday [19 January] and that information is forthcoming, probably within the next week. The remaining work will then, supposedly, only take a few days work to finish up. We are not going to release that soon, however. One of the mistakes that we have made in the past is that as soon as a piece of software was finished, we rushed it to the market. And, of course, while you don't know of any bugs, there are always bugs there. Some people have understood this, and realize that this is the development cycle that software goes through. Others have found this terribly frustrating. We are going to take all future "finished" software and really put it through the mill. Even though the Pascal should be "clean" already because of the nature of that piece of software. We have testing software furnished by Pecan and it really should be free of bugs. But, nevertheless, we are going to go through a

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Mitac MPC
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missing in user guides for imports. The bundled software includes a legally licensed set of Microsoft MSDOS 3.21 including GW BASIC, Version 3.2. These days Microsoft does not supply manuals for licensees, they have to print their own. The quality of the manuals supplied with clones varies all over the place. Some I have seen are horrible examples of cheap printing. Mitac provides a set of manuals for both MSDOS and GW BASIC that are equal to those provided by Microsoft itself. They only lack the slip-cases provided by IBM. The BIOS used with the MPC 2000S is by Phoenix Technologies Ltd. This ensures compatibility with all PCDOS/-MSDOS software.

Mitac Monochrome Monitor

The video monitor provided with the test unit was a 12 inch monochrome display. It had crisp characters but we were not able to display monochrome graphics since it lacks a Hercules mode. It will display EGA Monochrome but this is a mode seldom found in software. I feel that this is a mistake that mars the compatibility of the computer. Changing to an EGA Monitor we were able to operate in color, by merely resetting the switches on the computer. Mitac sells their own 12 inch EGA Color monitor because a larger one hardly fits on top of the small cabinet.

Except for the lack of Hercules compatible monochrome graphics, I liked the operation of this computer. I have still not accepted the almost everything-on-the-motherboard idea. That is my own opinion and I will not argue with those who do not agree with me.

We ran the PC Clones Benchmark tests on the Mitac MPC 2000S and compared them with tests on the Wells American and Northgate 286 computers. The results are presented below:

Addition, subtraction, multiplication and division using integers, long integers and floating point numbers:

Operation	Mitac	N'gate	Wells(14MHz)
int add	17	17	12
long add	21	22	14
float add	616	641	432
int sub	15	16	16
long sub	16	16	10
float sub	278	289	195
int multi	15	16	10
long multi	17	18	12
float multi	282	293	197
int divide	15	18	10
long divide	16	17	11
float divide	279	288	195

In the tests the Wells American 286 was operating at 14MHz. The Mitac and Northgate were operating at 12 Mhz.

Mitac Availability

The Mitac MPC 2000S is sold mostly through dealers and value-added resellers and retails for $1595 without a video display monitor. The monochrome monitor sells for about $100 and the special 12" EGA color monitor is $550. I was not able to find out what arrangements they have for service and maintenance beyond dealer service.

The Mitac must be compared with many similar computers advertised in the pages of *Computer Shopper*, such as the INFO 286-Baby 12Mhz System from May Computers Corp , which has all the features of the Mitac, plus Hercules Graphics and comes with an EGA Monitor for $1495.

For more information, contact American Mitac, 3385 Viso Court, Santa Clara, CA 95054; 408-432-1160. ●

TI Forum
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full February of testing. It will be the end of February or the first of March before we will release it.

Question: What of the Pecan Pascal system will come to the current 9640 owners?

Riley: It is a Pascal Run-Time. Now, what that means is that Pascal programs written to those specifications (of which there are literally thousands already) they will be able to be loaded and run on the 9640.

Question: And that is all the 9640 will need is just this software package?

Riley: Correct, just the Run-Time. Now, if they want to get into, say, Fortran-77—which is probably the most popular version of Fortran right now—from Pecan, they can buy a Fortran-77 compiler and run-time with which they can write compiled Fortran-77 programs which would run on an IBM or a 9640.

Question: What ever happened to "MY-Numbers?" (a spreadsheet shoftware)

Riley: MY-Numbers is a major project that is still way off in the future. And I, from everything I have been able to put together, am not convinced the market is going to be that big for it. So we are not pushing full-speed ahead for it right now. The same thing goes for the DBIII-clone, or "My-Data" as it was called. We are working on them, they are viable projects, but we are concentrating on the ones I have already mentioned because these seem to be what customers are asking for. We have some people who say "Lotus 1-2-3" or say "DBIII" but when you look at it from a marketing standpoint and start questioning them, the vast majority really don't want that. That is not what they are saying. Some do want to be able to work on an IBM and bring their work home for the 9640.

Question: Speaking of IBM, are there any plans to broaden the capabilites of the 9640 to handle MSDOS or IBM materials?

Riley: To run an MSDOS program.

Question: That has been suggested by some.

Riley: Well, I have heard that, too. But here is what does exist in the 9640. The ability to read the IBM format is really nothing to that. We could implement that. That is true. We could read and write IBM-formatted data from their disks and even write that format to disks. There is already software available to read ASCII (text) files to and from MYARC and IBM disk formats written by Mike Dodd. But you really need more than that if you are going to make it useful. If you are going to read the data you really need to be able to manipulate the data. There has been a lot of thought given to that.

Question: So, MYARC has plans to market their machines outside of the 99/4A market?

Riley: If the /4A community is to survive long term, and of course people have been writing about the demise of the /4A community for years, you have to get some new blood. To get people who have previously not owned a computer (or at least, not owned a /4A compatible computer) and get them to come to the users groups. And that means a new machine.

Question: Are the programmers out there with 9900-based expertise to provide adequate software for the 9640?

Riley: We are starting, finally, to see an increase in them. Now, as to a lot of programs for the 9640, while there is a lot of 3rd party software in the works, but I personally don't see really lots of it until this PDA is out there for a few months. [PDA] will give them tools they need to do that. Currently, they don't even have the full specifications or the technical reference guide to do that with.

Question: That seems to have been one of the biggest problems so far in the 9640's support. There just don't seem to be enough high-caliber 9900 programmers out there.

Riley: I agree with that. But, there is no doubt we will never have "thousands and thousands" of programmers like you have with an IBM or a Macintosh market. But there are hundreds. If you really look around, there are 2 or 3 hundred good (9900) assembly language programmers out there. Of that number, you may have a handful (and maybe not that many!) of a Paul Charlton caliber. But, then, I am not sure there are that many like Paul in the PC programmers. He is just one of those exceptional programmers.

Question: Two years from now, what do you think the typical Geneve owner will have to work with and what will they be capable of doing with their machines?

Riley: On the hardware side, they will have the 9640 with the speed of a 20MHz clock in it. They will also have the hard and floppy disk controller, which will give them the storage capacity and the transfer rate that they real-

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Note And Point...8-bit Atari News And Comment

by John Nagy

First let me say sorry for the somewhat stale flavor of parts of last month's article. Parts of it were written as long ago as last October, but were postponed in printing for a multitude of reasons. In any case, on to the news, rumors, and general happenings in our world of the Atari 8-bit computer!

The More Things Change: Walt Wilson, formerly of Apple, was briefly in charge of building the Atari dealer network that has been so desparately needed for so long—and has already left the company. After discussing how Atari has been "shooting itself in the foot," he was overheard as early as September at the "Magic AtariFest" in Detroit, Michigan, saying "You don't realize how frustrating it is to work for Jack Tramiel." It apparently got too much for Mr. Wilson.

Atari Stockwatch: After more stockmarket sleighrides, Atari stock is still hanging near the $6-$7 mark. Splashy press at the winter Comdex show and word of the ABAQ future-computer seem to be holding up the company reputation, and therefore the stock values.

"Big Splash" advertising never made it to much of the country, despite millions supposedly spent by Atari to hawk the 8-bit and ST computer lines this winter. According to Neil Harris, top product information man at Atari, the advertising was limited to regions where dealer penetration of the products was sufficient. That means, if Atari is hard to find in your area, they didn't advertise there. It seems to make economic sense, but as long as Atari only advertises where people already can buy the machines, the areas where they can't be found will never hear of Atari again. Let's hope Atari will do something to break the circle of "No dealer, so no advertising, so no demand, so no dealer."

Games Companies Play: The Atari 2600, the world's largest selling computer of all time, (ok, it's a computer inside, isn't it?) is about ready to be redesigned again, said Neil Harris, new technology allows the entire game machine to be integrated onto one chip. Meanwhile, thousands of counterfeit 2600s were seized off the Florida coast recently, destined for dealers who may or may not have known they were fakes. Made in Taiwan to look like the Atari units, they could seriously cut into profits for the US company. Fortunately they were discovered and action is being taken to prevent a reaccurance.

Wondering where your *Analog* or *ST-Log* magazines have gone? Both exclusive Atari interest magazines have been out of circulation since the September 1987 issues. Reports are that the company that produced the two publications has been bought by Larry Flynt (notable for his "adult" publications), and the magazines will resume, virtually unchanged, starting perhaps by the time you are reading this. Subscribers are encouraged to hang on, they will get their full contracted number of issues. Writers and contributers are also waiting to be paid. Darek Mihocka, author of the "ST Transformer" 8-bit emulator for the ST, is one of them. Part one of the article on it ran in the last *ST-LOG*, and six to nine months later, part two should see print, and eventually be paid for. Darek tells us he isn't worried.

The other word from Darek Mihoka is that a new version of his ST-Transformer will be out this spring—and it will be 50-75% faster than the "old slow" one, will include Player Missle Graphics (he expects!) and might include an R: handler for modem use. The biggest difference will be the option at run time to choose Atari 8-bit Emulation, Apple II Emulation, or Commodore 64 Emulation!!! Darek also has been getting some developmental support from 8-bit programmer Alan Reeve of Chicago. Alan has contributed a program that will allow Atari 8-bit disks to be read directly into an ST when used with a 5.25" drive such as used for PC:DITTO. Yikes! Can running protected software be too far off? The ST continues its reputation as the computer that can be anything.

Hottest news in some time: OSS and ICD tie the knot! Optimised Systems Software, famous for designing ATARI BASIC, then BASIC XL, BASIC XE, DOS, DOS XL, ACTION, and more—is now selling their Atari line through ICD Inc., makers of Spar-

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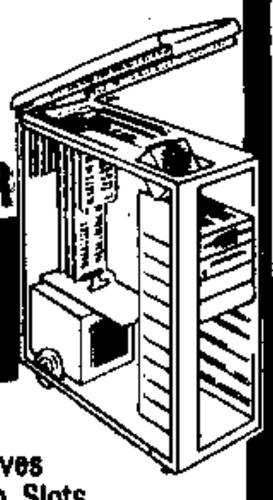

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ly want. They will also have a full 2 megabytes of memory because we will have the 1.5 megabyte card out by then. This card, by the way, is going to be a little different than most people will expect. It will not be unlike the Horizon RAMdisk card in that it will be configurable into a RAMdisk and whatever you configure to RAMdisk will automatically be battery-backed. And a couple of other little twists as well. So, hardware-wise, it will be a fairly complete system. Software-wise, they will have the GEME that we talked about, they will have the database and terminal emulator that they really wanted, and the professional word processor—MYPROWord—and spreadsheet will be completed. So, from just MYARC they will have about as complete a machine as they will need, to include "Norton'like" utilities. We even have a Flight Simulator in the• works. Though, I have never understood why folks would want one of those. But, evidently, it is important. And from 3rd party developers, we are expecting a world of software. And what we expect from them are all the peripheral things you always wanted—the games and graphics.

Incidently, there is a full-blown CAD (computer-aided design) package already under development.

Question: Here is, admittedly, a tough question. If there was one thing that you would have changed—imagining that you were with MYARC from the very beginning—what would it be?

Riley: I would have gotten contracts signed up front. I would have insisted on software being delivered on a timed basis without exception. Every software developer would have delivered code every two weeks with full documentation on where he was at that particular time. That is the primary thing I would have changed. That is what we do now, incidently.

I want to personally thank Mr. Riley and MYARC for making us privy to their plans for the TI users. We certainly wish them well in their efforts and will have more on the Geneve in the future.

Quickies

David Brindle sent along a copy of his terrific "Ribik's Cube" program for the TI. David says the program "provides a model through which the properties of the puzzle can be conveniently explored." It is fast and runs out of Editor/Assembler and is replete with help screens, color, saving routines, cube scrambling and unscrambling, etc. It is terrific. Unfortunately, David didn't mention cost or method of distribution. I suggest you write him (80 Cardinal Crescent, Regina, Canada S4S 4Y5) to get details. Worth whatever he is asking! New in the Forum mailbox is the newsletter from the Philadelphia Area TI User's Group (1290 Buttonwood Dr., Lansdale, PA 19446). Don Arsenault is the president and editor. A super group and a great newsletter—thanks! Thanks to the generosity of Bruce Ryan, at Ryte Data (210 Mountain Street, Haliburton, Ontario, Canada K0M 1S0; (705) 457-2774), we have some nice items to give away this month. The lucky winner this month, Danniel Evans of Anniston, Alabama, will receive a copy of Monty Schmidt's "Command DOS" software, which loads a MSDOS-like command set into memory from a Gram Kracker or "Super Cart" and opens up a new range of power for the TI user. Also, Monty's "Technical Drive," a hard-core disassembly of the DSR's, RS232, minimemory, etc. This is not for the faint at heart. This is heavy-duty, high-tech stuff. Which brings this to mind: if you care to enter our giveaways, include on your postcard what sort of system you have—disk drives? Editor/Assembler? Cassette? That will help me get the right software to the right users. Deal? See you next time. ●