Covering the TI99/4A and the Myarc 9640

MICROpendium

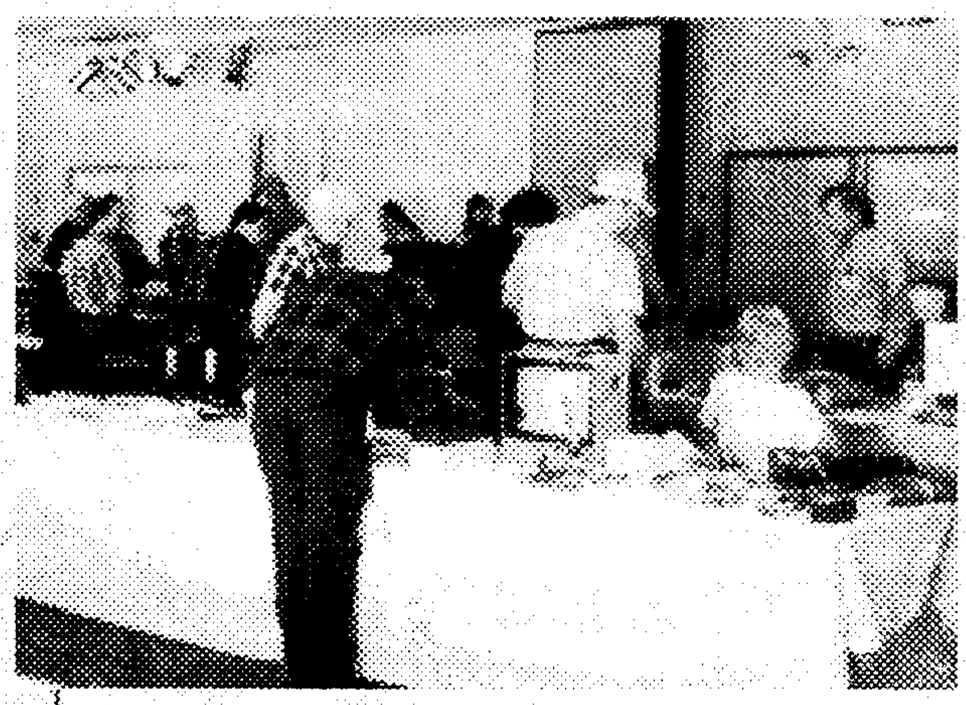
Volume 13 Number 2 March 1996 $3.50

Fest West '96

In the photo below, the Super AMS card is shown with a 1- megabyte daughter board. (The AMS card is the lower card.)

At right, visitors at Fest West spent a lot of time in the exhibit hall.

At lower right is the TI99/4A CD-ROM.



Reviews

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MICROpendium

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John Koloen.....Publisher

Laura Burns.....Editor

*READ THIS

Here are some tips to help you when entering programs from MICROpendium:

1. Most BASIC and Extended BASIC programs are run through Checksum, which places the numbers that follow exclamation points at the end of each program line. Do not enter these numbers or exclamation points. Checksum is available on disk from MICROpendium for $4.

2. Long Extended BASIC lines are entered by inputting until the screen stops accepting characters, pressing Enter, pressing FCTN REDO, cursoring to the end of the line and continuing input.

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COMMENTS

Readers leaning toward bimonthly

I've been receiving comments from readers about their preferences regarding how many issues we will be publishing in the future. Seems like a majority of you prefer bimonthly with 48 pages, rather than nine times per year. I admit, nine times a year is a little difficult to put my finger on. Does that mean every six weeks or what? I don't know. As it has been pointed out to me, six issues of 48 pages equals 288 pages of MICROpendium per year. I think that's still a lot of pages.

We'll keep you posted. As of now, we're still monthly.

GENIE HAS NEW OWNER

GEnie, the on-line service operated by General Electric, has been sold to a Queens, New York, company. Yovelle Renaissance Corp. purchased GEnie effective Feb. 1. Coincidentally, perhaps, GEnie has announced a new pricing policy and says it will be moving to the Internet over the next several months. GEnie is home to one of the largest on-line collections of TI shareware.

The first thing the company did was raise prices. A minimal membership now costs $18.95 per month, instead of $9.95. You get more hours but for those who use it sparingly the extra charge isn't worth it. A number of the mainstay TIers have announced that they are bailing out. I'm not sure if any other service has as extensive an on-line library of TI software as GEnie. Losing this library could be quite a blow to the TI community.

CECURE PURCHASES RAVE99

Cecure Electronics has purchased Rave 99 Co. from John McDevitt. According to Beth Walden, president of Cecure, Rave will become a division of Cecure. Cecure will be selling most of Rave's products, including new products that were in development.

Rave products that will be available include the MX01 Memory Enhancement System, Speech Synthesizer Adapter Card and PC Keyboard Interface.

IS TI-BAR ACCURATE?

Don Walden took exception to Charlie Good's suggestions last month that TI-Bar, the barcoding software reviewed in the January edition, does not print barcodes in the correct place on envelopes. Charlie tried the program and gave the resulting envelope to his local postmaster and the postmaster said it wasn't up to spec.

Don faxed us several pages from U.S. Postal Service Publication 25, "Designing Business Letter Mail." Not wanting to get in the middle of this, let it suffice that the examples he faxed us seem to be up to spec. The examples show barcodes both above and below the address. Thus, it would seem there is more than one way to do barcodes. That's as much expertise as I have in this matter. If you want to confirm the accurate placement of the barcodes on a mailing piece, contact your local postal automation readability specialist.

Don also reports that William F.S. Dowlding, author of TI-Bar, is beta-testing an upgraded version that prints postal barcodes on labels. Tests indicate it can handle up to 2,000 names. It has other features, including the ability to print from one to 12 labels for a single person, with or without barcodes.

—JK

READER TO READER

Frank W. Aylstock, 4336 Eureka Ave., Yorba Linda, CA 92686-2343, writes:

We are looking for a copy of the UCSD VERSION 4.0 PASCAL for the IBM . Most of our existing TI programs will run on same.

Jim Uzzell has responded to Kurt Radowisch's inquiry in the December 1995 issue. He writes:

To begin to understand VALHEX (MY-BASIC command/statement) Kurt can read the following sections of the Editor/Assembler manual:

SECTION	PAGE
3.5.1	50
17.1.1	281
23.21	390
23.22	391
24.1.3	396
24.1.4	397

George S. Tory, 970 Tulip Ave., Victoria, BC, Canada V8Z 2P7, writes:

I'd like to know more about the Amateur Radio module for the TI (Hamsoft module). Are any of these ever available second hand?

Marine sailboat instruments use a system of serial transmission called NMEA0183, or a proprietary system such as "Seatalk." This is a serial transmission at 4800 baud and includes various sentences giving boats' position, speed, depth, wind speed and velocity, heading, etc. There should be some way that this info could be fed into a computer's serial port and with a suitable program, display it on a monitor. Has anyone tried this or does anyone know enough about the system to verity feasibility?

Reader to Reader is a column to put TI and Geneve users in touch with other users. Address questions to *Reader to Reader, c/o MICROpendium, P.O. Box 1343, Round Rock, TX 78680.* We encourage those who answer the questions to forward us a copy of the reply to share with readers.

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All of the features of the MODEL MX01/64 with additional memory included to have 256K Bytes of MAIN memory. RUNs Keyboard MACRO program, RAMDISK Software (1-DSSD, 1/2-SSSD), Modified version of MYARC XBII, and Super Cartridge Programs.

ORIGINAL PRICE $ 399.95
MODEL MX01/544 - Includes **ON SALE FOR $ 175.00**

All of the features of the MODEL MX01/64 with additional memory included to have 512K Bytes of MAIN memory. RUNs Keyboard MACRO program, RAMDISK Software (1-DSDD,1-SSSD,1/3-SSSD), Modified version of MYARC XBII, and Super Cartridge programs.

Special "memory mapping" of addresses 4000 - 7FFF allows an extra 16K BYTES of memory for assembly programs which allows program up to 48K in lenght without any user memory mapping required.

TWO (2) 8K Bytes "backed-up" DSR's are provided. One is reserved for the system software, the other for the user.

NON-DSR Space - The memory at address space 4000 - 5FFF is used normally to map in a Peripheral Device Service Routine. When a device's DSR is not mapped in, this memory space goes unused. Now 8k Bytes are mapped in when no other DSR is active.

SOFTWARE COMPATIBILITY - All software originally programmed to run on the TI 32K memory expansion card are compatible.

Memory Management software is supplied which controls the memory bank switching, Cartridge space access, and loading of programs into the DSR memories. System "CALL's" from (X)BASIC allow the selection of the 32K memory bank to map into the computer as well as enabling/disabling the "CARTRIDGE" memory space (6000 - 7FFF).

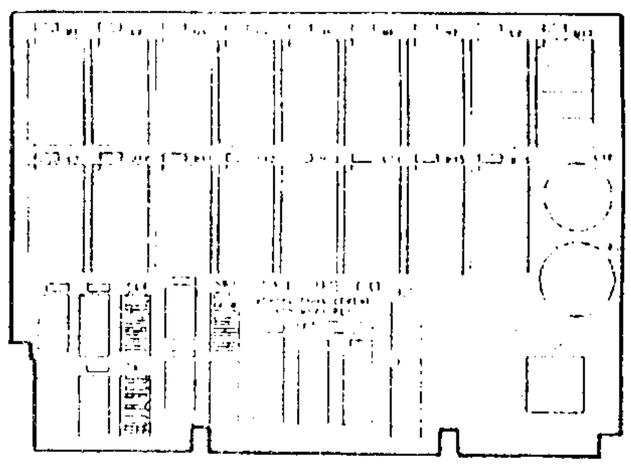
The NEW Memory Enhancement Card allows memory expansion for the TI-99/4A up to 544K bytes of backed-up memory. Up to FOUR (4) memory cards may be installed in the PEB which allows access to over 2 MEGABYTES of "BACKED-UP memory. The Memory Enhancement Card replaces your existing 32K memory so that no additional PE Box card slots are required.

MX01 MEMORY ENHANCEMENT SYSTEM

Memory Back-up is provided in two methods. 1). The card is designed to backup the memory for about 5 days without the use of batteries or external power source. Each time the system is turned on, the Card "RE-CHARGES" itself automatically. 2). To extend the back-up time beyond 5 days, an optional LITHIUM battery may be installed which provides back-up for months to years.

HARDWARE REQUIREMENTS - TI-99/4A with PE BOX, E/A and Extended BASIC Modules. Note! the TI-32K memory expansion card must be removed from the PE Box. This memory is located on the Memory Enhancement Card.

HARDWARE COMPATIBILITY - Works with the following PE Box Cards: TI RS232 Card, TI Disk Controller Card, MYARC Floppy Disk Controller Card, Corcomp Disk Controller, Horizon RamDisk, and RAVE 99 Speech Adapter Card. Other cards MAY work but have not been tested.



MX01 MEMORY ENCHANCEMENT CARD

ADVANCED programs; SOLD separately, which take advantage of the additional memory include:

RAVE 99 RAVE_OS

RAVE 99 Keyboard MACRO Loader

RAVE 99 RAMDISK Software

RAVE 99 PRINT Spooler (to be released)

RAVE 99 MODIFIED version of MYARC's Extended BASIC, runs without a cartridge.

RYTE DATA's COMMAND DOS

R.A. Green's MACRO Assembler

DataBiotics Software Support Loader

VISA MasterCard No Surcharge on Credit Cards

UPS UNITED STATES POSTAL SERVICE AIRBORNE EXPRESS

Speech Synthesizer Adapter Card

ORIGINAL PRICE $ 49.95
ON SALE FOR $ 29.95

Features:

- o Compatible with the TI-99/4A and 9640 GENEVE Computer.
- o Software compatible with TI-Speech Synthesizer.
- o High quality construction.
- o 90 Day Warranty

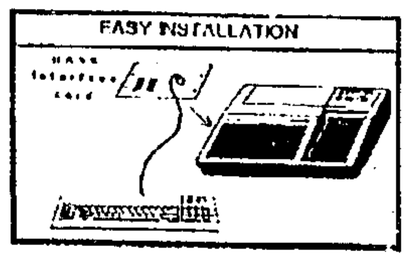
IBM Style Keyboard Interface Card 99XT

ORIGINAL PRICE $ 149.95
ON SALE FOR $ 39.95

PC Keyboard Interface

Our Model 99XT Interface Card installs in the 99/4A console inplace of the old keyboard. Only a screw driver is the only tool needed for installation. Comes with clear step by step instructions. NO Soldering required.

The Model 99XT Interface Card allows use of any IBM PC/XT compatible keyboards with your 99/4A. The Interface Card supports all 83 standard PC/XT key codes. Keyboards that "Auto" select between an XT and AT compatible computers will not work. A switch selectable XT/AT keyboard is compatible.



Key Assignments

Function Keys

The Model 99XT Interface Card provides single key-press operation for the TI 2-key press combination "FCTN-0" through "FCTN-9".

Cursor Keys

The Model 99XT provides single key press operation for the TI-2 key press combination "FCTN-E", "FCTN-S", "FCTN-D", and "FCTN-X"

Page Keys

The Model 99XT provides single key press operations for the following TI 2 key press combination:

PAGE - UP (FCTN-6), Page-Down (FCTN-4)

Home (CTRL-L)

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FEEDBACK

It keeps going ...

I was looking through my MICROpendiums for an article on Picasso, which I did not locate.

I did find another piece, far more interesting, though.

It appeared in your November 1988 issue of MICROpendium, page 10 — Feedback.

This is the question asked by Leo F. Letourneau of Mountain Home, Arkansas:

"There are so many rumors that the TI99 interest is waning, that sometimes I feel like I'm driving a Model "A" and should be in a new Buick. Is there anything to these rumors?"

I'm wondering, in 1996, if possibly Mr. Letourneau may have run out of gas, while the TI99/4A "is still going" — like the Eveready rabbit?

Edward Mandich
West Penn 99ers
East McKeesport, Pennsylvania

Presenter praises Fest-West hosts

I am writing to express my sincere gratitude to the Southwest 99ers of Tucson, Arizona, particularly BJ and Jack Mathis, Tom Wills, Mike Doane and Ed McCullough, for putting on one of the most enjoyable TI99/4A festivals I've ever attended. I'm sure you'll see an article on it in MICROpendium from Gary Cox of the Mid-South 99ers, whom I had the great pleasure of finally meeting. But let me just holler out to the whole world for a moment how happy I was that I was able to attend the marvelous meeting.

I got to see and sit down to dinner with best friend in the world Steve Mehr and my friend Rodger Merritt, who are both partners in Comprodine. I saw Gene Bohot and Ed Butcher from the Pomona, California, User Group again, both of whom treated me fabulously. I saw long-time acquaintance Frank Aylstock from Yorba Linda, California, who runs the Silverado Kennels out there, and so many other wonderful folks too numerous to mention.

I also met many new friends who attended my (way too short) hour-long seminar on "What Are They Doing Now?" trivia, where we discussed Lou Phillips, Craig Miller, Chris Bobbitt, Steve Lamberti and others who are no loner 99/4A community supporters. It sure was fun. I then gave a demo of my Card File 3.1 program and subsequently sold several copies to users, which is always nice.

The Ramada Inn facilities were superb (I brought wife, daughter and daughter's boyfriend along), so the location couldn't have been better.

Berry Harmsen from the Netherlands walked away with virtually every door prize offered, but I can't think of a more deserving 99er anyway. He is probably the most prolific "Fest" attender I've ever had the good fortune to meet.

Anyway — thanks, SouthWest 99ers, for making my Feb. 17, 1996, and the days just before and after something *really* special. You folks are truly awesome.

Bill Gaskill
Grand Junction, Colorado

Long live TI!

I was very happy to see the "Greetings from MICROpendium" card. I knew I'd have another year of wonderful articles and insightful suggestions and updates for our orphans.

Rumor had it — you know, it just wouldn't be the same if not for all the rumors in the TI community. We're like a bunch of old busybodies sitting on the porch passing gossip around the neighborhood. Anyway, rumor had it that the declining readership of MICROpendium would make December 1995 the last issue. And when I couldn't find that issue, I thought my worst nightmares had come true. Thanks for hanging in there.

I'm in Vero Beach, Florida, taking care of my ailing mother. I thought I would be here a month tops and it's been two and likely two to three more. It's been a nerve-racking, sleep-losing, physically draining experience. But I always had my TI and a link to the outside world via the 'net. These helped keep me entertained and grounded in the truly important things in life. One of those important "things" has been and continues to be some of the friendships I've made while being a TIer.

I know this is true for many people the community. It is a community in the most rewarding sense of the word. It is a relationship that even the power of the Pentium can't replace. We've done more with less. Listen to me! I've reaped the benefits with very little effort or input. I'm the beneficiary of countless hours of detailed, often frustrating work by people who may not even recognize my name. I thank them for that and ask them to excuse my laziness. I thank you for keeping me informed and introducing me to some very special artisans in this cyber-world. As we approach the millennium, new ways of communicating and living are yet to be discovered. But I think the kids on the patio will still amaze themselves with Logo II in the GROM port of a very old and dependable TMS9900 series chip that may not destroy the forces of evil at blinding speeds, but allow them to "make something on TV"! That's what it's all about, really, don't you think?

Gary Fitzgerald
Milford, Connecticut

Give authors reprints

Thank you for reprinting a few of my articles which appeared in *Bits, Bytes & Pixels*. You might suggest to newsletter editors in a future editorial that it would be appreciated if a copy of the newsletter in which a reprinted article appears be sent to the author. This would not be necessary if the author was a member of the user group issuing the newsletter. In addition to letting the author know the distribution of his work, this practice could be beneficial to the user group. I have recently joined two user groups after picking up a copy of their newsletters at the M.U.N.C.H. (Massachusetts Users of the Ninety-nine Computer and Hobbyists) fair last September.

Jacques Groslouis
Bathurst, New Brunswick, Canada

(Newsletter editors reprinting Groslouis' articles can send them to him at 1747 Riverbank Dr., Bathurst, NB Canada E2A 4L1 — Ed.)

Send your letters and comments to *MICROpendium Feedback*, P.O. Box 1343, Round Rock, TX 78680.

Arcade Action

Tetris fans note!

Colors

In this strategy game, based on the hit game "Columns", your object is to maneuver falling columns and manipulate their bands of color so that when they hit the bottom of the screen horizontal, diagonal or vertical bands of colors are formed. If you can do that the bands disappear. If you can't, the columns stack up! This hectic game ends when there is no more room left on the screen for falling columns.

An exciting variation of our *Tris*, Colors is an addictive, mind bending game that will have you noticing colored bands everywhere and distract you for hours at a time! By Bill Reiss. Requires a disk system, Extended BASIC or Editor/Assembler, and expanded memory.

E9102 Disk **$14.95**

Two classics!

Balloon Wars

Fly your leaky balloon across the desert on a mission from the British Secret Service, avoiding fire from enemy tanks, artillery and sidewinder! By Chris Bobbitt. Requires 32K, Disk, joystick. Extended BASIC.

E9101 Disk **$4.95**

Column Attack!

Stop the maniacal Flogulus from invading Earth, leveling it, and turning it into shopping malls! By Chris Bobbitt. Requires 32K, Disk, Extended BASIC.

E9103 Disk **$4.95**

Bruce Lee, phono home

Karate Challenge

Evil Dragons have taken over the minds of the students and teachers at your Karate Dojo. In this fast paced action game you must fight your former friends and teachers in order to get a chance to defeat the dragons in mortal combat. Amazing graphics - a challenge to thrill any Karate fan! By Glenn Schworak. Requires 32K, Disk, joysticks, Extended BASIC or Editor/Assembler.

E9104 Disk **$7.95**

Space Shoot 'em up!

Mission Destruct

Evil robots have taken over the moon! You are on a mission to destroy as many moon base reactors as you can before the waves of Death Droids, Space Mines, and the evil Draks overtake your frail craft. Thrilling sound effects and graphic - a good old fashioned "shoot 'em up" that will keep you playing for hours on end! By Glenn Schworak. Requires 32K, Disk, joystick, Extended BASIC or Editor/Assembler.

E9105 Disk **$7.95**

Karate Challenge *and* Mission Destruct *together for only $13.95 - Over 10% off! Order Item* E9106

An all time favorite!

Rock Runner

This arcade quality game by Eric Lafortune combines fascinating graphics, excellent game play, wonderful music and sound effects to be perhaps the game of the year for TI 99/4A arcade game fans. Utilizing a new graphics mode found in all 99/4As, *Rock Runner* displays graphics that put a Nintendo to shame and is as exciting as anything available for any other computer. Each of the 16 screens requires a different strategy - each of the more than a dozen colorful monsters will make it as difficult for you as possible. Requires a TI 99/4A computer, 32K, a joystick, a disk system and an Editor/Assembler module. Not compatible with the Myarc Geneve 9640.

E9107 Disk **$12.95**

A mind bender!

Tris

An extremely addictive mind teaser! In Tris you must rotate and move colorful, falling shapes to fill in the holes in the bottom of the screen. Completed rows disappear but incomplete ones just cause the screen to fill up! Simple to play but difficult to master, Tris will challenge and amaze for hours. This novel game is based on the popular Russian program that perpetually tops the best seller lists for IBM and Apple software, but it has better sound effects and color than any version ever produced! By Jim Reiss and Asgard Software.

E9109 - Module for 4A
E9110 Disk for 9640
$19.95 - cart.
$9.95 - disk

Wet Fun!

Water Works

This game combines fast action with amazing digitized sounds to create a veritable feast for the arcade game fanatic. You've just been given the job of putting in the plumbing in the new 99 story building in your city. What an honor! While in principal it should be simple - you must connect pipe from each floors feed pipe to the faucets - it never is that easy. For one thing you are on a budget. For another, someone should have called the pest control people first. A game for up to 10 players. Requires a TI 99/4A with joystick, 32K, disk and Extended BASIC or Editor/Assembler, or a Myarc Geneve 9640. From David Bishop.

E9111 Disk **$12.95**

Action packed...

Starbase Raiders

Have you ever had the burning desire to save the Universe from nasties? Enjoy avoiding asteroids, and laser fire? *Starbase Raiders*, based on a classic game popular on the Atari 2600, is just the game for you!

Flit around the universe at hyperspace, drop into alien infested sectors, and blast away the baddies before they blast you. Re-fuel and repair at friendly space stations and get back to the war. *Starbase Raiders* is a great shoot 'em up that guarantees dust free joysticks! Written by Jon Delekto. Requires 32K, disk system, Extended BASIC or Editor/Assembler.

E9108 Disk **$12.95**

Strategy Corner

You won't get board in this game!

Classic Checkers

Who doesn't remember spending hours as a youth playing this popular board game? The "Rodney Dangerfield" of games, serious Checkers players believe that Chess is for those that confuse complexity with depth. While on the surface Checkers is simpler, it is a game with a tradition at least as long as that of Chess, and a game that can occupy strategists for hours on end.

Classic Checkers is an all new implementation that allows you to play against the computer, or two people to play against each other using the machine as a game board. Large, beautiful graphics and support for joysticks, keys and the Asgard Mouse make this a game all will enjoy. By Chris Bobbitt. Requires expanded memory, a disk system and either Extended BASIC or the Editor/Assembler modules, and optionally an Asgard Mouse.

E9112 Disk **$14.95**

Quality Time!

Tournament Solitaire

A game to appeal more to the intellect, *Tournament Solitaire* is a collection of seven popular variations of Solitaire, including *Golf, Pyramid, Klondike, Canfield, Calculation, Pile Up* and *Corners*. Each of these games can be played individually, or one after the other in a tournament where the score from one is passed onto the next. Fast game play and well defined graphics mean you'll never have to wait for the computer or try to figure out what your hand is. An excellent package for the Solitaire fan, includes an extensive manual for the novice as well as the experienced player. By William Reiss. New version 1.01. Requires Extended BASIC, 32K and a disk system.

E9115 Disk **$14.95**

Space simulation...

High Gravity

This truly amazing simulation of gravity in space is both robust fusing and educational - shoot objects through conflicting gravity fields. Newtonian physics has never been better explained. Highly rated by MICROpendium. By Tom Wible. Requires 32K, Disk, joystick, Extended BASIC or Editor/Assembler.

E9113 Disk **$5.95**

The obsession of the Orient comes West in...

TI-Pei

This classic game of solitaire with tiles from the Far East was first introduced to the U.S. in the 1930's. Since then it has fascinated young and old alike. A game of beauty and symmetry, the object is to remove like tiles from a pile two at a time. Tiles can only be removed from outside edges of the stack, however. While simple in concept, *TI Pei* is a game that is very hard to master - making card games seem easy by comparison to beat.

This variation of Mahjongg offers features that make the game more enjoyable than playing it by hand. *TI Pei* will find all the like tiles for you that can be removed, allows you to create your own custom designed stacks, and even allows you to use a joystick, keyboard or mouse to select pairs of tiles. Feature filled, *TI Pei* is one of the most addictive strategy games for the TI 99/4A or Myarc Geneve 9640.

By Bill Reiss. *TI Pei* requires expanded memory, a disk system, and either Extended BASIC or the Editor/Assembler module. Includes both Geneve and TI 99/4A versions.

E9114 Disk **$14.95**

Graphics Adventures

Double treat...

Legends
Adventures in Edenland

This animated graphics adventure has been called the best of its kind for the TI 99/4A by every reviewer! Rated all "A's" by MICROpendium magazine, you must explore a vast island with four dungeons, forests, swamps, mountains and inns. Along the way you fight monsters, cast spells, drink potions, talk to the inhabitants and generally have a good time! The unique 3D animated graphics in *Legends* are unmatched by any other game! This is the most incredible adventure ever made for the 99/4A. By Dorin Grancsa and Ed Johnston. Requires Extended BASIC, 32K, and a disk system.

E9126 Disk **$19.95**

For a limited time only, get Both Legends and Legends II, together for only $29.95!

Together both of these games are an adventure you can't miss. Highly rated by all reviewers, the Legends series is a 99/4A-9640 classic.

Order Item E9147

The quest continues in...

Legends II: The Sequel

This outstanding sequel to *Legends* finds you shipwrecked on the Island of Famble. Imagines from home. You have to explore this vast island, fight unknown monsters, explore a city and plumb the depths of dungeons in order to raise enough dough to buy passage home. As full of interesting characters and situations as the original, this 3 disk adventure has excellent new graphics, new spells, monsters, and the wit and humor that made *Legends* so much fun. The original was called "The Best Graphics Adventure for the TI 99/4A". The sequel is even better! By Dorin Grancsa. Requires Extended BASIC, Disk and 32K.

E9128 Disk **$17.95**

For the Tunnels of Doom module fan...

Doom Games I

The package that started it all! Doom Games I is one of the all time best-selling packages ever for the 99/4A. Thrill to the "Daring Adventure in K-Mart", where you'll outwit housewives in search of the illusive blue light special. Chills during the search for the Eight Orbs of Dragonkind. Follow the exploits of the Good Doctor from Gallifrey. Four games in all! Requires a Tunnels of Doom module.

E9130 Cassette
E9131 Disk
$7.95

Doom Games II

Volume two of the "Doom series", finds the Nerds getting their Revenge through the help of Dorin Grancsa, the author of the popular *Legends* series. Also plumb the depths of space in Space Mine, re visit the Doctor in Gallifrean Adventure, and outwit the maniacal computer in the Computer Quest! Requires the Tunnels of Doom module.

E9132 Cassette
E9133 Disk
$7.95

Doom Games III

Tunnels of Doom takes a left at humor and gets off in *Doom Games III* by Ken Gilliland! While visiting the Burger King at Kalamazoo you find a startalling revelation about "The King" - it wasn't him that was sighted but his Evil Twin brother! Dust off your Blue Suede Shoes and start rockin' in the Shopping Trip. You'll have to save poor old Uncle Zack from L.A. Street Gangs gone berserk. Requires Tunnels of Doom module.

E9134 Cassette
E9135 Disk
$7.95

The Volcano Fortress

Five great games for the Tunnels of Doom module from John Behnke - the author of TOD Editor (see page 6). In Assault the City you'll stop Evil in the City below. In Computer Nightmare you'll prevent an Evil computer (probably a PC), from taking over the world. Dark Tower is gothic adventuring at its best. In The Volcano Fortress you'll assault the fortress of a Mad Scientist who is out for World Conquest. Save the world 5 times before dinner! Requires the Tunnels of Doom module.

E9136 Cassette
E9137 Disk
$7.95

Make your own adventures...

T.O.D. Editor

This remarkable menu driven program allows you to customize and create all new games for use with the Tunnels of Doom module. Modify graphics, stories, monsters, treasure and much more! A "must" for the serious graphics adventure player. By John Behnke. Requires expanded memory, a disk system, and Extended BASIC.

E9138 Disk **$12.95**

Text Adventures

An introductory adventure...

Witch's Brew

An excellent introductory game for the Adventure module! In *Witch's Brew* a witch has let loose spells across the land. Can you find the witch and remove the spells? By David Bishop. Requires the Adventure module.

E9118 Cassette
E9119 Disk
$5.95

Challenging action!

Wizard's End

A hunt for the Adventure module - 3 multi player game with monsters, spells and treasure in the traditional Dungeons & Dragons™ mold. Guide your party through this two part adventure, gaining skills, overcoming traps and foes. For the advanced player this game is a must for the serious adventure player. By David Bishop. Requires the Adventure module.

E9120 Cassette
E9121 Disk
$9.95

A Gothic masterpiece!

Castle Darkholm

An excellent two part adventure for the Adventure module by Randy Cook. *Castle Darkholm* combines elements of gothic horror novels with the thrill of detective stories along with the rather unique twist of dungeon adventure. You are entrusted by the Council of Elders with the task of removing the Evil Baron Manfred Hitler Von Darkholm before he slaughters all in his kingdom.

E9122 Cassette
E9123 Disk
$7.95

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MAGINE 650 MEGABYTES OF SOFTWARE WRITTEN FOR THE TI99/4A AND 9640 ON ONE CDROM. THAT IS WHAT YOU WILL HAVE AT THE END OF YOUR SUBSCRIPTION TO THE TI 99/4A CDROM. FOR THE PRICE OF 30-50 PUBLIC DOMAIN DISKS YOU WILL RECEIVE 1900 DISKS INITIALLY AND MANY MORE IN PERIODIC UPDATES UNTIL YOU WILL HAVE 650 MEGABYTES OF TI SOFTWARE. THATS A LOT OF SOFTWARE FOR YOUR COST OF ONLY $100. SEND YOUR ORDER FORM WITH A CHECK OR MONEY ORDER PAYABLE TO MILLBRAE CD ROM, 350 MARCELLA WAY, MILLBRAE, CA 94030. VOICE (415) 697-1108. FAX (415) 697-7406.

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IF YOU CHECKED HORIZON SCSI IT IS CONNECTED TO: TI99/4A ___ 9640 ___

I USE THE FOLLOWING OPERATING SYSTEM WITH MY CDROM PLAYER:

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SYSTEM 7.X ___ MYARC DOS/MDOS) ___ VERSION _____ TI99/4A ___

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Fest West '96

New software, CD-ROM make debuts at event

Story and Photos
By GARY W. COX

The "Best Fest in the West" is what the TI Fest West has been called in years past. Certainly Fest West '96 was still the best in the west, although vendor and user attendance was not what it used to be... The weather for the Fest West '96 could not have been better, with temperatures in the middle 70s and clear skies. The hotel was nice, with the entrance to the fair room opening to an outside garden area with plenty of space, all of which made for a pleasant atmosphere.

Many well-known faces in the TI community were present at the TI Fest West '96! One such person whom I have not seen in a while was Ken Gilliland of Notung Software. Ken had a new easy to understand and use solitaire game cloned from the Windows solitaire game. The game can be an add-on to the TI Casino or used as a standalone program. Ken also had his usual assortment of software, including a book called *How to Use Printer's Apprentice and Not Go Insane*. Ken also demonstrated his Internet Web page containing many of Ken's paintings as well as a listing of what he offers for the TI99/4A. The Internet address of Ken's page is:
http://ourworld.compuserve.com/homepages/notung/

Rodger Merritt and Steve Mehr were present from Comprodine Software with a wide assortment of their software at reduced prices! The well-known programs that they were selling included Hyperterminal, Maxflix, Grampacker and Reminders, to name just a few of a long list of software.

A new vendor to the TI community as well as new for Fest West was Red Baron Software, operated by
Richard and Shawn Baron. All of the software presented by Red Baron Software is completely new and very reasonably priced. Red Baron software selections include Our Solar System ($10) which displays pictures and statistics on various planets. Also available on disk or in printed version was Teach Yourself Assembly ($5) which is an excellent tutorial on TI assembly language. This tutorial compares Extended BASIC commands with their assembly language equivalents; thus someone who can program in XB should be able to more easily understand assembly. Furthermore, a disk of prewritten assembly language routines ($5) was available to aid in writing assembly language programs without having to reinvent the wheel. Also available is a new Tetris game ($3) plus an enhanced version ($2 more) which includes cheat codes for those who can't win the conventional way. Finally for only $1 was a program to view TI-Artist pictures.

Larry and Carey Hoffman of Tex-Comp Ltd were present at the event and, while they did not have a large variety of items for sale, they were passing out a very impressive and extensive catalog of products that Tex-Comp sells. Furthermore, Tex-Comp has a working prototype of a memory expansion daughter board for the Super AMS (Asgard Memory Systems) card which will allow for 1mb of memory in a TI99/4A system. According to Larry Hoffman, interest in the daughter board will dictate whether the card will be mass produced.

Kyle Crichton and Jay Norlund of Competition Computer had on display their new TI CD-ROM which currently contains 120mb of public domain and shareware programs obtained from various sources including user group libraries. A subscription to the CD will include updates as more software is added. However, the TI CD ROM can *not* currently be used on the TI since the DSR (device service routine) to control a CD-ROM on the TI is not complete on the SCSI (small computer systems interface) card. Thus the CD must be used on a PC system and accessed via a TI Emulator or transferred over to a TI or Geneve via a "null modem cable" and communications software. Kyle mentioned that he is in the process of acquiring some materials marketed by Asgard Software and is looking into reproducing the TI manuals on the CD-ROM.

Don O'Neil of Western Horizon Technologies was present selling SCSI cards which now work with the 4A to save and load programs from a SCSI drive. Dc also had upgraded EPROMs for their AT keyboard interface which fixes a problem that exists when the 4A goes into screen save mode and will not come back from it. By the way WHT also performs repairs on

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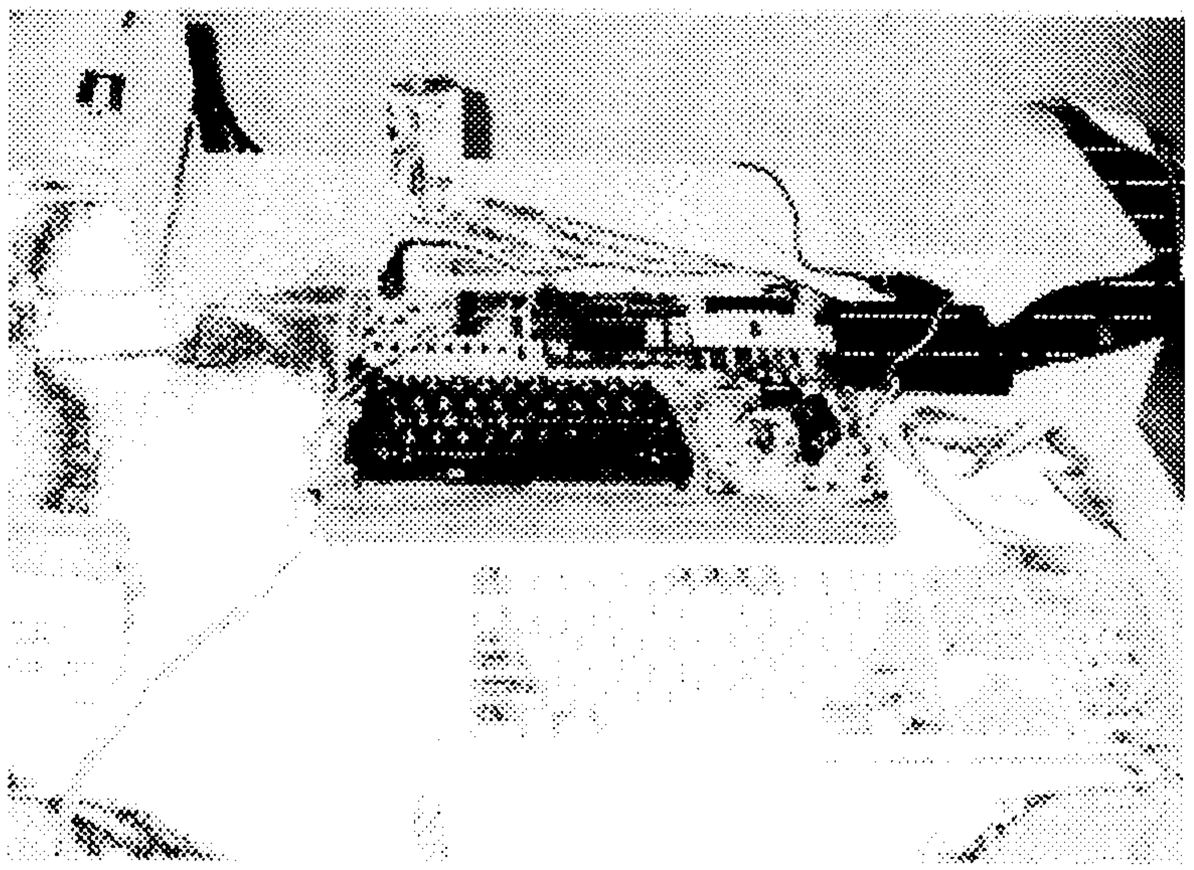

The Western Horizon Technologies keyboard interface for the TI. The interface, which is shown in a TI console without its cover, connects a PC keyboard to the TI console.

FEST-WEST —

(Continued from Page 8)

most 99/4A and Geneve equipment.

The Southwest Ninety-Niners were not only the host of the TI Fest West '96 but are the producers of the Super AMS card which was available for purchase at the fair. The SW 99ers also had a variety of software and other items for sale, plus the Jim Peterson library was available for anyone to copy on a self-service basis. Among those of the SW 99ers present were BJ Mathis, Jack Mathis, Tom Wills, Mike Doane, Richard Baron and Jeane Matthews just to name a few.

Dave Connery of the Chicago TI Users Group had one of the largest assortments of software and equipment at TI Fest West. Gene Bohot and Ed Butcher of the Pomona Valley 99ers had a nearly equal amount of equipment, including some hard-to-find items such as a GRAM Kracker, Myarc Expansion System and a

This Geneve system combined 5.25 and 3.5-inch floppy drives as well as hard drives.

CorComp Expansion System. Earl Raguse of the Orange County Users Group was present selling out their stock of equipment. Jack and Myrna Workman and Hazel Knight represented the Vast 99 Users Group with a variety of Page Pro pictures which can be printed on paper and cut out and folded to make dolls, airplanes etc. Other user groups with miscellaneous items include the Southern California Computer Group (SCCG) and the TI North County 99ers.

While representatives were present from various user groups across the country, Berry Harmsen from Holland certainly traveled the greatest distance not to mention he won several items.

Last, but not least, I finally met in person Bill Gaskill, who sells a variety of products including Card File v3.1, Check Plus v3.0, Mailing List Manager v1.2 and Microdex 99. However, Bill is most well-known for his many TI history articles published in MICROpendium and various newsletters around the country. In the seminar that Bill Gaskill put on we had a discussion of where people famous in the TI community are now and just generally what is going on in the TI community. Through the discussion I discovered that Ramcharged Computers have purchased all of Texaments products and Steve Lamberti of Texaments is now working in Oklahoma with Barry Boone at Creative Labs Inc. (makers of the Sound Blaster). Chris Bobbitt (Asgard Software) is now working for the National League of Cities as a PC troubleshooter. I discovered that Dennis Faherty, who wrote TI-Artist (as well as TI-BASE), made around $30,000 on TI-Artist but did not do very well on TI-BASE. Craig Miller of Miller Graphics (GRAM Kracker) is still writing programs, but for other systems, and is now living in Diamond Bar, California. Roger Dooley of Tenex is now in the PC business. Lou Phillips is now a vice president with Chase Manhattan Bank in New York. I wonder if they use Geneves in their bank? I suggested to Bill Gaskill that he write an article on "where they are now" telling where the former TI community front runners are now, so perhaps we will see something more on this issue sometime soon.

The main exhibit room at Fest West was a busy place.

I definitely had a great time at TI Fest West '96. I commend Tom Wills, BJ Mathis and many others in the South West 99ers who worked hard to make this event possible. I must say that the event was very well organized and a *free* lunch was even provided for all the fair goers!

Finally I had the opportunity at TI Fest West '96 to talk some with Bill Gaskill and find out a little about him. Bill is definitely a TI99/4A historian, as is evident by

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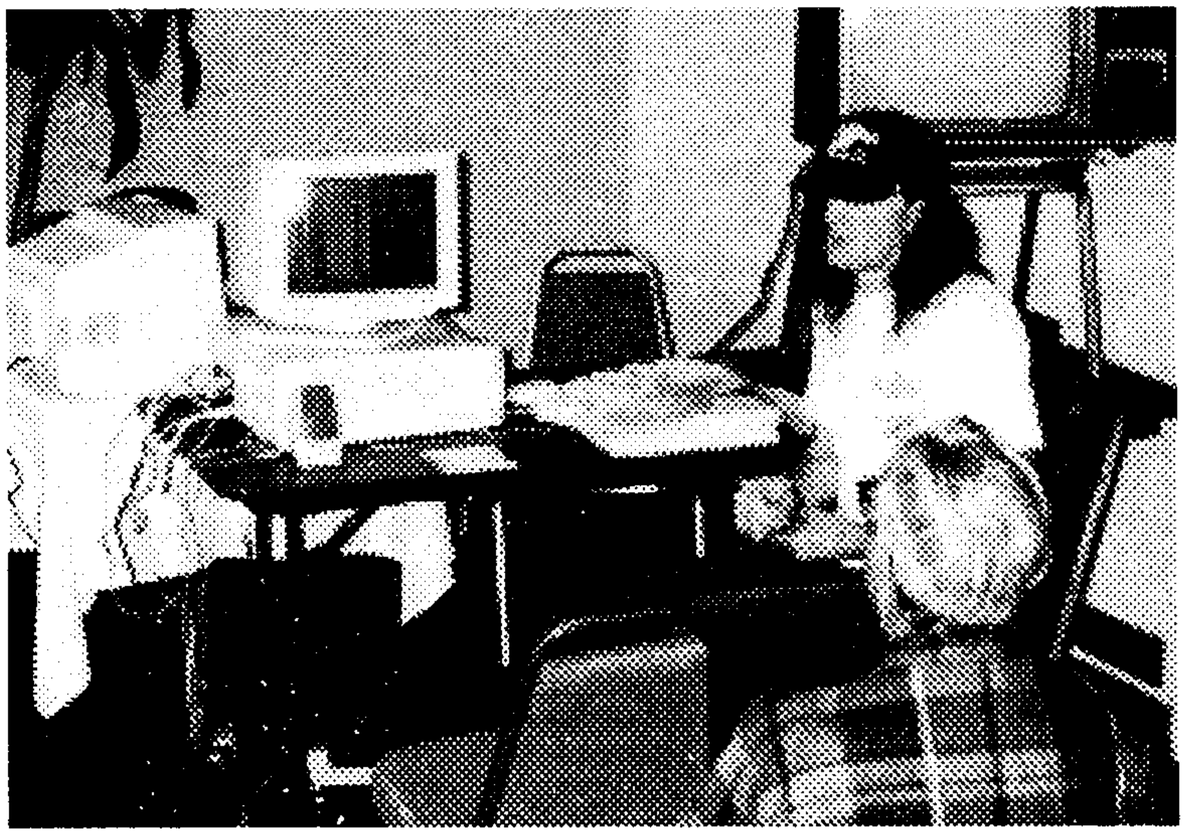

Kyle Crichton of Competition Computer gives a demo at Fest West.

FEST-WEST —

(Continued from Page 9)

the articles that he writes, and I was curious as to how he got started and where he obtains all his information on the TI. Thus, I discovered that Bill Gaskill is 46 years old, is married and has a daughter (17) and a son (19). Bill's "real job" is a lieutenant for the police department in Grand Junction, Colorado.

Bill Gaskill, left, well-known chronicler of the TI, went home with plenty of TI paraphernalia. One of the Fest West organizers, Tom Wills, keeps busy.

Bill said that his "romance" with the TI99/4A started when he was in college and used a TI99/4A. After the class he purchased a Commodore 64 and the quality of the C64s was so bad that the first and second C64 didn't even work out of the box. Then in January 1984 TI bailed out of the home computer market, JC Penney had a TI99/4A for only $49.95 which he purchased. In 1985 Bill had his first ad in MICROpendium where he sold copies of Personal Auditor, also listed in Tenex's catalog.

Then he started joining various TI users groups across the country, joining around 10 groups. In researching the history of the TI99/4A he obtained a great deal of information from Jerry Price, former vice president of Tex-Comp, as well as Steve Mehr of Comprodine Software. It seems that in obtaining all this information he wrote a great many letters and made many phone calls. Bill says that his b ment is one-third full of just TI99/4A stuff. Bill said that his "very inquisitive nature" is how he has obtained so much information.

I asked Bill why he is still involved with the TI99/4A and his answer was "it's the people who keep me involved" and "the reason we come to the fests and fairs is to see the people and to sell back to them what we bought the year before.!" I asked Bill if he will ever give up the TI99/4A, and he said, "As long as there is another 99er involved I will be," and I think that holds true for many of us dedicated TI99ers.

I would like to end by saying that I too stick with the TI99/4A, not only because it was my first computer and it is certainly a classic, but it is the people in the TI community that keep it together and make it fun. Please support the vendors, the people, the user groups, the fairs and keep our community alive. Most of all support MICROpendium magazine, which continues to support us, as without it we would have no TI community!

Remember, other TI fairs coming up are the Multi Users Group Conference in Cleveland, Ohio, May 25 and the Chicago TI Faire Nov. 9 in Evanston, Illinois.

TI Fest West '96 vendor listing

Bill Gaskill, 2310 Cypress Court, Grand Junction, CO 81506, (970) 242-8842

Chicago TI Users Group, attn: Dave Connery, P.O. Box 7009, Evanston, IL 60204

Competition Computer Products, 350 Marcella Way, Millbrae, CA 94030, 1-800-471-1600, (415) 697-1108, fax (415) 697-7406

Comprodine Software, 1949 Evergreen Ave., Fullerton, CA 92635 (714) 990-4577 (variety of software)

Notung Software, 7647 McGroarty St., Tujunga, CA 91042, (818) 951-2718 (now carrying MS software), email: 102277.3452@compuserve.com

Orange County 99 User Group, 17161 Edwards, Huntington Beach, CA 92647 (714) 847-5875, attn: Earl Raguse

Pomona Valley 99ers, c/o Gene Bohot, 11824 Butterfield Ave., Chino, CA 91710, (909) 628-6886

Red Baron Software, 8427 E. Cambria, Tucson, AZ 85738, (520) 885-4812

Southern California Computer Group (SCCG), P.O. Box 152535, San Diego, CA 92195, (619) 264-6515, BBS (619) 263-9135

SouthWest 99ers, P.O Box 17831, Tucson, AZ 85731, attn: Tom Wills, (520) 886-2460, BBS (520) 290-6277

Tex-Comp Ltd., 425 East Arrow Highway, Suite 732, Glendora, CA 91740-5684 Phone: 1-800-846-3474, (818) 339-8924 or fax (818) 858-2785 (recently purchased TM Direct Marketing stock), email: texcomp9@idt.liberty.com

TI North County 99ers, 16560 Casero Rd., San Diego, CA 92128

Vast 99 Users Group, P.O. Box 37725, Phoenix, AZ 85069, (602) 437-3187, BBS (602) 267-1419

Western Horizon Technologies, c/o Don O'Neil, 3297 Woody Lane, San Jose, CA 95132, (408) 934-0352, fax (408) 934-9682.

THE ART OF ASSEMBLY — PART 57

We interrupt this program...

By BRUCE HARRISON

We get letters from readers, and even phone calls now and then. This time Terry Blovas called to ask about the use of User Interrupts. His goal was to read the Cor-Comp real time clock during a User Interrupt and to place the time on-screen while other programs were running in the "foreground." The reading of the clock would have to be done by a DSRLNK operation, and he was concerned about whether the DSRLNK could be made to operate during a User Interrupt.

IT'S ANOTHER YES, BUT!

The answer is yes, you can operate a DRSLNK operation during a User Interrupt, but there are some unexpected side effects from such an operation. After sending off some quick help to Mr. Blovas, we started doing some experimenting with the combination of DSRLNK and User Interrupt. To give you an appreciation for the strange interaction, we'll start this month's column with a simpler case, in which things behave as we expect them to.

The first part of this month's sidebar is a little experiment that uses the User Interrupt to write to VDP RAM. This is just a "nonsense" program called ATEX. It slowly fills the screen with the "@" symbol by writing one per 1/60th second via a User Interrupt. When that's finished, it swaps the bytes in R1, and starts again at the top of the screen, so that space characters get written in a similar fashion, slowly clearing the screen. Just to show it can be done, the interrupt then puts the legend "FINISHED A CYCLE" in the middle of the screen, and starts over again with the @ symbol.

While all this is happening during the interrupts, the main program is just cycling endlessly through the "Key loop" at label KEYIN. So long as no key is pressed, this will continue all day. If a key is pressed, the main program will exit its loop, clear the word at >83C4, load the GPL workspace, and then go back to the GPL interpreter. This all works as planned, so the key loop does sense a keypress, and the interrupt goes about its business because the loop includes LIMI 2 and LIMI 0. Mr. Blovas was under the impression that you coudn't write to VDP during an interrupt, so we sent along a copy of ATEX to show him that this could indeed be done, both by VSBW and VMBW. (You can also read from VDP by VSBR and VMBR during an interrupt.) To add some excitement, you can comment out the instruction CLR @>83C4 just after JNE KEYIN. When that's assembled and run, pressing a key will get you out of the program to Editor/Assembler's PRESS ENTER TO CONTINUE, but the interrupt will continue doing its thing, even after you've pressed ENTER, obliterating the E/A main menu in due course.

BUT WITH DSRLNK, ...

In the second part of the sidebar is another program, and this one uses DSRLNK during the interrupt. Mr. Blovas was under the impression that DSRLNK was itself an interrupt. We assured him that the TI DSRLNK is not itself an interrupt, and that it should be able to operate during one. Here we've set it up so that on the first pass through the interrupt cycle, the interrupt opens the program's source file for input, then on each successive cycle it reads a record from that file. To save ourselves trouble, we placed the VDP Buffer for this file access at the start of row 12 in the screen. This way we get to see the records as they come in from the disk without having to put them on-screen ourselves.

We immediately ran into some difficulty. First, the DSRLNK uses parts of the CPU RAM Pad to do its work, and this tended to mess up the operation of the main program. Thus we put in loops at the beginning and end of the interrupt's code to stash away the 256 bytes starting at >8300, then to put those back before leaving the interrupt code. That allowed things to proceed, and sure enough the source file's contents get shown on-screen, one record each 1/60th of a second. There was just one hitch. While this file was open, pressing a key had no effect at all. Only after the file was closed and the interrupt disabled would our main program's BLWP @KSCAN have any effect. The program behaves as if KSCAN were a couple of NOP instructions as long as the Interrupt cycle has a file opened! We know that the main program is still executing, but KSCAN just doesn't work! To reassure ourselves, we wrote a different version of this program, in which the DSRLNK happens in the main program, not during an interrupt, and in that case KSCAN continues to function as usual while the file is open.

Now, before the letters come in, we'll admit that we don't know why this is so. We've nosed around in KSCAN with a disassembler, and haven't found any clues as to how KSCAN could "know" that an interrupt had a file opened, nor how that would affect KSCAN's operation. There probably is a reason for this behavior, but TI isn't saying, and we haven't figured out either the why or the how. If any of our readers knows, we'd be very happy to hear about it.

IT GETS WORSE

Up to this point, we're talking about the DSRLNK vector that's built into the E/A module, operating from low memory under E/A Option 3. In anticipation of the need to operate outside the E/A environment, we tried using the Warren/Miller general-purpose GPL/DSR link vectors. This created yet another problem. The Warren/Miller DSRLNK uses its GPLLNK to perform the file operations, and that introduces another complication, in that the GPLLNK branches to >0060 in the console ROM. When the code starting at >0060 runs, there's a LIMI 2 and LIMI 0 at >0070 through >0077. This will cause a reentry into our user interrupt, which of course we can't handle. Thus, in the case of the Warren/Miller DSRLNK, we have to insert an instruction into our interrupt code itself to shut off the user interrupt before proceeding to the DSRLNK part. That's shown as a commented out line just after JNE PUTPAD in the sidebar. Doing it this way means that after the interrupt code is finished for one cycle, the loop at GETPAD will put back the previous state of >83C4, thus reactivating

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THE ART OF ASSEMBLY —

(Continued from Page 11)

the user interrupt for the next cycle.

This is getting pretty muddy, isn't it? Well let's just go on with what happens when the end of file is reached. The code at label CLSF1 executes, first closing the open file, then clearing the "file open" flag, and then there's that mysterious instruction CLR @SAVPAD+>C4. What's that? By clearing the word at SAVPAD+>C4, we allow the code starting at CHEX to put back the RAM Pad contents as before, but when this is done, the word at >83C4 will be cleared, so our user interrupt will no longer be in effect.

OTHER THINGS TO TRY

There are some nifty little experiments you can do with the stuff in the sidebar. For example, when the file end is reached in running DSREX, pressing the space bar, or any other key but Enter, will cause the file to be reopened and shown again. If you're really curious, try pressing Function-= (Quit) while the file records are flashing by. The file access will stop while you're holding down Function-=, then start up from where it left off when you release either of those keys. If you're quick about it, you can stop and start the file reading several times before the end is reached. Something, however, will "remember" that you pressed Function-=, so when the file ends, you'll go back to the startup title screen or RAMdisk menu, depending how you're configured. We could even make a "game" of this, seeing who can stop the file the most times before it ends. Perhaps our friend Mickey Cendrowski? But seriously, folks, here's yet another mystery in the inner workings of our favorite computer, and we haven't a clue what' ing this to us.

When the file end is reached in running DSREX, pressing the space bar, or any other key but Enter, will cause the file to be reopened and shown again.

Our advice to Mr. Blovas was to mak sure that he closes that file from which hi time information comes before the RTW ends his interrupt. If he heeds that advic then he'll most likely be able to achieve hi goal, at least while his own programs ar running. Of course he'll still have som other problems to overcome. For exampl if the clock function is to work on back ground while other programs are runnin he'll have to find a "safe" place for his in terrupt code, so that the programs he load won't overwrite his interrupt code. Tha could turn out to be a "killer," since peopl who write programs for the TI usually don anticipate having to leave room for othe things in the expansion memory.

Since we write these things so far in advance, we've sent M Blovas a copy of all this long before it appears here in your MI CROpendium. Perhaps by the time you see this, he'll have hi background clock display working, at least on his own system. W don't have any real-time clock on our own systems, so we can even test his code for him.

Once again we've demonstrated how far we'll go to help any of our readers. You, too, can take advantage of our nature b sending any plea for help, either through Reader to Reader or di rect to your author. We'll even promise to spell your name co rectly! We're available at: Bruce Harrison, 5705 40th Place, Hy attsville, MD 20781; phone (301)277-3467.

SIDEBAR 57

```
** SIDEBAR 57
* PLAYING WITH INTERRUPTS
*
*
* ATEX
* STORED AS ATEX/S
* EXPERIMENT WITH INTERRUPTS
* PUBLIC DOMAIN
*   CODE BY: Bruce Harrison
*
      REF VSBW,VMBW,KSCAN REF UTILITIES
      DEF START         DEFINE ENTRY POINT
*
* FIRST SECTION OF CODE JUST SETS THINGS UP
*
START  LWPI WS            LOAD OUR WORKSPACE
      MOV  @INTLOC,@>83C4 ACTIVATE INTERRUPT
      LI   R1,>2040       SPACE IN LEFT BYTE, @ IN RIGHT BYTE
*
* CODE AT SWAP1 GETS REPEATED AFTER SCREEN FINISHED
*
SWAP1  SWPB R1              SWAP SO WE START WITH @ IN LEFT BYTE R1
      CLR  R0             SCREEN ORIGIN
      LI   R2,768         768 TO GO
*
* MAIN PROGRAM CODE HERE JUST WAITS FOR A KEYPRESS,
* BUT KEEPS ALLOWING INTERRUPTS SO THE USER INTERRUPT
* WILL GET SERVICED
*
KEYIN  BLWP @KSCAN        SCAN KEYBOARD
      LIMI 2              INTERRUPTS ON
      LIMI 0              INTERRUPTS OFF
      MOV  R2,R2          IS R2 ZERO?
      JEQ  SWAP1          IF SO, BACK TO SWAP1
      CB   @>837C,@ANYKEY KEY PRESSED?
      JNE  KEYIN          IF NOT, REPEAT
      CLR  @>83C4         ELSE CLEAR USER INTERRUPT
      LWPI >83E0          LOAD GPL WORKSPACE
      B    @>6A           BACK TO GPL INTERPRETER
*
* HERE'S THE INTERRUPT CODE
```

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THE ART OF ASSEMBLY —

(Continued from Page 12)

```
USRINT BLWP @CHVECT     USE CHVECT TO WRITE A CHARACTER
INTEX  RT               THEN RETURN TO INTERRUPT SERVICE ROUTINE
*
* THE VECTOR CHVECT DOES THE SCREEN WRITING
* IT USES THE MAIN CODE'S WORKSPACE
*
CHVECT DATA WS,CHG1     USES OUR OWN WORKSPACE, CODE AT CHG1
CHG1   BLWP @VSBW       WRITE LEFT BYTE R1 TO SPOT POINTED BY R0
       INC  R0          POINT AT NEXT SPOT
       DEC  R2          DECREMENT COUNT IN R2
       JNE  CHEX        NOT FINISHED
       CB   R1,@ANYKEY  DOING SPACES?
       JNE  CHEX        IF NOT, JUMP
       MOV  R1,R3       STASH R1 FOR NOW
       LI   R0,11*32+5  ROW 12,COL 5
       LI   R1,FINMSG   FINISHED
       LI   R2,17       17 CHARACTERS
       BLWP @VMBW       WRITE THAT
       CLR  R2          THEN CLEAR REG 2
       MOV  R3,R1       GET OLD R1 BACK
CHEX   RTWP             RETURN WITH WORKSPACE POINTER
WS     BSS  32          OUR WORKSPACE
INTLOC DATA USRINT      INTERRUPT'S ADDRESS
FINMSG TEXT 'FINISHED A CYCLE'
ANYKEY BYTE >20         HEX 20 FOR COMPARISON
       END
```

PART TWO

```
* THE DSR LINK PROBLEM
*
* DSREX
* STORED AS DSREX/S
* EXPERIMENT WITH INTERRUPTS
* PUBLIC DOMAIN
*   CODE BY: Bruce Harrison
*
       REF DSRLNK,VSBW,VSBR,VMBW,KSCAN
       DEF START        DEFINE ENTRY POINT
PAB    EQU  >1000       PAB LOCATION IN VDP RAM
BUF    EQU  11*32       BUFFER AT ROW 12, COL 1
PABPNT EQU  >8356        NAME LENGTH POINTER
STATUS EQU  >837C        GPL STATUS BYTE
*
* FIRST SECTION OF CODE JUST SETS THINGS UP
*
START  LWPI WS           LOAD OUR WORKSPACE
SETUI  MOV  @INTLOC,@>83C4 SET USER INTERRUPT
*
* MAIN PROGRAM CODE HERE JUST WAITS FOR A KEYPRESS,
* BUT KEEPS ALLOWING INTERRUPTS SO THE USER INTERRUPT
* WILL GET SERVICED
*
LIM    LIMI 2            INTERRUPTS ON
       LIMI 0            INTERRUPTS OFF
KEYIN  BLWP @KSCAN       SCAN KEYBOARD
       CB   @ANYKEY,@STATUS KEY STRUCK?
       JNE  LIM          IF NOT, BACK TO LIM
       CB   @>8375,@ENTERV "ENTER" PRESSED?
       JEQ  STPIT        IF SO, STOP
       JMP  SETUI        ELSE RE-SET USER INTERRUPT
STPIT  CLR  @>83C4       CLEAR USER INTERRUPT
       LWPI >83E0        LOAD GPL WORKSPACE
       B    @>6A         BACK TO GPL INTERPRETER
*
* HERE'S THE INTERRUPT CODE
*
USRINT BLWP @DSVECT      USE DSVECT TO OPEN OR READ THE FILE
INTEX  RT                THEN RETURN TO INTERRUPT SERVICE ROUTINE
*
*
DSVECT DATA WS,DSRACT    USES OUR WORKSPACE, CODE AT DSRACT
DSRACT LI   R9,>8300     POINT AT RAM PAD
       LI   R10,SAVPAD   AND PLACE TO SAVE IT
       LI   R4,256       256 BYTES TO MOVE
PUTPAD MOVB *R9+,*R10+   MOVE A BYTE
       DEC  R4           DECREMENT COUNT
       JNE  PUTPAD       RPT IF NOT ZERO
*      CLR  @>83C4       KILL THE USRINT FOR NOW
       MOV  @F1FLG,R0    IS FILE OPEN?
       JNE  REDREC       IF YES, JUMP
FNOK   LI   R0,PAB       POINT AT PAB
       LI   R1,PABDT     AND PAB DATA
       MOV  @8(R1),R2    GET NAME LENGTH
       AI   R2,10        ADD 10
       BLWP @VMBW        WRITE PAB
       AI   R0,9         ADD NINE
       MOV  R0,@PABPNT   PUT AT POINTER
       BLWP @DSRLNK      USE DSR LINKAGE
       DATA 8            FOR FILE ACCESS
F1OK   INC  @F1FLG       INDICATE FILE OPEN
REDREC LI   R0,PAB       POINT AT PAB
       MOVB @READF,R1    READ OPCODE
       BLWP @VSBW        WRITE THAT
       AI   R0,9         ADD NINE
       MOV  R0,@PABPNT   PUT AT POINTER
       BLWP @DSRLNK      USE DSR LINK
       DATA 8            DATA FOR FILE
       JNE  CLBU         IF NO ERROR, JUMP
       LI   R0,PAB+1     POINT AT PAB PLUS 1
       BLWP @VSBR        READ THE BYTE
       SRL  R1,13        SHIFT RIGHT
       CI   R1,5         "END OF FILE" ERROR?
       JEQ  CLSF1        IF SO, JUMP
       CLR  @SAVPAD+>C4  ELSE CLEAR USER INT
       JMP  CHEX         THEN JUMP
CLSF1  LI   R0,PAB       POINT AT PAB
       MOVB @CLSF,R1     CLOSE OPCODE
       BLWP @VSBW        WRITE THAT
       AI   R0,9         ADD NINE
       MOV  R0,@PABPNT   TO POINTER
       BLWP @DSRLNK      USE DSR LINK
       DATA 8            CLOSE FILE
       CLR  @F1FLG       CLEAR "OPEN" FLAG
       CLR  @SAVPAD+>C4  CLEAR USER INTERRUPT
       JMP  CHEX         THEN TO EXIT
CLBU   LI   R0,PAB+5     LENGTH OF RECORD
       BLWP @VSBR        READ THAT
```

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THE ART OF ASSEMBLY —

(Continued from Page 13)

```
       SRL  R1,8          RT. JUST.
       JEQ  CHEX          IF ZERO, JUMP
       LI   R2,80         MAX LENGTH
       S    R1,R2         SUBTRACT ACTUAL
       LI   R0,BUF        POINT AT BUFFER
       A    R1,R0         ADD ACTUAL
       MOVB @ANYKEY,R1    SPACE IN R1
CLRBUF BLWP @VSBW         WRITE A SPACE
       INC  R0            MOVE ONE SPOT
       DEC  R2            DEC COUNT
       JNE  CLRBUF        RPT. IF NOT ZERO
CHEX   LI   R9,SAVPAD     POINT AT SAVED RAMPAD
       LI   R10,>8300     AND AT RAMPAD
       LI   R4,256        256 BYTES
GETPAD MOVB *R9+,*R10+    MOVE ONE
       DEC  R4            DEC COUNT
       JNE  GETPAD        RPT. IF NOT ZERO
       RTWP               RETURN WITH WORKSPACE POINTER
WS     BSS  32            OUR WORKSPACE
SAVPAD BSS  256           SPACE TO SAVE RAMPAD
INTLOC DATA USRINT        INTERRUPT'S ADDRESS
F1FLG  DATA 0             "FILE OPEN" FLAG
PABDT  DATA >0014,BUF,>5000,>0000,>000C
       TEXT 'DSK1.DSREX/S'
ENTERV BYTE 13            ENTER KEY VALUE
READF  BYTE 2             READ OPCODE
CLSF   BYTE 1             CLOSE OPCODE
ANYKEY BYTE >20           HEX 20 FOR COMPARISON
       END
```

The 1980s Home Computer Era — Part 10

More on the TI99/4A

By BILL GASKILL
© c1995 by Bill Gaskill

JUNE 1983: TI releases the beige console with its new operating system designed to defeat cartridges that bypass the use of TI's patented GROM. The console is now made of plastic in an effort to get the price of the Home Computer as low as possible.

— Under the stewardship of Jerry Junkins, the TI99/4A becomes a loss leader when its price is reduced to $99 in order to match the VIC-20. It is now selling for $25-30 less than it costs to make it.

— TI releases its now famous "Notice" to plug-in cartridge makers warning them of possible patent infringements if they try to make cartridges for the 99/4A without going through TI's licensing program.

— In a series of meetings after the Consumer Electronics Show, in which TI purposely failed to display the Computer 99/8, plans to introduce it are shelved indefinitely, but the decision is not made public.

— Yet another sales promotion surfaces when TI begins offering a free Speech Synthesizer to anyone who purchases six Solid State Software Command Modules or an Entertainment Value Pack and three modules, or two Software Libraries between June 1, 1983, and January 1, 1984.

— Microsurgeon, Super Demon Attack, Moonmine and Sneggit are announced by Texas Instruments.

— Former TI employee Michael Brouthers, founder of Funware, announces that his firm will produce Ant Colony, Astroblitz, Cave Creatures, Crisis Mountain, Driving Demon, Pipes, St. Nick and Trashman for the 99/4A and guarantees that all will run on the new operating system despite TI's efforts to lock out unlicensed third party developers.

— Milton Bradley announces that the MBX Voice Recognition System, originally planned for release in April, will be available some time during the fourth quarter of 1983.

—Jim Peterson's first Tips from Tigercub Software is published.

— Romox announces the impending release of their Hen Pecked, Typo and Whiz Kid cartridges.

— TI announces a third quarter release for Mini Writer, a word processor on cassette that runs out of the Mini-Memory cartridge and Entrapment, a Mini-Memory-based game program.

JULY 1983: Texas Instruments releases an internal report listing software sales ranking for the second quarter 1983 which shows that Texas Instruments has three of the top eight games, the No. 1 seller in home productivity programs (No. 12), the No. 1 seller in the computer programming category (No. 13) and the No. 1 seller in the educational area (No. 16).

1. Pac-Man
2. Parsec
3. Galaxian
4. Centipede
5. Star Raiders
6. Munchman
7. Frogger
8. TI Invaders
9. Missile Command
10. Defender
11. Cosmic Cruncher
12. Household Budget Management
13. Teach Yourself BASIC
14. A-Maze-Ing
15. Garf
16. Early Learning Fun
17. Jupiter Landing
18. Hunt the Wumpus
19. Personal Record Keeping
20. Car Wars

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THE HOME COMPUTER ERA —

(Continued from Page 14)

— Control Data Corporation announces its Plato Courseware Development 2 program, or PCD2. PCD2 allows third-party courseware developers to submit programs for evaluation and possible acceptance into the Plato Courseware line. Ken Modesitt of the TI Computer Based Learning Center in Lubbock is named as the PCD2 contact for Texas Instruments.

— Anteater is released by Romox Software Publishing.

— Texas Instruments announces a $119 million loss on the Home Computer during the second quarter 1983 alone.

— Scott, Foresman and Company releases the Mathematics Action Games programs as individual cartridges for $39.95.

AUGUST 1983: TI's audits and surveys of retail sales data indicate the following video game and home computer sales breakdown for 1983.

	Video Games	Home Computers
January	72%	28%
February	70	30
March	62	38
April	53	47
May	57	43
June	53	47
July	51	49

— TI signs an agreement with Spinnaker Software that allows TI to produce Facemaker and Story Machine for the 99/4A. They also reach a similar agreement with Sega that allows TI to produce Buck Rogers, Congo Bongo and Star Trek for the Home Computer.

— Ralph Fowler goes on-line with the first TIBBS in Kennesaw, Georgia and the Chicago TI Users Group goes on line with their first BBS. Both systems are the first electronic bulletin board systems ever created for a TI99/4A system.

SEPTEMBER 1983: *Consumer Reports* publishes a non-complimentary review of the 99/4A system, stating the pricing of the peripherals is too high and the system cannot do much without the peripherals.

— Atari Chief Executive Officer Raymond Kassar is fired as Atari continues to lose money on their home computer line. While Atari was the darling of investors in 1981, all gains in stock price since then have been lost. James J. Morgan is named as Kassar's replacement.

— Coleco's Adam Home Computer receives Federal Communications Commission approval and is announced to the world as being ready to ship.

— On September 20, 1983 Texas Instruments announces its fourth quarter 1983 Home Computer Network TV schedule to retail dealers. The line-up includes over 160 airings of two commercials; "Reaching" and "Sixth Grade Math," both 30-second spots prepared for TI by McCann-Erickson's Houston, Texas, office.

— TI delivers a Product Status Sheet to retailers that is designed to provide the latest information on 99/4A software development. The sheet lists the following products:

Title	PH#	APP	DEALE R$	AVAIL
Baseball	3148	ENT	33.75	11/14/83
Bigfoot	3151	ENT	27.00	11/14/83
Burgertime	3233	ENT	26.00	11/14/83
Computer Math Games III	3085	ED	26.00	10/03/83
Computer Math Games IV	3086	ED	26.00	10/24/83
Congo Bongo	3227	ENT	26.00	12/05/83
Crossfire	3207	ENT	26.00	11/14/83
Demon Attack	3219	ENT	26.00	11/14/83
Early Logo Learning Fun	3144	ED	26.00	10/10/83
Face Maker	3177	ED	26.00	10/03/83
Fathom	3222	ENT	26.00	11/21/83
Honey Hunt	3156	ED	27.00	11/14/83
Hopper	3229	ENT	26.00	09/26/83
I'm Hiding	3155	ED	27.00	11/14/83
Jawbreaker	3194	ENT	26.00	09/26/83
Key To Spanish	3126	ED	97.50	10/17/83
Logo II	3109	ED	57.20	09/26/83
M*A*S*H	3158	ENT	26.00	09/26/83
Microsurgeon	3220	ENT	26.00	10/03/83
Moonmine	3131	ENT	26.00	09/26/83
Moonsweeper	3224	ENT	26.00	11/21/83
Munchmobile	3146	ENT	26.00	11/14/83
Plato	3122	ED	32.50	09/26/83
Sewermania	3150	ENT	27.00	11/14/83
Slymoids	3197	ENT	26.00	10/03/83
Sneggit	3145	ENT	26.00	09/26/83
Sound Track Trolley	3157	ED	27.00	11/14/83
Space Bandits	3149	ENT	27.00	11/14/83
Star Trek	3225	ENT	26.00	11/12/83
Superfly	3153	ENT	27.00	11/14/83
Teach Yourself BASIC	PHT 6007	ED	19.50	09/26/83
Terry Turtle's Adventure	3154	ED	27.00	11/14/83
TI Mini-Writer	PHT 6103	HU	13.00	10/17/83
Treasure Island	3168	ENT	26.00	11/18/83
Wingwar	3223	ENT	26.00	12/08/83
Word Invasion	3169	ED	26.00	11/21/83
Word Radar	3185	ED	26.00	11/14/83

OCTOBER 1983: TI extends the $50 rebate program and includes the cassette version of Teach Yourself BASIC with the purchase.

— Navarone releases the Grombuster cartridge designed to defeat the new operating system in the beige consoles.

— Two top Atari executives, John Cavalier and Jeffrey Heimbuck, leave troubled Atari as the company's new chief executive officer James J. Morgan appears to be cleaning house.

— Battered by loses of $223 million during the first nine months of 1983, on Oct. 28 TI publicly announces that it will bow out of the home computer business. It is a victim of its own self-destructive strategy to bolster sagging sales. In a series of price reductions and rebates over the last year, TI slashed the price of the computer in half, a move which cost the firm $50 on every computer shipped, according to *Business Week*. By the end of September 1983, the Home Computer Division was more than $500 million in the red.

— The $50 rebate program is canceled Oct. 31, but TI decides to continue the free Speech Synthesizer (with purchase of six modules) offer until Jan. 31, 1984.

—Andrew Pollack writes a multipage article on the demise of the 99/4A in the Oct. 29, 1983 issue of the *New York Times*.

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THE HOME COMPUTER ERA —

(Continued from Page 15)

NOVEMBER 1983: The last *99er Home Computer Magazine* is published.

— Don and Lucy Veith release the first issue of T*he National Ninety Niner* newsletter out of Bakersfield, California.

— CorComp announces a 32K memory expansion card that is available immediately, and they announce the impending release of a DS/DD disk controller card, a Peripheral Expansion System with 32K memory, an RS232 interface, a disk drive power supply, a quad density disk controller, a hard disk connection and 3-4 expansion slots. CorComp also announces that it is developing a 128/256K RAM card.

DECEMBER 1983: *99er Home Computer Magazine* fails to appear with the December issue, supposedly because of a problem with advertisers after the TI announcement of Oct. 28.

JANUARY 1984: TI's Ron Wolfson releases figures of 2.5 million TI99/4A consoles sold with about 250,000 having expansion systems.

— Control Data Corporation places an ad in the January 19[illegible] issue of *Byte* on page 151, but only mentions the 99/4A as having "selected" lessons available for it.

— $1995 could buy you the SEEQUA Chameleon IBM compatible computer with your choice of a DOS and CP/M operating system. It included 128K RAM expandable to 256K, a 320K floppy disk drive, one serial and one parallel port, a 640x200 monochrome monitor, Perfect Writer, Perfect Calc and MBASIC.

FEBRUARY 1984: JC Penney department stores drop the 99/4A after trying to unload as many during the Christmas season as they could.

MARCH 1984: San Francisco-based Triton Products Company is chosen as the fulfillment house for remaining 99/4A hardware and software.

— Texas Instruments officially leaves the home computer market on March 28, 1984 when the last 99/4A is produced and the assembly lines are shut down forever.

Graphics compatibility

Keeping graphic programs straight

We're not sure who wrote the following article. However, readers may find it a useful compendium of many of the graphic programs available for the TI.—Ed.

This article has been prompted by a very odd chart of the various graphics programs for the TI which I came across in a newsletter — odd because it failed to tell you very much and was decidedly biased.

Each type of file is referred to by means of a short abbreviation, details of which are given in the first section below:

LIST OF FORMATS:

TI-ARTIST - Fonts (_F files, referred to later as TIAF); Pictures (_P and _C files, referred to as TIAP); Slides (_S files. TIAS); Instances (_I files, TIAI)

GRAPHX — Clip art, inc. fonts (GC); Pictures (GP)

CSGD — Pictures (/DT files, CP); Graphics (/GR files, CG); Fonts-usual (/CH files, CF) — care: see note at end!; Fonts-DocuPrinter (/DP files, CD); Labels (/LB files, CL); Letterheadings (/1L files, CH)

JOYPAINT — Pictures (JP); Compressed pictures (JC)

PICASSO — Pictures (PP); Fonts (PF); Icons (PI)

BITMAC — Pictures (BP)

DRAW N PLOT — Pictures (DP)

DRAW A BIT 1 — Pictures (DAB1)

DRAW A BIT 2 — Pictures (DAB2)

MAX RLE — Pictures: DV80 files or DF128 files (MP)

PAINT N PRINT (Module) — PNPP.

Max RLE and PICASSO are available from the disk library.

NOTE: CSGD uses two different sets of /CH files. The font editor creates one set of /CH files, which then have to be converted to another type of /CH file for use. The /CH files referred to here are always the converted files. The conversion program is on CSGD Volume 1.

MUTUALITY:

This section indicates the types of file each graphics program can use from the above list, *without* using an external conversion utility. The ability to both save and load can be assumed unless otherwise noted:

MAX/RLE — TIAP, GP, MP

TI-ARTIST — TIAP, TIAF, TIAS, TIAI, DAB1, DAB2,DP, GP

GRAPHX — GC, GP

CSGD 1 and 2 — CP, CF, CG

CSGD 3 — CF, CG, CH, CL and LOAD ONLY CD.

PICASSO — PP, PI, PF, TIAP; can also LOAD a TI-Writer text file.

JOYPAINT — JP

JOYPAINT PAL 2 — JP, TIAP, JC, can also LOAD GP, DP

Where more than one type is listed in the above section, conversions are possible as part of the main program, which is usually much faster.

GRAPHICS UTILITIES

The following listing includes external (e.g., separately loaded) conversion routines on main graphics disks:

THE PRINTERS APPRENTICE — Uses its own picture and font formats, can also use TIAP.

TPA TOOLBOX — Uses TPA fonts and graphics, plus can convert into TPA format the following: TIAI, TIAF, TIAP, CF

PRINT WIZARD — Creates its own format from TIAI and TIAF.

FONT WRITER 2 — Uses, in various utilities, TIAF, TIAI, TIAP, CF, CG, GP; can convert: CG to TIAI, CP to TIAI, TIAI to CG and TIAI to CP.

PICASSO — Can convert an XB font to PF, or load a PF into an XB program. Convert BP to PP. Make use of CF and CG files.

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GRAPHICS PROGRAMS —

(Continued from Page 16)

EXTENDED GRAPHICS PACKAGE — Requires Paint n Print module.

CSGD 1 — can convert an XB screen into CP.

ARTIST EXTRAS (Texaments) — Can convert: CF or CD to TIAF, CG to TIAI, and CP to TIAI. Allows SUPERSKETCH to be used as an input device for TI-Artist.

ARTCONVERT (Trio+) — Can convert TIAI and TIAF to TI-Writer graphics.

ARTIST ENLARGER (Asgard) — Works with TIAF and TIAI.

GRAPHICS EXPANDER AND BIGTYPE (Genial) — Works with TIAF, TIAP, and TIAI.

GRAPHICS LISTER (Nameloc) — TIAI.

PICASSO UTILITIES (Asgard) — Ad description fails to indicate what this does.

DISPLAY MASTER (Inscebot) — TIAP.

CSGD CATALOGER (Texaments) — CG, CF, TIAF, TIAI.

GRAPHX SLIDE SHOW (Asgard) — GP.

DESIGNER LABELS (Texaments) — TIAI.

EXTENDED BUSINESS GRAPHS (Gt Lakes) — JP.

CHART MAKER II (QS99) — DP.

CALENDAR MAKER 99 (Asgard) — TIAI.

PICTURE IT (Merritt) — TIAI to Banner, XB, and TI-Writer.

GRAPHIC LABELLER (disk library) — CG.

JBM103 (disk library) — Enables graphics to be loaded/saved to/from Extended BASIC bit-mapped screens in TIAP format.

UTIL12 (disk library) — Has a utility to convert from TIAI to Extended BASIC program format — merge file, or listing to disk or printer.

UTIL 7 (disk library) — Has a utility to convert TIAI to TI-Writer graphics.

UTIL17 (disk library) — Has a utility to convert a segment (5x5 chars) of a GP to CG, and a utility to convert CG to TIAI and/or Extended BASIC merge file.(Called XBGC).

TASS (disk library) — TIAP, GP, DAB2. Slide show.

COMIC 1 (disk library) — A utility which enables you to create a machine code animation sequence from up to 100 TIA Pictures (TIAP). The animation speed is adjustable as the program runs, and can be very fast indeed.

MYARC UTILITIES (disk library) — TIAP and GP to load into Myarc XB program.

PICASSO and PICTURE IT are copyrighted. Other disk library programs are fairware. All other programs are copyright commercial programs.

The de facto standard has been set by TI Artist — only graphics programs released before TI-Artist lack TIA capabilities, apart from CSGD, although external utilities have been created to remedy that!

As far as printers go, all these work with Epson FX series printers or any printer which follows Epson commands — the usual commands used are:

ESC * (8-pin bit image mode)
ESC K (480-dot 8-pin mode)
ESC L (960-dot 8-pin)
ESC Z (1,920-dot 8-pin)
ESC A n (line spacing in n/72 inch)
ESC l n (left margin setting)

A few programs allow Gemini printers to be used, but Gemini used two incompatible codings in their printers, and Gemini owners often report problems. A very few programs will support other printer codings.

The vast majority of the programs listed above remain available. Not a bad choice at all for an orphan computer, whose manufacturers left it with a VIDEO GRAPHS module which compares very badly with the above.

I have deliberately omitted a few simple programs such as Norton Graphics Package, and an input device, Supersketch — but note that Supersketch can be interfaced to TI-Artist. Any other omissions are due entirely to my ignorance of the products involved.

DATACAL

A calendar that helps you keep track of important dates

By LUCIE DORAIS

The following article and program were a part of Lucie's Fast Extended BASIC column that appeared in the newsletter of the Ottawa TI User Group.—Ed.

A longer program, to keep you busy. Yes, another calendar, but this is a DATACALendar, with space to enter your busy schedule.

You can Load a Datacal, or build a new one. The calendar is then shown on the screen, and you can enter your data, four lines of ten characters each. The calendar will get a little dot besides the dates that have data. You can then print the Datacal, save it, change your data or delete it. The calendar always remains on screen, so you know where you are.

Since this is a practical calendar, we do not need a "perpetual calendar" routine. This program will work from now to December 1999. I designed a new routine to build the calendar, based on the fact that 1988 started on a Sunday. To find the starting day of each month, we keep the total of days from January first in the DD() array: see the DATA in lines 130-140; don't worry about leap years, they are taken care of in the routine itself. The DATA in line 150 is for the menu items, MEN$().

The screen displays a black on white calendar, instructions, etc., on a magenta background, consisting of a whole screen of character 130, a solid block. Char. 128 is the dot indicating data for a given date. Initializing is done in line 170. Since many routines needed a FOR X=1 TO 12, I included them all into one FOR-NEXT. L$, a line of hyphens, will be used in printing the Datacal. EL$ defines a line of 40 spaces. E$ is the escape code for the printer, and ON$/OF$ defines the underlining codes. These are pretty standard. If your printer uses different codes, just change those variables accordingly. MO$ is a complete calendar — please be careful with the spaces.

Lines 210-240 display the screen (empty calendar space and menu) and ask you if you want to load a previous Datacal. Either answer will lead you to line 460, where you are asked for the year and month. The default year, 1989, should be altered every new year (in line 460). If you answered "Y" to load, the program moves to line 600. To keep things simple, I decided that the program would create the file name, as "DC/MONxx", where MON stands for the first three letters of the month name, and xx for the last two digits of the year. That way, there's no need to remember the names of the files. If you need more than one Datacal for a given month and year, you will need to use different disks, or change the LOAD/SAVE routines.

Since this is a practical calendar, we do not need a "perpetual calendar" routine. This program will work from now to December 1999. I designed a new routine to build the calendar, based on the fact that 1988 started on a Sunday.

If you did not load a Datacal, Tex will build a new calendar into the string CAL$, starting in line 490. Since 1988 started on a Sunday, i.e. day 1, each following year must start on YR-88 or later. If the year is a leap year, the variable X will be set to "-1", i.e. "true," in the relational expression, to be used later. Then, if the year is later than 1992 or 1996, two leap years, we need to add one or two more days. Again, two relational expressions.

Now we need to make DAY, starting day of our year, into the starting day of the chosen month: just add to it the number of days to the end of the previous month. If we are in a leap year and the month is after February, add that extra day. Then take this number of days, subtract the number of complete weeks (seven days) that have occurred since the beginning of the year, and we get the starting day for the month, a number from 1 to 7. The length L, total days in our given month, is simply the difference between the total days in the year for this month and the previous one. If leap year, our X was set to "-1" earlier, so we use it here to tell Tex that February has 29 days.

Finally, with L, we can take a segment of MO$, and we quickly set the data for each day, in the array D$(), to nothing. This is useful when we build a new Datacal. Then we add spaces before our calendar string and after (to make sure that a shorter month will totally erase the previous one on screen). The month and year are displayed at the upper right corner as M$, and the sub in line 770 will display our calendar on screen. All this takes long to explain, but Tex does it in about one second.

Every routine returns to line 260, the main portion of the program. The sub ER erases the instruction field of the screen (with character 130) and ERDATA displays an empty "day:" white spaces for the day and for the four lines of data. The CALL KEY asks for a MENU letter. You can use uppercase or lowercase, Tex will convert them to uppercase (I know, I know... we could use a keyboard=3, but then there are too many ACCEPTS, we would have to come back to a keyboard=5.)

We check the CALL KEY with P, position of the first letter pressed. Please note the "*"s: they refer to the two empty lines in the menu (corresponding the to "," in the DATA line 150). I have grouped together the functions that affect one day

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DATACAL —

(Continued from Page 18)

Enter, change, delete), the four that affect the whole month (view, print, load and save), and lastly new and quit. So you can enter an asterisk, but the corresponding line numbers in the ON-GOTO will bring you back to calling the key.

The first three routines start by asking you "Which Day?" you want. If you pressed the wrong key, just enter "0" to escape to the menu. The temporary string A$ is emptied. If you want to delete, P=3, Tex immediately goes to line 380. If you want to enter, some instructions are printed: to enter repetitive data, just enter "P" on an empty line, and the previous data, kept in OA$, will be displayed. If you want to change, P=2, the data for this day is displayed by the subroutine in line 760.

The data for each day consists of four lines of 10 characters. Lines 340-390 accept the four lines, pads them to 10 characters with spaces, and ask if OK. If no, go back to accept. If yes, Tex first looks for empty data lines. If A$ is empty or if it consists of 40 spaces (as when you erase previous data), the character X to be inserted into the CAL$ string will be a space. Otherwise, it will insert a small dot, char. 128. The value of S in line 390 simply calculates the exact position of that dot or space into CAL$. The modified CAL$ is then displayed on screen.

V)iew simply shows the data for each day for which the D$() content is not empty. Press the space bar to read through the whole month. If you quickly need to see only one day, use the "change" option in the menu, then accept the four lines as they are. When you want a N)ew month, Tex again takes you to line 460. This routine was described above.

S)ave and L)oad a month file both use SUB F, passing the month-and-year M$ to build the filename, bringing back the complete filename to open the file. In SUB F, the default disk number is asked only once, so be careful to put all your Datacal for one session on the same disk. Before saving CAL$, that contains both the calendar and the dot-flags, we strip from it the spaces at the beginning and at the end, to keep the file smaller. A file size of 95 takes care of the months that have 31 days. Tex then saves L, the exact number of days in the month, and DAY, the starting day, then the data D$() for all the days. Since the data file size is Variable, the more data you have, the bigger the file. Don't worry — the biggest Datacal is seven sectors, so a SSSD disk can hold at least 48 Datacals, i.e. four full years!

L)oad a Datacal works the same way, but in reverse: read the file, then, after closing the file, go to line 540, where CAL$ gets its beginning and end spaces. The calendar is then displayed on the screen. In line 600, I put an ON ERROR 780. Since the major error that could break the program is trying to Load a nonexistent file, I put it here, and the program will reset its Error line each time it passes through line 600. Warning: to make your debugging easier, don't type that statement until you are absolutely sure that your program is bug-free. Or enter it as ON ERROR STOP until then. Otherwise, the program will print FILE ERROR for any error. Worse, it will go to line 460 and continue to run. It just happened to me: it was a long time before I figured that I had a syntax error.

P)rint the file starts by asking you the printer name, just once. The file name must be stripped of the extra characters 130 if your file name is shorter than 14 characters (the ACCEPT routine takes all the 14 characters reserved by SIZE). Variable S is temporarily used for the starting position of CAL$ to print. The printer is then opened as "VARIABLE 130," because the lines that will print the days, enclosed into a nice square and bolded, have more than 80 characters (the printable ones plus the escape, codes, etc.). E$&&"@@" simply resets the printer to normal, just in case.

Lines 641-645, and 735, allow you to enter four lines of notes to printout at the end of the calendar. You cannot save them with the Datacal though. However, it should be easy for you to modify the program if you want to save the comments.

Line 660 prints the month and year in expanded characters (ASCII=14) and centered, then the days of the week and a line of hyphens. The fun starts in line 680: each line to print has to be built into a temporary T$ line. E$+G tell the printer to go into double-printing mode for the line that contains the day-numbers, then it takes the next seven days in CAL$ (remember our S position variable) and frames them with the ON$/OF$ underlining codes. If a given day number has a "dot", i.e. the character immediately after it is 128, keep the corresponding data for that day into temporary array DL$(n), where n=1 to 7 for each day of the week. If the day number in CAL$ is followed by a space (no data), DL$ becomes EL$, 40 spaces (because printing an empty D$() string would greatly disturb the printed Datacal).

Position S is then incremented by three, and Tex does the next Y day. When the week is complete, we print T$, followed by ESC+H to disable double-printing. We have now printed the day number line, and kept the data into the DL$ array; lines 710-720 then take the DL$ strings to build and prints four lines, taking each time the relevant portion of DL$(). I found that building each line in memory before printing it is much faster than printing each portion (followed by a ";") separately. Line 730 prints a nice line of hyphens. If the next portion of CAL$ is not spaces, i.e. we still have days in the month, Tex goes back to line 680 to build and print the next week. If the month has all been printed, line 740 does a form feed before closing the printer.

DATACAL

```
100 REM ** DATACAL ** L.Dora
is/Ottawa UG/Sept. 1989 !215
110 REM!154
120 DIM D$(31),MM$(12),DD(12
),MEN$(11),DL$(7),N$(4)!032
130 DATA JANUARY,31,FEBRUARY
,59,MARCH,90,APRIL,120,MAY,1
51,JUNE,181 !072
140 DATA JULY,212,AUGUST,243
,SEPTEMBER,273,OCTOBER,304,N
OVEMBER,334,DECEMBER,365 !22
4
150 DATA E)nter,C)hnge,D)ele
t,,V)iew,P)rint,L)oad,S)ave,
,N)ew,Q)uit !143
160 CALL CHAR(128,"000000F0F
0F0F0",130,"FFFFFFFFFFFFFFFF
"):: CALL COLOR(13,14,15)::
CALL CLEAR !244
170 CALL SCREEN(14):: FOR X=
```

(See Page 20)

DATACAL —

(Continued from Page 19)

```
1 TO 12 :: CALL COLOR(X,2,15
):: CALL HCHAR(2*X-1,1,130,6
4):: READ MM$(X),DD(X):: NEX
T X !199
180 L$=" "&RPT$("-",77):: EL
$=RPT$(" ",40):: E$=CHR$(27)
:: ON$=E$&"-1" :: OF$=E$&"-0
" !176
190 MO$=" 1  2  3  4  5  6
7  8  9 10 11 12 13 14 15 16
 17 18 19 20 21 22 23 24 25
26 27 28 29 30 31 " !062
200 GOTO 210 :: A$,CAL$,D,DA
Y,F$,K,L,LD$,M,M$,N,OA$,P,PR
$,S,T$,Y,YR :: CALL KEY :: !
@P- !240
210 DISPLAY AT(2,1):"SU MO T
U WE TH FR SA ";:: FOR X=3 T
O 15 :: CALL HCHAR(X,3,32,21
):: NEXT X !022
220 FOR X=1 TO 11 :: READ ME
N$(X):: DISPLAY AT(X+3,23)SI
ZE(6):MEN$(X):: NEXT X !024
230 DISPLAY AT(20,4):"LOAD a
 DATACAL? N ";:: CALL YN(20,
T$):: IF T$="Y" THEN P=7 !00
4
240 CALL HCHAR(20,6,130,18):
: CALL ERDATA :: GOTO 460 !0
79
250 ! ** main ** !048
260 CALL ER :: CALL ERDATA :
: CALL D(20,"PRESS A KEY")!2
21
270 CALL KEY(0,K,S):: IF S=0
 THEN 270 ELSE IF K>96 THEN
K=K-32 !145
280 P=POS("ECD*VPLS*NQ",CHR$
(K),1):: IF P=0 THEN 270 ELS
E CALL ER !044
290 ON P GOTO 300,300,300,27
0,410,630,450,560,270,460,75
0 !124
300 CALL D(18,MEN$(P)):: CAL
L D(20,"WHICH DAY? "):: CALL
 D(22,"[ESC=0]")!032
310 ACCEPT AT(20,26)VALIDATE
(DIGIT)BEEP:D :: IF D>L THEN
 310 ELSE IF D=0 THEN 260 !2
09
320 CALL HCHAR(22,17,130,7):
: A$="" :: IF P=3 THEN 380 !
135
330 GOSUB 760 :: IF P=1 THEN
 CALL D(20,"enter ""P"" for"
):: CALL D(21,"previous data
")!143
340 FOR X=1 TO 4 :: ACCEPT A
T(19+X,2)SIZE(-10):T$ :: IF
T$="P" OR T$="p" THEN A$,D$(
D)=OA$ :: GOSUB 760 :: GOTO
360 !015
350 A$=A$&T$&RPT$(" ",10-LEN
(T$)):: NEXT X !112
360 CALL D(23," OK? Y "):: C
ALL YN(23,T$):: IF T$="N" TH
EN A$="" :: GOTO 340 !194
370 IF A$=EL$ THEN A$="" !24
6
380 IF A$="" THEN X=32 ELSE
X=128 !096
390 S=(DAY+D)*3-3 :: CAL$=SE
G$(CAL$,1,S-1)&CHR$(X)&SEG$(
CAL$,S+1,220):: D$(D),OA$=A$
 :: GOSUB 770 :: GOTO 260 !1
63
400 ! ** view ** !070
410 CALL D(20,"<SPACE BAR>")
:: CALL D(21,"to continue")!
086
420 FOR D=1 TO L :: IF D$(D)
="" THEN 440 ELSE GOSUB 760
!038
430 CALL KEY(0,K,S):: IF S=0
 OR K<>32 THEN 430 !166
440 NEXT D :: GOTO 260 !176
450 CALL ER ! ** new ** !211
460 CALL D(18,MEN$(P)):: CAL
L D(20,"YEAR: 1990"):: CALL
D(21,"[ESC=00]      ")!130
470 ACCEPT AT(20,23)SIZE(-2)
BEEP:YR :: IF YR=0 THEN 260
!088
480 CALL D(21,"MNTH[1-12]:
 "):: ACCEPT AT(21,27)SIZE(-
2)BEEP:M :: M$=SEG$(MM$(M),1
,3)&" "&STR$(YR)!198
490 IF P=7 THEN 600 ELSE DAY
=YR-88 :: X=(INT(YR/4)=YR/4)
:: DAY=DAY-(YR>92)-(YR>96)!1
58
500 DAY=DAY+DD(M-1):: IF X A
ND M>2 THEN DAY=DAY+1 !063
510 DAY=DAY-INT(DAY/7)*7 ::
IF DAY=0 THEN DAY=7 !196
520 L=DD(M)-DD(M-1):: IF X A
ND M=2 THEN L=29 !026
530 CAL$=SEG$(MO$,1,L*3):: F
OR X=1 TO L :: D$(X)="" :: N
EXT X !225
540 CAL$=RPT$("   ",DAY-1)
AL$&EL$ :: DISPLAY AT(1,23):
M$ :: GOSUB 770 :: GOTO 260
!192
550 ! ** save ** !058
560 CALL D(20,MEN$(8)):: CAL
L F(F$,M$):: OPEN #1:F$,OUTP
UT,INTERNAL,VARIABLE 95 !248
570 PRINT #1:SEG$(CAL$,3*DAY
-2,3*L):: PRINT #1:L,DAY !24
3
580 FOR X=1 TO L :: PRINT #1
:D$(X):: NEXT X :: CLOSE #1
:: GOTO 260 !239
590 ! ** load ** !043
600 ON ERROR 780 :: CALL F(F
$,M$):: OPEN #1:F$,INPUT ,IN
TERNAL,VARIABLE 95 !067
610 INPUT #1:CAL$ :: INPUT #
1:L,DAY :: FOR X=1 TO L :: I
NPUT #1:D$(X):: NEXT X :: CL
OSE #1 :: GOTO 540 !079
620 ! ** print ** !184
630 CALL D(18,MEN$(6)):: S=1
 :: IF PR$<>"" THEN 650 !017
640 CALL D(20,"PIO"):: ACCE
T AT(20,15)SIZE(-14)BEEP:A$
:: PR$=SEG$(A$,1,POS(A$,CHR$
(130),1)-1)!004
641 N=0 :: CALL D(22,"ADD NO
TES? N"):: ACCEPT AT(22,26)S
IZE(-1):A$ :: IF A$="N" THEN
 650 ELSE N=1 !000
642 DISPLAY AT(18,2):"NOTES"
;:: A$=RPT$(" ",28):: DISPLA
Y AT(20,1):A$:A$:A$:A$ !034
643 FOR X=1 TO 4 :: ACCEPT A
T(19+X,1)SIZE(-28):N$(X):: N
EXT X !113
644 CALL D(18," OK? Y"):: CA
LL YN(18,T$):: IF T$="N" THE
N 643 !231
645 FOR X=18 TO 23 :: CALL H
CHAR(X,3,130,28):: NEXT X ::
 CALL D(18,MEN$(6))!211
650 OPEN #1:PR$,VARIABLE 130
 :: PRINT #1:E$&"@" !009
660 A$=MM$(M)&" 19"&STR$(YR)
:: PRINT #1:TAB(40-LEN(A$));
CHR$(14)&A$ !095
670 PRINT #1:"":"   SUNDAY
   MONDAY    TUESDAY   WED
NESDAY  THURSDAY  FRIDAY
```

(See Page 21)

DATACAL —

(Continued from Page 20)

```
 SATURDAY":L$ !092
680 T$=E$&"G |" :: FOR Y=1 T
O 7 :: A$=SEG$(CAL$,S,2):: T
$=T$&ON$&A$&OF$&"|       |"
!253
690 IF SEG$(CAL$,S+2,1)=CHR$
(128)THEN K=VAL(A$):: DL$(Y)
=D$(K)ELSE DL$(Y)=EL$ !064
700 S=S+3 :: NEXT Y :: PRINT
 #1:T$&E$&"H" !189
710 FOR X=1 TO 4 :: T$=" |"
:: FOR Y=1 TO 7 :: T$=T$&SEG
$(DL$(Y),10*X-9,10)&"|" !117
720 NEXT Y :: PRINT #1:T$ ::
 NEXT X !161
730 PRINT #1:L$ :: IF SEG$(C
AL$,S,2)<>"  " THEN 680 !086
735 IF N THEN PRINT #1:"":"N
OTES:":"":N$(1):N$(2):N$(3):
N$(4):: N=0 !023
740 PRINT #1:CHR$(12):: CLOS
E #1 :: GOTO 260 !167
750 END !139
760 DISPLAY AT(18,2)SIZE(-3)
:D :: FOR X=1 TO 4 :: DISPLA
Y AT(19+X,2)SIZE(-10):SEG$(D
$(D),10*X-9,10):: NEXT X ::
RETURN !164
770 FOR X=1 TO 6 :: DISPLAY
AT(2*X+2,1)SIZE(-21):SEG$(CA
L$,21*X-20,21):: NEXT X :: R
ETURN !196
780 CALL D(23," FILE ERROR!!
"):: GOTO 460 !184
790 !@P+ !062
800 SUB D(R,A$):: DISPLAY AT
(R,15):A$;:: SUBEND !051
810 SUB F(F$,M$):: IF DSK$<>
"" THEN 830 !183
820 CALL D(23,">DISK 1"):: A
CCEPT AT(23,21)VALIDATE("123
456")SIZE(-1)BEEP:DSK$ !061
830 F$="DSK"&DSK$&".DC/"&SEG
$(M$,1,3)&SEG$(M$,5,2):: CAL
L D(23,F$):: SUBEND !159840
SUB YN(R,A$):: ACCEPT AT(R,2
0)VALIDATE("YNyn")SIZE(-1)BE
EP:A$ :: A=ASC(A$):: A$=CHR$
(A+32*(A>95)):: SUBEND !088
850 SUB ER :: FOR X=18 TO 23
 :: CALL HCHAR(X,17,130,14):
 : NEXT X :: SUBEND !195
860 SUB ERDATA :: CALL HCHAR
(18,4,32,4):: FOR X=20 TO 23
 :: CALL HCHAR(X,4,32,10)::
NEXT X :: SUBEND !165
```

Transferring Multiplan files between a TI/Geneve and PCs

By DICK OHI

This article originally appeared in the newsletter of the West Penn 99ers.—Ed.

You will need the program PC-Transfer and PC-Transfer Utilities by Mike Dodd. PC-Transfer requires a CorComp or Myarc disk controller and two double-sided disk drives.

The following was tested using a TI and a Gateway 2000 PC running Quattro Pro SE. These procedures should work with any PC spreadsheet that will import files in the symbolic link format.

Begin by running Multiplan on your TI. Load the file you wish to transfer to the PC.

1. Press (T)ransfer, O(ptions), S(ymbolic). Press Enter. This sets all transfer operations to the symbolic link format.

2. Press T(ransfer), S(ave) and type in a new file name so that you do not overwrite the original file, or you may want to save the new file to another disk.

3. If you want to transfer more than one file, you have to reset the normal mode for transfer operations. Press T(ransfer), O(ptions), N(ormal). Press Enter. Load the next file to be converted and repeat steps 1 and 2 above.

4. When you have saved all the files you wish to transfer, exit Multiplan and insert the Extended BASIC cartridge in the console. (You can also use Editor/Assembler.) Insert the PC-Transfer disk in drive 1 and select Extended BASIC. PC-Transfer will autoload from DSK1.

5. Using the prompts on screen, select a DOS drive and a TI drive.

6. Remove the PC-Transfer disk and insert the PC-Transfer Utilities disk. At the "Conversion File Name" prompt, type: DSK1.SYLK and press Enter. This loads the routine that handles SYLK files.

7. You may now remove the PC-Transfer Utilities disk. Insert the disk with your TI files in the designated TI drive, and either a blank disk or a DOS-formatted disk in the designated DOS drive. It is possible to format a DOS diskette with PC-Transfer, but it is a very slow process. I recommend using a formatted 360K DOS disk.

8. Load the TI disk catalog.

9. Select the files to be transferred by pressing "C" when the cursor is next to the file name. Use the space bar or down arrow to move through the list of files.

10. When all files have been selected, press "E" to execute the procedure.

11. You will be prompted for a DOS file name for each file you want to transfer. Type in a file name using up to eight characters, plus a period, and SLK (MYFILE.SLK) and press Enter. The .SLK extension is required for the DOS program to recognize the file.

12. When all the selected TI files have a DOS file name entered, the transfer procedure will begin.

After the files are transferred, take the DOS disk to your PC, load your spreadsheet program and either open or import the SYLK files from the disk. All data and formulae should be transferred to the DOS spreadsheet, though you may have to adjust formatting.

Master Diskette Librarian

Keeping track of files and disks the easy way

Master Diskette Librarian is an Extended BASIC program that creates a three-column listing of disk contents. An advantage of the program is that it can create a catalog of multiple disks, up to a maximum of 750 files.

The program works out of DSK1. It prompts you for disks to catalog. After reading the disks, it automatically sorts them alphabetically by file name. Sorting can take a long time, depending on the number of files the program is working with. After the sort, you have three options: output to a printer using PIO, output to a printer using RS232, or output to another device, such as a disk drive. After making a selection, you are prompted to enter a date. Then the catalog is outputted. The printout includes filename and diskname, size and type for each file in the catalog.

The program is large, and takes up almost all available memory in an expanded system. You may need to delete the first several lines to avoid a memory full error.

LIBRARIAN

```
1 ! MASTER DISKETTE LIBRARIA
N PROGRAM !216
2 !!131
3 !      Modified By Gerald
Smith !211
4 !!131
5 ! Language:  EXTENDED-BASI
C !033
6 !!131
7 ! Requirements:  32K MEMOR
Y EXPANSION !159
8 !!131
9 ! Three-Up Catalog Listing
. !144
10 ! Part of a FAIRWARE
     package by the
     Mid-South 99 User Group
     P.O. Box 38522
     Germantown, TN 38183 !0
32
11 CALL CLEAR !209
12 CALL CHAR(33,"041E121F109
4D07F",34,"090909FF009200FF"
,35,"000000F8084F0BFE",36,"0
0003048B4B44830",37,"FF")!16
2
13 GOTO 34 :: V :: W :: DIM
PN$(750):: X :: Y :: Z :: I
:: PP$ :: SS :: DIM DK$(750)
,Q(750),T(750),U(750),TYPE$(
5)!052
14 DISPLAY AT(24,8):"<SORT R
UNNING>" :: DISPLAY AT(23,1)
:RPT$(" ",28)!159
15 CALL HCHAR(17,1,37,32)!22
9
16 DISPLAY AT(10,5)BEEP:"(Me
mphis, Tennessee)" :: DISPLA
Y AT(18,5):"Rollin' On The R
iver" !069
17 CALL SPRITE(#1,33,16,120,
256,0,-10)!229
18 FOR X=1 TO 15 :: NEXT X !
237
19 CALL SPRITE(#2,34,16,120,
256,0,-10)!231
20 FOR X=1 TO 15 :: NEXT X !
237
21 CALL SPRITE(#3,35,16,120,
256,0,-10)!233
22 FOR X=1 TO 15 :: NEXT X !
237
23 CALL SPRITE(#4,36,11,120,
256,0,-10)!230
24 Y=INT(Y/2)!107
25 IF Y=0 THEN 73 !086
26 Z=I-Y :: X=1 !014
27 V=X !108
28 W=V+Y !133
29 IF PN$(V)<=PN$(W)THEN 33
!166
30 PP$=PN$(V):: PN$(V)=PN$(W
):: PN$(W)=PP$ :: PP$=DK$(V)
:: DK$(V)=DK$(W):: DK$(W)=PP
$ :: SS=Q(V):: Q(V)=Q(W):: Q
(W)=SS :: SS=T(V):: T(V)=T(W
):: T(W)=SS :: SS=U(V)!196
31 U(V)=U(W):: U(W)=SS !238
32 V=V-Y :: IF V>=1 THEN 28
!238
33 X=X+1 :: IF X>Z THEN 24 E
LSE 27 !151
34 ON ERROR 140 :: CALL INIT
 :: CALL LOAD(-31878,0):: ON
 ERROR STOP !204
35 CALL SCREEN(5):: FOR I=0
TO 14 :: CALL COLOR(I,16,1):
: NEXT I :: CALL COLOR(0,11,
5,2,11,5,12,16,5,13,16,5,14,
16,5)!152
36 J=0 :: SW=0 :: D=1 !098
37 CALL CHAR(129,"7FC0C0C0C0
C0C0C0",130,"C04040424542407
0",131,"000000FF8080C0E0",13
2,"C0C0CFDC0C1F0001",133,"30
66CC1818B3B464")!185
38 CALL CHAR(134,"7C84F41226
E10101",135,"7070381C0F01000
0",136,"010343A426266271",13
7,"64C8C810101808F1",138,"01
0101060830C000",139,"381C1C0
E070301")!121
39 CALL CHAR(126,"FF00FF",14
0,"020404080884C478",58,"00
0003030003030",42,"F00FF00FF
00FF00F",43,"183C7E181818181
8")!172
40 DISPLAY AT(1,10):"TI-99/4
A" :: DISPLAY AT(6,1):"Mid-S
outh      Users Group" ::
CALL HCHAR(8,2,42,30)!202
41 CALL HCHAR(3,15,129):: CA
LL HCHAR(3,16,130):: CALL HC
HAR(4,14,131):: CALL HCHAR(4
,15,132):: CALL HCHAR(4,16,1
33):: CALL HCHAR(4,17,134)!1
83
42 CALL HCHAR(5,14,135):: CA
LL HCHAR(5,15,136):: CALL HC
HAR(5,16,137):: CALL HCHAR(5
,17,138):: CALL HCHAR(6,15,1
39):: CALL HCHAR(6,16,140)!2
11
43 DISPLAY AT(11,1):"TI-99/4
A DISKETTE LIBRARIAN":" ":"
":" This PROGRAM will READ t
he":" CATALOG from MULTIPLE
DISKS" !103
44 DISPLAY AT(16,2):"and PRI
NT in ALPHABETICAL":" ORDER
up to 750 PROGRAM":" NAMES"
```

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LIBRARIAN —

(Continued from Page 22)

```
!006
45 DISPLAY AT(21,2)BEEP:"Pla
ce FIRST DISK into DSK1":" "
:"   Press ANY KEY to START"
 !164
46 CALL KEY(0,K,S):: IF S=0
THEN 46 !114
47 TYPE$(1)="D/F:" :: TYPE$(
2)="D/V:" :: TYPE$(3)="I/F:"
 :: TYPE$(4)="I/V:" :: TYPE$
(5)="PROGRAM" !209
48 I=0 !000
49 OPEN #2:"DSK1.",INPUT ,RE
LATIVE,INTERNAL !237
50 INPUT #2:B$,J,J,K !157
51 FOR LOOP=1 TO 127 !148
52 INPUT #2:A$,A,J,K !147
53 IF LEN(A$)=0 THEN 58 !149
54 I=I+1 !011
55 IF I>750 THEN 58 !167
56 PN$(I)=A$ :: DK$(I)=B$ ::
 Q(I)=J :: T(I)=A :: U(I)=K
!092
57 NEXT LOOP !208
58 CLOSE #2 !152
59 CALL HCHAR(10,1,32,480)::
 DISPLAY AT(21,2):I;" FILENA
MES (MAX.=750)" !013
60 IF I<751 THEN 64 !173
61 DISPLAY AT(22,2):"750 FIL
ENAMES NOW, PROCEEDING TO SO
RT": : :!086
62 I=750 !110
63 GOTO 69 !148
64 DISPLAY AT(23,3)BEEP:"MOR
E DISK INPUT ? (Y/N)Y" :: AC
CEPT AT(23,26)SIZE(-1)VALIDA
TE("YN"):A$ !044
65 IF A$="N" THEN 69 !123
66 CALL HCHAR(20,1,32,140)::
 DISPLAY AT(21,2)BEEP:"Place
 NEXT DISK into DSK1 ":" ":"
 Press ANY KEY to CONTINUE"
!160
67 CALL KEY(0,K,S):: IF S=0
THEN 67 !135
68 GOTO 49 !128
69 TOT=I !254
70 DISPLAY AT(22,2)BEEP:"
                         " !126
71 Y=I !096
72 GOTO 14 !093
73 CALL DELSPRITE(ALL):: FOR
 PS=1 TO 5 !139
74 DISPLAY AT(11,1)BEEP:" "
:: CALL SOUND(2000,900,0)::
DISPLAY AT(11,1)BEEP:" " ::
CALL SOUND(2000,900,0):: DIS
PLAY AT(11,1)BEEP:" " !147
75 CALL SOUND(2000,900,0)::
NEXT PS !108
76 GOSUB 132 !212
77 CALL HCHAR(10,1,32,480)::
 DISPLAY AT(22,1)BEEP:"REPOR
T DATE:": :"JAN  01, 2001
          " :: ACCEPT AT(2
4,1)SIZE(-28):A$ !181
78 OPEN #9:DEV$,VARIABLE 132
 !093
79 GOSUB 144 !224
80 I=TOT !254
81 JJJ=(I/3)-INT(I/3)!025
82 IF JJJ=0 THEN 84 !230
83 I=I+1 :: GOTO 81 !045
84 JJJ=I/3 !165
85 FOR I=1 TO JJJ !028
86 J=ABS(T(I))!074
87 IF Q(I)>999 THEN TB=24 EL
SE IF Q(I)>99 THEN TB=25 ELS
E IF Q(I)>9 THEN TB=26 ELSE
IF Q(I)<10 THEN TB=27 !099
88 JKL$="000" !029
89 IF J=5 THEN GOTO 95 !232
90 JKL=U(I)!170
91 JKL$=STR$(JKL)!236
```

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1996 TI FAIRS

FEBRUARY

Fest West '96, Feb.17, Ramada Inn, 1601 Oracle Dr., Tucson, Arizona. Contact SouthWest Ninety-Niners User Group by sending e-mail to twills@primenet.com. Or call the Cactus Patch BBS at (520) 290-6277; BJ Mathis (520) 747-5046; Tom Wills (520) 886-2460; or write Fest West 96 Committee, SouthWest 99ers, P.O. Box 17831, Tucson, AZ 85731-7831.

MARCH

1996 TI Workshop, TI99/4A User Group U.K., March 16, Wheatsheaf Public House, Sandbach, Cheshire, England. Contact Trevor Stevens, chairman, 249 Southwell Rd. East, Rainworth, Notts, NG21 OBN, UK, or call the MOBB BBS at 01623 491282.

Dutch TI Users Group Annual Meeting, March 23, Buusthuis Kremerstraat 241 Utrecht, The Netherlands. Contact Berry Harmsen, chairman, 1E Oosterparkstraat 141E, 1091 GZ Amsterdam, The Netherlands, (phone) (31) 20-6941047.

MAY

Multi Users Group Conference, May 25, Ohio National Guard Armory, Brookpark. Contact Glenn Bernasek, 13246 Harper Rd., Strongsville, OH 44136, or call (after 9 p.m. Eastern time) at (216) 846-0865 or Internet dd314@cleveland.freenet.edu.

SEPTEMBER

11th International TI99/4A and Geneve Computer-Treffen, Sept. 20-22, Freizeitheim Vorsfelde, Am Sportplatz 5, D-38448 Wolfsburg, Germany. Contact Martin Zeddies, Haupstr. 28, D-38448 Wolfsburg-Reislingen, Germany. Phone/fax number +Germany-5363-71125.

This TI event listing is a permanent feature of MICROpendium. User groups and others planning events for TI/Geneve users may send information for inclusion in this standing column. Send information to MICROpendium Fairs, P.O. Box 1343, Round Rock, TX 78680.

LIBRARIAN —

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```
92 WWW=LEN(JKL$)!010
93 IF WWW=1 THEN JKL$="00"&J
KL$ !154
94 IF WWW=2 THEN JKL$="0"&JK
L$ !106
95 PRINT #9:PN$(I);TAB(13);D
K$(I);TAB(TB);Q(I);!082
96 IF J=5 THEN PRINT #9:TAB(
31);TYPE$(J);ELSE PRINT #9:T
AB(31);TYPE$(J);TAB(35);JKL$
;!155
97 JKL$="000" !029
98 K=I+JJJ !241
99 J=ABS(T(K)):: !206
100 IF Q(K)>999 THEN TB=67 E
LSE IF Q(K)>99 THEN TB=68 EL
SE IF Q(K)>9 THEN TB=69 ELSE
 IF Q(K)<10 THEN TB=70 !126
101 IF J=5 THEN GOTO 107 !24
4
102 JKL=U(K)!172
103 JKL$=STR$(JKL)!236
104 WWW=LEN(JKL$)!010
105 IF WWW=1 THEN JKL$="00"&
JKL$ !154
106 IF WWW=2 THEN JKL$="0"&J
KL$ !106
107 PRINT #9:TAB(44);PN$(K);
TAB(56);DK$(K);TAB(TB);Q(K);
!174
108 IF J=5 THEN PRINT #9:TAB
(74);TYPE$(J);ELSE PRINT #9:
TAB(74);TYPE$(J);TAB(78);JKL
$;!176
109 JKL$="000" !029
110 K=K+JJJ !243
111 IF K>TOT THEN 123 !122
112 J=ABS(T(K))!076
113 IF Q(K)>999 THEN TB=110
ELSE IF Q(K)>99 THEN TB=111
ELSE IF Q(K)>9 THEN TB=112 E
LSE IF Q(K)<10 THEN TB=113 !
031
114 IF J=5 THEN GOTO 120 !00
1
115 JKL=U(K)!172
116 JKL$=STR$(JKL)!236
117 WWW=LEN(JKL$)!010
118 IF WWW=1 THEN JKL$="00"&
JKL$ !154
119 IF WWW=2 THEN JKL$="0"&J
KL$ !106
120 PRINT #9:TAB(87);PN$(K);
TAB(99);DK$(K);TAB(TB);Q(K);
```

MASTER DISKETTE LIBRARIAN

MARCH 9, 1996

FILENAME	DISKNAME	SIZE	TYPE	FILENAME	DISKNAME	SIZE	TYPE	FILENAME	DISKNAME	SIZE	TYPE
ARCHIVER	SYSTEM	33	PROGRAM	DSKUTL2	SYSTEM	17	PROGRAM	PCT-MY-2	SYSTEM	11	PROGRAM
ASSM1	SYSTEM	33	PROGRAM	EA	SYSTEM	34	PROGRAM	PCT-MY-3	SYSTEM	4	PROGRAM
ASSM2	SYSTEM	20	PROGRAM	EDIT1	SYSTEM	25	PROGRAM	SETCOLOR	SYSTEM	4	PROGRAM
AUTOEXEC	SYSTEM	2	D/V:080	EDITA1	SYSTEM	31	PROGRAM	SIDEBAR57	MARCH1996	30	D/V:080
CALHLAHK	MARCH1996	4	D/V:080	EDITA2	SYSTEM	33	PROGRAM	SHCLIBRARY	SYSTEM	3	PROGRAM
CALHLAHK2	MARCH1996	3	D/V:080	EXEC	SYSTEM	21	PROGRAM	SYSTEM/SYS	SYSTEM	481	PROGRAM
CALHLAHK3	MARCH1996	3	D/V:080	EXTRACTOR	SYSTEM	5	D/V:163	TML	SYSTEM	37	PROGRAM
CALHLAHK4	MARCH1996	5	D/V:080	GETKEY	SYSTEM	2	PROGRAM	TUT57	MARCH1996	51	D/V:080
CALHLAHK4P	MARCH1996	5	D/V:080	GETSTR	SYSTEM	4	PROGRAM	URBANUS	MARCH1996	57	D/V:080
CALHLAHK5	MARCH1996	5	D/V:080	GPL	SYSTEM	27	PROGRAM	URBANUS1	MARCH1996	30	D/V:080
CALHLAHK6	MARCH1996	6	D/V:080	GPM	SYSTEM	36	PROGRAM	URBANUS2	MARCH1996	29	D/V:080
CALHLAHK7	MARCH1996	6	D/V:080	GPN	SYSTEM	28	PROGRAM	URBANUS2P	MARCH1996	29	D/V:080
CALHLAHK8	MARCH1996	6	D/V:080	GPO	SYSTEM	25	PROGRAM	XB	SYSTEM	34	PROGRAM
CALYPSO	MARCH1996	34	PROGRAM	GPP	SYSTEM	12	PROGRAM	XB1	SYSTEM	34	PROGRAM
CHARA1	SYSTEM	5	PROGRAM	HC-MY	SYSTEM	33	PROGRAM	XB2	SYSTEM	34	PROGRAM
DISPLAYCAL	MARCH1996	34	PROGRAM	HC-MZ	SYSTEM	23	PROGRAM	XB3	SYSTEM	34	PROGRAM
DM-AID	MARCH1996	7	D/V:080	HCH_10	MARCH1996	59	D/V:080	XB4	SYSTEM	34	PROGRAM

```
!188
121 IF J=5 THEN PRINT #9:TAB
(117);TYPE$(J);ELSE PRINT #9
:TAB(117);TYPE$(J);TAB(121);
JKL$;!052
122 JKL$="000" !029
123 PRINT #9:!080
124 PLINE=PLINE+1 :: IF PLIN
E=56 THEN GOSUB 143 !105
125 NEXT I !223
126 PRINT #9: :TOT;" FILENAM
ES" !053
127 PRINT #9:CHR$(12)!192
128 CALL HCHAR(22,1,32,96)::
 DISPLAY AT(24,1)BEEP:"Want
Another Listing? (Y/N)N" ::
ACCEPT AT(24,28)SIZE(-1)VALI
DATE("YN"):AA$ !007
129 CLOSE #9 :: RESTORE !181
130 IF AA$="Y" THEN 78 !208
131 CALL CLEAR :: END !222
132 CALL HCHAR(10,1,32,480):
: DISPLAY AT(12,2):"WHICH PR
INTING DEVICE?": :"    1. PI
O": :"    2. RS232": :"    3
. OTHER DEVICE":" ":" ": :"
YOUR CHOICE          1" !074
133 ACCEPT AT(22,22)SIZE(-1)
VALIDATE("123")BEEP:KA !030
134 ON KA GOTO 135,136,137 !
006
135 DEV$="PIO" :: GOTO 139 !
207
136 DEV$="RS232" :: GOTO 139
 !037
137 CALL HCHAR(10,1,32,480):
: DISPLAY AT(12,2):" ": :" "
: :" WHICH OTHER DEVICE ?":
:" ": :" " !170
138 ACCEPT AT(18,2)SIZE(-20)
BEEP:DEV$ !206
139 RETURN !136
140 CALL ERR(A,B,C,D)!225
141 PRINT "* ERROR";A;" IN
LINE";D !206
142 END !139
143 PRINT #9:CHR$(10);CHR$(1
0)!224
144 PLINE=0 :: PRINT #9:CHR$
(27);"@" !051
145 PRINT #9:CHR$(27);"G";CH
R$(27);"E";CHR$(14);TAB(12);
"MASTER DISKETTE LIBRARIAN"
!117
146 PRINT #9:CHR$(27);"G";CH
R$(27);"E";CHR$(14);:TAB((74
-LEN(A$))/2);A$ !079
147 PRINT #9:CHR$(15)!195
148 PRINT #9:" FILENAME    D
ISKNAME   SIZE   TYPE
  FILENAME    DISKNAME   SIZ
E   TYPE         FILENAME
 DISKNAME   SIZE   TYPE" !20
6
149 PRINT #9:"----------  --
--------  ----  -------
 ----------  ----------  ---
-  -------      ----------
----------  ----  -------" !
171
150 RETURN !136
```

MICRO-REVIEWS

Load Master and Quiz Family

By CHARLES GOOD

LOAD MASTER
by Mickey Cendrowski

This is designed for the owner of a minimal expanded disk system with one or two floppy drives as an aid in loading disk software. It is written in extended basic with assembly language subroutines and is the first software I have seen that utilizes John Bull's XB Windows. Using Bull's product, Load Master displays drop down windows at appropriate times.

As you use Load Master you are in 40-column mode and are often presented with several choices. Press the first letter of the choice you select. When you boot Load Master as XB DSK1.LOAD you are given your choice of Load manager, Funnelweb, Boot or Exit. You must add Funnelweb or John Johnson's Boot to the Load Master disk to make these choices operative. Pressing "L" for Load manager gets you to the guts of Load Master.

Here you have your choice of Catalog, Options, Back or Exit. If you press "O" for Options a little window appears and gives you these options: Colors, Drives, Printer and Back. Colors changes the screen colors. Drives lets you specify the drive that is accessed with the Catalog option. You have to go through the Options window each time you want to change this drive. Path names are supported. Printer lets you change the name of your printer, and you can supply a path name if you want to save output to a file. Once you configure your options you have to press "B" to get Back to the Load manager menu.

Catalog is by far the most significant part of Load Master. Pressing "C" displays a screen full of file names from the drive specified with the Options menu. A cursor is positioned next to the first file name, and you also get a choice of Page?, Label or Back. Page? asks for a number and displays that page (screen full) of file names if there are too many to fit onto one screen. Label prints nicely formatted disk labels using superscript sized print in a format that fits fan-fold sheets of 1x3-inch sticky labels. If there are too many file names to fit on one label, Label will automatically space down to the next label on the fan-fold sheet and continue printing file names.

From a Catalog display you can put the cursor next to a file name and press <enter>. If the file is DV80 or DF80 the text is displayed on screen. You press a key to advanced to the next line of text. I like this method of displaying text. Some DV80 viewers just scroll the text continuously until you pause the scroll, and the scrolling is almost always too fast to read. If the program next to the cursor is an Extended BASIC program it will run if you press <enter>. If the file next to the cursor is anything else, pressing <enter> gets you an error message.

Load Master is a product under development. What I have described above is v1.2, and the documentation states quite clearly that this version is less than finished. The stated goal is to allow the user to load and run any type of runnable file by placing the cursor next to the file and pressing <enter>. This can now be done using Funnelweb's disk review. Another goal stated in the Load Master docs is to inform the user of the software needed to load any file that cannot be run by itself, such as identifying a TI-Artist picture file as such. The author requests user input concerning what users want future versions of Load Manager to be able to do, and programmer input on ways to accomplish her stated goals.

Send me $1 and I will mail you the latest version of Load Master on a SSSD disk. It is fairware, and the author requests that you send whatever you think the software is worth.

QUIZ FAMILY
by Charles Kirkwood Jr.

This is a group of separate but related Extended BASIC programs to help teachers create multiple choice and true/false examinations You type in data banks of your own test questions and the software creates exams nicely with a specific number of questions from these data banks. You can either manually select particular questions from one or more data banks, or the software will randomly pick the specified number of exam questions for you.

As a university professor I am familiar with this type of software and have used several packages similar to Quiz Family. There are at least two similar products for the 99/4A. One was created by Jim Peterson, and one was published years ago in *Home Computer Magazine*. Many similar programs exist in the PC world. Almost any textbook publisher of high school or introductory level college textbooks will supply such software free to teachers, complete with already created test question banks keyed to particular textbooks. In my opinion, almost all of these 99/4A and PC test making software packages are difficult to use. Editing existing questions in a test bank is cumbersome, and you almost always need a hard copy printout or bound hard copy of the test bank questions in order to create an exam. With the PC software I have seen, if you lose the book containing the exam questions in the data banks, you are out of luck. Your only other option is to view on screen the data bank questions one at a time and select or not select that question for your exam. This is very cumbersome. You can't check them in big bunches because the software only displays the questions one at a time.

Based on my experience with similar products I consider Quiz Family to be as good as any and better than most, which means I rate it quite highly. This is because of the ability to use any DV80 text editor such as the Funnelweb editor to enter, edit and quickly view exam questions in a database. The other quiz-making programs I have tried don't give you this ease and flexibility. Alternatively, you can create your quizzes using an included Extended BASIC program called BuildQuiz. This uses several lines in XBASIC's 28-column screen display to simulate a single 80-column text line. This is workable, but the results are visually rather confusing. There is no word wrap.

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MICRO-REVIEWS —

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Whether using a DV80 text editor or BuildQuiz, you have to preface each 80-column text line (record) with an uppercase code letter to let the software know what to do with the line of text. The first text line of a question starts with a "Q." Each subsequent line of the same question starts with a "C." The first answer line must contain the correct answer and start with "A." For a true/false question, the first and only answer line might read "ATrue." Subsequent answer lines, such as in a multiple choice question, start with "C." The question/answer group ends in a line containing only "E" (for "End") in the first column of the line.

I had no trouble modifying my existing DV80 files of multiple choice questions to this format. I just inserted the appropriate uppercase letter at the beginning of each line of the DV80 file. Since these are DV80 files, they are easy to go into to edit questions, add questions or delete questions. DV80 question files are than run through a supplied program called Convert to make them into the Internal/Fixed 80 format needed by Quiz Family to generate quizzes. You can also directly manipulate these exam question data files (edit, add or delete questions) with a program called Correct if you don't mind the 28-column screen.

PrintQuiz is the real guts of the Quiz Family software package. This program actually creates and prints your exams from the question databases. Questions are printed in random order, and the possible answers to multiple choice questions are also printed in random order even though you always entered the correct answer first. You tell PrintQuiz how many questions to put in the exam. You then tell PrintQuiz which exact questions to include or you let PrintQuiz automatically randomly select questions from the data base. The exam can have any combination of personally selected and automatically randomly selected questions, a feature not found in other quiz-making software I have used. You can tell PrintQuiz to generate several different versions of the same quiz, each containing the same questions but in a different random order, discouraging students sitting next to each other from paying attention to their neighbors' answers. A record of the quiz, listing questions in the data bank used in the quiz and the correct question answers, can be saved to disk.

A couple of additional utilities are included in this very complete package. A program called MergeQuiz lets you combine several data banks into one larger bank. The program Select lets you make an exam file using questions from several different database files. You can you get a hard copy of a question data bank, complete with correct answers indicated, using ListQuiz.

If you are a teacher who has access to textbook publisher's IBM-compatible test bank of questions for a particular textbook, you can convert these questions to a DV80 file on a TI disk for use with Quiz Family. Using an IBM-compatible computer print, the entire question test bank to an ASCII disk file on a 360K IBM disk. Almost all IBM quiz- making software will let you do this. Then on your 99/4A or Geneve with a DSDD disk controller use the commercial product PC Transfer to convert this list of questions to a DV80 file on a TI disk. This is what I have done over the last several years. For the college courses I teach, I create all my exams with the Funnelweb editor using questions I write myself or questions that have imported from publisher's IBM-compatible test banks.

Quiz Family is public domain. The author doesn't request any money for his work. Send me $1 and I will mail it to you on a SSSD disk.

ACCESS

Mickey Cendrowski (Load Master author): 100 Pine St. Russellton, PA 15076

Charles Kirkwood Jr. (QuizFamily author): P.O. Box 1241, Clemson, SC 29633

Charles Good (your humble columnist): P.O. Box 647, Venedocia, OH 45894. Phone 419-667-3131. E-mail cgood@osulima1.lima.ohio-state.edu (preferred) or good.6@osu.edu

TI-Planner

A simple, easy-to-use spreadsheet module

By STEPHEN SHAW

This review originally appeared in TI*MES.—*Ed.*

This product should be better known. I love it and will use it — what better recommendation?

Many years ago I made the mistake of buying the Multiplan package. Ugh. Apart from having to learn how to handle it, it took so long to set up a spreadsheet it never seemed worth it. TI-Planner, by Databiotics, is a spreadsheet for users who do not need the power of Multiplan, but who do need a simple, easy to use — and fast — spreadsheet.

A spreadsheet can be thought of as a sheet of paper with large boxes on it. Some boxes contain text — heading and so on. Some boxes contain numbers. And some boxes contain formulae, linking the values in the number boxes, for instance, to total rows or columns, to find averages, interest, and so on.

And because you can change one number and then recalculate everything else quickly, you can set up "what if" scenarios.

TI-Planner is for unexpanded users, who need only a console. Spreadsheets can be saved to cassette. If you are used to saving data to cassette, it may help you to know that every eight spreadsheet cells

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TI-PLANNER —

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with something in them occupy one cassette data record, and there are header and tail records as well. A large spreadsheet may take a little time to save or reload, but as empty cells are not saved, it is quite efficient at using the tape storage system.

Expanded owners will be glad to know that this module — unlike TI's Personal Record Keeping database module — can sense the presence of 32K RAM and use it.

Unexpanded users have three choices of spreadsheet to use:
28 rows x 27 columns
34 rows x 22 columns
42 rows x 18 columns

Owners with memory expansions can choose among:
50 rows x 50 columns
40 rows x 63 columns
35 rows x 72 columns

And expanded owners can save and load to/from disk.

No printer interface? A second version of the module is available which has a printer cable coming out of it, ready for direct connection to the parallel port of a printer.

When printing spreadsheets, they are printed — to printer or disk — in pages of six columns. The maximum number of rows means that in terms of depth, you will never exceed one page.

If you use six or fewer columns, only one page is printed regardless of the empty spreadsheet size. If you have cells (boxes) with things in them up to 12 columns, then the first page printed will contain the first six columns. A second page will appear with the next six, then you stick them together.

It is thus better in terms of printing to have your spreadsheets stretching downward rather than across.

This module has columns of fixed width, capable of holding 12 characters (or numbers), but numbers can be displayed with zero to nine decimal places. If the number is too large to fit (eg 1234.5 with nine decimal places) then the cell will fill with asterisks, but the number in the cell remains available to formulae.

Formulae are also restricted to 12 characters, and as each cell reference is three characters, this means you can use only three cells in a formula:
A01+B04/a04

Rows are A to Z then a to w.

Formula are calculated from left to right.

Rows and columns can be added very simply by using the formula +A01:A20 (add all the cells in row A, columns 1 to 20).

A formula can use the usual +-/*, and you also have access to Arctan,Cos,Sin,Tan, Square and Square Root. Trig functions use radians.

There is also a natural log function, but it has no inverse, so I'm not too sure where you would use it. "^" is also supposed to be available (eg 2^3) but is bugged and should not be used.

Making an error in adding a row or column can cause a fatal crash: make sure you do not omit the leading plus sign when entering this type of formula.

Menu commands are Erase sheet, Enter formula, Enter number, Number of digits to display, Go to cell xx, Load sheet, Save sheet, Print sheet, Recalculate, and Quit.

Like TI-Writer, you can use CTRL-3 to change screen/text colors, and the same keys are used to window (FCTN-4, -5 and -6). Using normal cursor keys, columns and rows move off/on screen one at a time.

Spreadsheet professionals may wish to know that CALC is always off, only being performed when a formula is entered or when recalc is chosen. There is no move or copy facility. Cells are blanked by entering a null text. There is no external entry.

I did think of giving you a timing for the calculations, which is easy to do with Multiplan, as it is so incredibly slow in doing a recalc! However, TI-Planner is just too fast for me to give a meaningful timing. My reaction time in turning a stopwatch on and off becomes too meaningful! It is fast.

If Personal Record Keeping can be thought of as an entry level database (it cannot sense 32K RAM, and takes ages to do any calculations) then TI-Planner is its equivalent in the spreadsheet class, but perhaps a little better.

Data is stored in Internal/Fixed 128 files, and you would need a hefty machine code routine if you wished to use these files in other programs. They are superbly coded for a dense data structure. If you wish to export data, it would be easier to print to disk and use the resultant Display/Variable 80 file.

This program is very highly recommended.

Vienna TI fair brought old and new together

By OLIVER ARNOLD and THIERRY NOUSPIKEL

The following review of the International TI Fair in Vienna, Austria, appeared in Bits, Bytes & Pixels, the newsletter of the Lima 99/4A User Group.—Ed.

This was the 10th international TI meeting in Europe. TI friends came from all over to see new software and hardware, and, of course, to get in touch with other TI users. About 70 people attended, most from northern parts of Europe. Some of the visitors used the event as an excuse to visit Vienna. Kurt Radowisch of the Vienna TI user group, organized the event and provided advice on accommodations and sightseeing.

In the event hall, there were about 15 complete TI and Geneve systems to show and demonstrate what can be done with such old computers. There were TI systems with the EVPC, a graphic card for the Peripheral Expansion Box. This card, developed by Michael Becker, gives the best resolution with a TI, even better than is possible with a Geneve, thanks to the 6-bit

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VIENNA TI FAIR —

(Continued from Page 27)

color palette. This palette has a range of 256,000 color possibilities. You could see the difference on a new GIF loader program that displayed a picture with and without the color palette. I saw a picture of a mouse on which you could see fine arteries in the ear.

The new High Speed GPL Card, another product by Becker, was also demonstrated. This card has two megabytes of RAM to load any module you wish. Becker uses flash EPROMs so that the software remains on board after the power is turned off. It is also possible to load multiple modules with ROM because each GROM bank has its own ROM bank. A new loading program makes the card user-friendly.

Thierry Nouspikel, a TI user from Switzerland, brought some of his GPL-related programs. For instance, a 9900 disassembler written in GPL so that it runs in GRAM memory and leaves the whole CPU memory for the program to be disassembled. As will as his new GPL-assembler/loader package and Module Explorer, a software reminiscent of the look and feel of Miller's Graphics Explorer, but deals with GPL. It comprises a GPL disassembler, several analysis screens and a GPL interpreter so that one can execute GPL programs (including BASIC and Extended BASIC) in slow mode or even step by step. Finally Thierry demonstrated a tiny interface board for the connection of a PC analog joystick to the TI joystick port.

Another new project for the TI or Geneve was shown by Oliver Arnold. It is a Teletext card. The card is an external device which is connected to the RS232 interface. On the other hand you need a CVBS signal from a TV or something else. The software is written in C99 and in assembly language. This software controls the decoder chip via the RS232. A menu program which loads the pages directly encoded from the CVBS signal displays Teletext including graphics. All handling is done with this menu. Another new program called scriptloader is controlled by a text file to select pages, change the TV channel and save the pages to any allowing device you like. All searching and saving procedures are done automatically.

Roeland Muys and his father use the Teletext-Card for their great stock exchange program. This program works on a Geneve. In analyzes the different stock data and prints them on screen using high resolution graphic curves. So you see the daily changing courses. In the past Mr. Muys had to input the data by hand, but now using the Teletext-Card the data come on-line into the computer.

The TI-User-Group-Mannheim showed a 16-bit board with a logic analyzer software. This board opens the way to the full 16-bit world. On the board is installed a 64K memory banked RAM with 16-bit access and a super fast 16-bit input/output port expandable to 256 bits; this port can be used by any language you like. All you need is a Call Peek or a Call Load. The board is installed in the TI with a special socket on top of the CPU so it is easy to install it. The next development for this board will be a 16-bit RAMdisk with 2 megabyte RAM. This RAMdisk will be twice as fast as all other RAMdisks.

After dinner, Berry Harmsen, a TI user from Holland, started with an auction about used TI and Geneve hardware. People were selling books, TI computers, full P-boxes, some homemade hardware and even a Geneve. So it was possible to get real good computer equipment at very low prices.

Saturday evening the Vienna User Group organized a music and dance show. With songs of Tina Turner, Mother's Finest, Joe Cocker and many other groups the event got a new nuance. Two girls interpreted these songs very well and made an enjoyable evening.

Sunday was the last chance to turn on the computers in Vienna. The Fair closed after dinner with a farewell until the next TI-Fair to be held in Wolfsburg, Germany.

You can reach the authors at Oliver Arnold, oliver@thorin.swb.de; Thierry Nouspikel,nouspike@cmu.unige.ch.

NEWSBYTES

Vendors slated for MUG

Glenn Bernasek of TI-Chips has announced that several vendors have already committed for the Multi User Group scheduled Brookpark, Ohio, May 25. TI-Chips and the Northcoast 99ers (Cleveland area TI groups) will sponsor the MUG.

Vendors signed up include: Tim Tesch, S&T Software; Bruce Harrison, Harrison Software; Mickey Cendrowski, Notung Software and West Penn 99ers;Jim Krych, SW99ers (SuperAMS); Ron Markus, Ramcharged Computers; and Mike Wright, CaDD Electronics.

Persons wishing to give demos or presentations need to let TI-Chips know the exact presentation subject by April 1, Bernasek says, to allow the group time to set up and publish schedules. Presentations will be scheduled in 30- to 45-minute sessions for the single large conference room. Bernasek says the MUG will be able to hold 12 45-minute demos. Tables and demo time cannot be reserved or allocated on setup day (May 24) or conference day.

For further information, contact Bernasek at 13246 Harper Rd., Strongsville, OH 44136 or call (after 9 p.m. Eastern time) at (216) 846-0865 or Internet dd314@cleveland.freenet.edu.

Fair set for Germany

The 11th International TI99/4A and Myarc Geneve Computer Treffen is scheduled for Sept. 20-22 at Freizeitheim Vorsfelde, Am Sportsplatz 5, D-38448 Wolfsburg, Germany.

Martin Zeddies, one of the fair's organizers, says plans for the fair include a small sightseeing tour of Wolfsburg, site of Volkswagen's automobile factory. He

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NEWSBYTES

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notes that Berlin, Hamburg and Hannover are in day-trip distance from Wolfsburg. For further information, contact Zeddies at Hauptstr. 26, D-38446 Wolfsburg-Reislingen, Germany. Phone/fax number is +Germany-5363-71125.

Perth TI club changes address

The TI Users of Perth has a new mailing address: Secretary TIUP (Inc.), 20 Hudson St., Bayswater 6053, Western Australia.

Oakland club changes address

The Oakland Computer Club, a TI99/4A users group composed primarily of elementary students at the Atwood-Tapley School in Oakland, Maine, has changed its mailing address.

The group may now be contacted at the address of its sponsor: The Oakland Computer Club c/o Eunice Spooner, RR #4, Box 5860 Pond Road, Sidney, ME 04330-9778.

Companion disk for Funnelweb

Jacques Groslouis is offering a companion disk for use with Funnelweb 5.01 that make it easy to incorporate TI-Artist graphics into documents. It handles small and large graphics.

To use these programs you'll need Funnelweb Editor 5.01, which requires Funnelweb 4.4. Also required is an Epson-compatible printer capable of handling downloaded characters and reverse linefeeds. The programs are written in Extended BASIC. The user can revise printer codes.

For more information, contact Groslouis at 1747 Riverbank Dr., Bathurst, New Brunswick, E2A 4L1 Canada; 506-548-3930.

BUG News ends publication

The BUG News, the official newsletter of the Brea 99ers, has ceased publication. The club has sent notices to exchange publications.

Mailing address of the Brea 99ers is c/o B.B. August, 1311 Kenwood St., La Habra, CA 90631-7216.

USER NOTES

RAMdisk and Mini-Memory, and Term-80 tips

This comes from John C. Johnson via the Internet. He writes:

After reading the second paragraph of the second page of appendix 2 in the blue Horizon RAMdisk Reference Manual, I purchased a Mini-Memory cart to allow me to turn off the cards and reload the RAMdisk Operating System (ROS) when experiencing a lockup. The problem I ran into was that while using the CRU command to turn on the card, the appropriate base address was already a 1. It never occurred to me that entering a 1 again would do anything. But it does. It does exactly what it should. The light on the card will light and you now have control of your system and can reload ROS using CFG from the ROS disk furnished.

Discovery number two was that if you have saved a copy of your ROS on a disk, ding that ROS will restore all your files thout having to reload them.

After purchasing Term 80, I had troubles getting it to communicate with the modem on both of my systems. After much experimenting I discovered that pressing FCTN/SHIFT/0 (zero) and holding for a couple of cursor blinks cures the problem. I have contacted Jeff Brown (Term 80 author) about this problem. It has to do with a console he had that used a speeded up clock.

Converting XBASIC programs

This comes from Jim Uzzell. He writes:

The following is a solution to the problem of large programs, like "12 O'CLOCK," published in the December 1995 MICROpendium.

First, you must use MY-BASIC. Load MY-BASIC into your Geneve and at the prompt type KEY LIST and press Enter. This will display a list of function keys and their commands.

You will be working with the information at PPT.

Load any program (MY-BASIC will load TI Extended BASIC Internal/Variable 254 programs).

From the prompt, type LPT DSKx.FILENAME and press Enter. (Don't forget to change LPT back to PIO after you are finished.)

From the prompt, type LLIST W28. "W28" is the width you want the program to be listed (the maximum is 132 characters). This lists the program to disk as a D/V28 file. The LLIST command will always list a blank line first, then the program.

Now you have a choice. You can use Peter Muys' DOS Editor V1.31 to load the D/V28 file, then save it as a D/V80, or you can use the following MY-BASIC program.

```
100 CALL GRAPHICS(4)
110 INPUT "SOURCE PATH.FILEN
AME ":A$
120 INPUT "DESTINATION PATH.
FILENAME ":B$
130 OPEN #1:A$,INPUT,DISPLAY
,VARIABLE 28
140 OPEN #2:B$,OUTPUT,DISPLA
Y,VARIABLE 80
150 LINPUT #1:C$
160 IF EOF(1)=1 THEN 200
170 PRINT #2:C$
175 IF X=2 THEN 230
180 GOTO 150
```

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```
200 CLOSE #1
210 X=2
220 GOTO 170
230 CLOSE #2
240 END
```

Program converts TI sound files for use on PCs

This comes from Owen L. Mayer, of Hoffman Estates, Illinois. He writes:

A program is available that runs under Windows 3.1 that will convert TI Sound F/X files to wave format for use in your PC. The program is called Towave V1.0 and is available on a CD-ROM called Show&Go Graphics & Sound Explorer or perhaps from the author at: Bells & Whistles Software; 3829 Lawndale Ave.; Ft. Worth TX 76133. Show&Go CD-ROMS are from Laser Magic Inc., Eden Prairie, MN 55347.

When converted and the speed adjusted, the sound is better than using the audio from the TI and rerecording with your PC. The program claims to be able to convert sound files from any computer or format to wave format. You will need at least a Sound Blaster V2, 8-bit card, and Creative Wave Studio software version 2.0 to slow down the playback.

Several steps and some time is required. First, use your favorite terminal emulator in the TI. I suggest using XMODEM, 8N1, 2400 baud because it worked well for me. I used a serial cable and null modem direct to the PC that worked on Bruce Harrison's Smart Connect. (I did not use Smart Connect for this transfer).

Open Windows 3.1 and its terminal program. Set the program to the same parameters as above. Set your TI terminal program and enter file name to send. Set the windows terminal program to receive binary file. Enter a drive letter and the same file name and add the extension .TI to it. Then start the transfer for the TI.

On your PC disk you will now have files that DOS or Windows can recognize but which need conversion. Open Towave in Windows 3.1 and select Options. Select 8- or 16-bit, depending on your sound card, and monaural and 44.1 KHz. Then select your .TI file. Simply click on the convert button and a file in .WAV format will be added to the disk. The original may optionally be deleted.

You're not done. You will need to open Creative Lab's Wave Studio program version 2.0 and make some adjustments to slow the speed down. (This wave editor was packaged with the Sound Blaster 2 card). Open the wave file you need to adjust and select Special at the top of the window. Select playback frequency or

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Speed and choose 11.025 KHz. If you then attempt playback, it will probably still be too fast. Select Special again and choose Convert Format back to 44.1 KHz. (The program changed this parameter when you changed the playback frequency). Then select Special again and change the playback to 22.050 KHz. The file should play at the correct speed. When you are done, be sure to choose Save Changes. You may opt to use Towave and Wave Studio at lower speeds to limit the file size. Certain other combinations may work, but these settings provide the best whistle-free sound.

The user should not use the conversion process to mass reproduce copyrighted material.

DM_AID is viewer for Display Master files

The following was written by Mary Leard and appeared in the newsletter of the Dallas TI Home Computer Group. The final program was written by Richard Mitchell and was published in The Smart Programmer.

This program will create a command file for Display Master to view 25-sector program files that have the _P ending in the filename. It will work on TI-Artist and MAX-RLE pictures. DM_AID.

DM_AID

```
100 DISPLAY AT(1,1)ERASE ALL
:"DM AID":"THE SMART PROGRAM
MER" !182
110 OPTION BASE 1 !137
120 DIM N$(127)!206
130 DISPLAY AT(10,1):"NAME F
OR DISPLAY MASTER COMMAND FI
LE:":"DSK1.CFILE" !133
140 ACCEPT AT(12,1)BEEP VALI
DATE(UALPHA,DIGIT,".*")SIZE(
-15):F$ :: DISPLAY AT(5,1):"
 ":"" !060
150 OPEN #1:SEG$(F$,1,5),INP
UT ,RELATIVE,INTERNAL !236
160 I=1 !001
170 INPUT #1:A$,U,U,U !187
180 INPUT #1:N$(I),U,U,U !12
6
190 IF N$(I)=SEG$(F$,6,10)TH
EN DISPLAY AT(5,10:"DUPLICAT
E FILENAME,":"TRY AGAIN" ::
CLOSE #1 :: GOTO 130 !165
200 IF n$(I)<>"" THEN I=I+1
:: IF I<128 THEN 180 !110
210 CLOSE #1 !151
220 OPEN #2:F$,DISPLAY ,VARI
ABLE 80,OUTPUT !141
230 FOR J=1 TO I !136
240 IF POS(N$(J),"_P",2)<>0
THEN PRINT #2:".LOADPIC "&CH
R$(34)&SEG$(F$,1,5)&SEG$(N$(
J),1,LEN(N$(J))-2)&CHR$(34)&
";":" DELAY 5;" !129
250 NEXT J !224
260 CLOSE #2 :: END !165
```

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BUGS & BYTES

Dallas users help kids

The Dallas TI Users Group recently gave two TI99/4A systems to the Bellevue Baptist Church Child Development Center in Hurst, Texas. The teacher reports that the Early Learning Fun module is realy helping several children who had previously not been able to learn as quickly as others.

PV99ers clone around

The Pomona Valley 99ers plan to open their group to users of all other computers as well as the TI99/4A. The club's name will change to Pomona Valley Computer Group. Address is c/o Howard McDonald, 6880 Gloria St., Chino, CA 91710-6278.

CLASSIFIED

FOR SALE

HARDWARE FOR SALE

Smart One 2400X 2400baud modem with power supply (works with any TI modem cable), $30; Volksmodem 1200 baud modem (needs TI cable), $15; Signalman Mark XII 1200 baud modem (incl. TI cable, no docs), $15; Signalman III-TI 300 baud modem (incl. TI cable, no docs), $50; Commodore 1702 color composite monitor, incl. cables for TI99/4A (measures 13" diagonally), $70; add $5 shipping for each item except monitor. Will split shipping cost of monitor. Call John Koloen, 512-255-1512.

TRADE

WILL TRADE

CompleteTI system for a Myarc or CorComp Floppy Disk Controller. It comes with the following: keyboard & cables, PE box, flexcable, 32K memory, TI disk controller, RS232 & Speech Syn. Contact Stan Ulan Tue-Sat Phone (334) 344-2077 Fax (334) 342-1675. v13n2

Call 512-255-1512 to place a classified ad. The cost is 10 cents per word.

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❑ **MICROpendium Index** (2 SSSD disks, 1984-1992), Extended BASIC required $6.00

❑ **MICROpendium Index II** (9 SSSD disks — 1 for each year — 1984-1992), XB required $30.00

❑ **MICROpendium Index II with MICROdex 99** (11 SSSD disks), XB required.....$35.00

❑ **MICROdex 99** (for use with MP Index II, 2 SSSD disks), XB required $10.00

❑ **MICROpendium Index II** annual disks ordered separately (1 disk per year, 1984-1992); each $6.00

MICROdex 99, by Bill Gaskill, is a collection of programs that allow users of MP Index II to modify their index entries, as well as add entries. MICROdex 99 supports many other functions, including file merging, deletion of purged records, record counting and file browsing.

GENEVE DISKS (SSSD unless specified)

❑ **MDOS 2.21** (req. DSSD or larger (for floppy & hard drive systems) $4.00

❑ **GPL 1.5** $4.00

❑ **Myarc Disk Manager 1.50**.....$4.00

❑ **Myarc BASIC 3.0**.....$4.00

❑ **MY-Word V1.21** $4.00

❑ **Menu 80** (specify floppy or hard disk versions(s); includes SETCOLR, SHOWCOLOR, FIND, XUTILS, REMIND $4.00

GENEVE PUBLIC DOMAIN DISKS

These disks consists of public domain programs available from bulletin boards. If ordering DSDD, specify whether Myarc or CorComp.

	SSSD	DSSD	DSDD
❑ **Series 1**	$9.00	$7.00	$5.00
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