Southwest Ninety-Niners Newsletter

contributed by
- Tom Wills -
compliments of

www.ti99ers.org

JUNE 1987
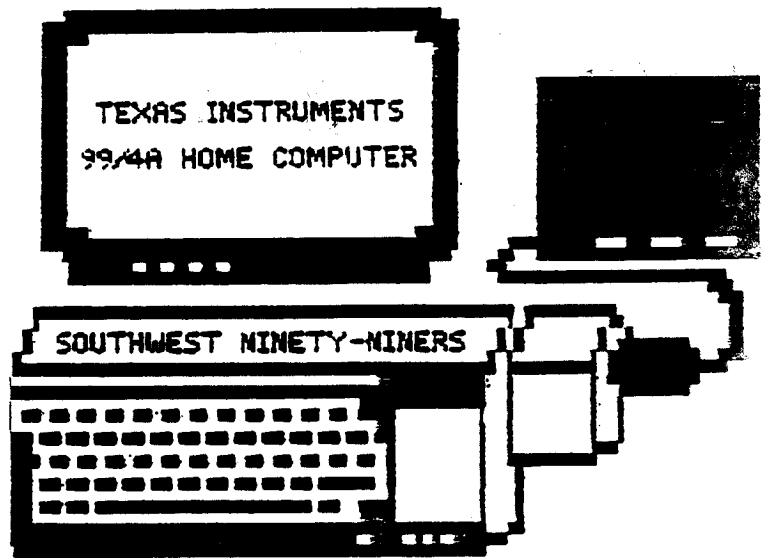
P.O. Box 17831 Tucson, AZ 85730

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Ed Hallett - Vice President
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TEXAS INSTRUMENTS 99/4A HOME COMPUTER

SOUTHWEST NINETY-NINERS

ATTENTION MEMBERS

Next Meeting: May 5, 1987 at 7:30pm. Location-Tucson Fire Department Training Center on Ajo Way just west of Park.

General Users Workshop: 2nd Thursday of each month at 7:30pm (June 11th). Includes: Basic, ExBasic, Hardware/Software Problem-solving, etc.
Mathis Home - 5941 E. 26th - 747-5046

Applications Workshop: Will not be held this month

Advanced Languages Workshop: 4th Tuesday of each month at 7:30pm (May 26th). Includes: FORTH, A/L, etc. Rod Stallard's Home - 7575 E. Logan - 745-6071

PRESIDENT'S CORNER

Al Armstrong, Jack and I attended the 99 Fest West '87 in LA on the 16th and 17th of May. We all enjoyed it. I spent most of my time helping with the registration, so I didn't get to see as much as I would have liked.

Many of the companies that came last year were not represented this year. Les Merryman, the West Coast distributor for MYARC, had four GENEVE's available and sold out within the first five minutes of the Fest. J. Peter Hodie wrote MY-Writer for the Geneve and was there to demonstrate the GENEVE. Craig Miller from MG had his IBM clone going most of the time, however after initial interest his booth was generally deserted. Franz Waggenbach demonstrated the mouse from MEGAtronics, and their GRAM CARTE which works similarly to the GRAM Kracker and is expandable to 512K. The DataBiotics representative showed off several of their programs and had many for sale. Jack got to do more looking and will give a report on the Fest at the meeting.

Rumors have it the Fest will be in Las Vegas next year. I will be in contact with John Martin, president of Southern Nevada Users Group about it on a regular (I hope) basis.

*BJ Mathis * 747-5046*

The Southwest Ninety-Niners now have a BBS. Ed has decided to make it a permanent part of our group. Ed would appreciate donations to allow him to get another phone line so that the ANTFARM can be up 24 hours. Currently you can call the ANTFARM at 889-6930 between 4pm-12pm weekdays ONLY. 300 BAUD Even Parity/1200 BAUD No Parity.

LET'S "UPGRADE"?
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commentary by Todd Clifton

So, you want to trade or sell that old TI-99/4A to "upgrade" to a more "current" machine. Perhaps you are in search of the vaunted IBM compatibility. Well before you make the big jump take a look at that old friend of yours.

Most of us orphans have owned our units for around 4 years. Hardcores have been strumming their keyboards for up to 7 years! After TI pulled out in '83 most owners were ready bail out. After all, up to that time computers whos manufacturers had dropped out had a pretty bleak record. It didn't look much different for the 99. We were left with a computer whos parent company (TI) wanted to be the only software writers for their computer. TI went to great lengths to hide the architecture of the TI-99/4A and install deliberate obstacles in the computer. The sole purpose of this was to discourage third party programmers from writing useful software for it. So while TI was taking us for a ride and heading for a downfall, the third party software libraries for the IBM and Apple grew to tremendous proportions. When TI backed out they had a large user base, but not the software base that it needed to be viable.

A funny thing happened though. Instead of the TI-99 going the way of the Timex-Sinclair 1000, TI users didn't jump ship. This has turned into a phenomenon that few understand even today. The closed architecture that spelled the doom of the TI-99/4A ironically was it's hope of life after death. A couple of years ago the computer hackers were a dominate group in the computer community. These folks would challenge themselves to break into other computers over ordinary phone lines. Many TI owners found out there were lots of secrets locked away in their computers. Rather than hack other folks computers online, TI owners started to hack the 99 itself. It seems every couple of months some new trick or ability of the TI is uncovered. With these revelations came new software for the TI-99/4A that vastly increased its utility. Many of these programs are light years ahead of anything Texas Instruments ever put out, or even imagined. It has been that challenge that has prevented the TI-99/4A from slipping into oblivion. This unraveling of the computers inner workings has also resulted in an ever increasing selection of hardware additions. Hardware variety and availability has never been greater than it is right now.

Most folks that I've heard of that gave up on their TI's did so for IBM/MS-DOS compatibility. It's true, now days you can even go to your local department store and buy an XT compatible for as little as $750. The biggest thing to consider is when you get your new computer home, what are you going to do with it? Software costs for the compatibles are among the highest there are. By the time you pay for a good spreadsheet, word processor, and communications programs the cost will far outweigh that low price on the computer. Unless you need PC compatibility for professional reasons I'd take a long look before I'd jump on the IBM bandwagon. Software prices for the TI are among the lowest you can find. Even the newest and best software is more than fairly priced. The most exciting thing to happen in a

long time is QUALITY freeware is becoming more available every day.

The TI is standing at a point where Apple and IBM owners stood 4 years ago. The TI's operating system is no longer shrouded in mystery. We can look forward to an ever increasing selection of hardware and software that will be more than adequate for any home or hobby use.

1987 will be a watershed year for the TI-99/4A. Don't jump ship yet! The best is yet to come.

SysTex
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Reviewed by David Ormand

This piece of fairware is intended more for the Assembly Language crowd than for common usage, but all users should be interested in the possibilities opened by SysTex.

One of the best features about the TI 99/4A, that sets it apart from other computers, is the ease with which Assembly Language can be merged with BASIC (using the Editor/Assembler cartridge) or Extended BASIC. Three steps — CALL INIT to set up the machine, CALL LOAD to load from disk whatever you want to use, and CALL LINK to run it by name. Values can be passed to and from the Assembly Language subprograms, and many utilities are provided to make complex functions easier to write. The only problem with this is the LOAD part, where the program pauses, sometimes for a significant period, to get the subprograms from the disk and into memory.

Many sophisticated X-BASIC programs available get past even this difficulty by having the Assembly Language subprograms embedded in the main program, in various ingenious ways. Then, when you load your X-BASIC program, you load the subprograms along with it. No waiting for disk calls. Unless you are a clever programmer, however, and have a good understanding of how the BASIC system works, and are prepared to write the machine code directly to disk with a sector editor, you couldn't do this yourself.

SysTex allows you to embed these Assembly Language subprograms in a section of BASIC program. Very easily.

WHAT YOU GET: The SysTex disk contains two files — SYSTEXDOC and SYSTEX. The former is two sheets of text that tell you how to work the program. It's sufficient; there isn't much to the program.

HOW IT WORKS: You load your Assembly Language subprograms into memory, from Command Mode. Then you load and run SYSTEX. The result is lines 1 through 9 of BASIC program code, consisting of seven remark lines and one of those mystifying CALL LOAD(#,#,#) commands these sophisticated programs always have. The subprograms are embedded in these lines, invisible but ready for use. You then write your program after line 9, and whenever you want to use one of the subprograms, you just LINK to it by name, variables and all, just like always.

COMMENTS: I tried SysTex on just such a subprogram that I had. In half an hour, from looking at the disk directory the first time, I had a "sophisticated" X-BASIC program with embedded machine code merrily chugging along. Quick, easy, no problems, no errors. Because it replaces only the LOAD process and does not affect the interface with the utilities, I cannot see how there could be any functional failures at all. The only problem I see is, how much can you stuff into nine lines of BASIC? I doubt I

will ever write functions that large, but someone might. My understanding of BASIC is not good enough to say.

The author is Barry Boone, who suggests a $10 contribution. This may seem high for twenty-some sectors on a disk, especially considering fees for larger and more intricate fairware programs. For what it allows you to do, though, I would say it is worth it. For people who don't mix Assembly and BASIC, it is not much good, but for those who do, I suggest you try it out. This one may become a standard tool.

STAR (Super TI Assembly Routines)

Reviewed by David Ormand

Perhaps the hardest thing to live down about the 99/4A - next to its being an orphan - is how slow it is. Of all the home computers, BASIC programs on the TI take by far the longest to run. Another problem with BASIC (on any machine, not just the TI) is the limitations on control. You cannot directly control most of the computer systems with BASIC commands.

Assembly Language, however, is tops in speed and control. If you can merge the power and speed of Assembly with easy-to-use BASIC, you would have a useful combination indeed. TI Extended BASIC permits this merging in a simple fashion, and therefore many software authors have prepared libraries of Assembly Language subprograms to use with X-BASIC, to give this power and speed to people who program in BASIC but not Assembly Language.

STAR is the latest of these library packages, and it's fairware. It has some interesting features, and like everything else in the world, it is good and bad - some of the library routines are clunkers, but some are gems.

WHAT YOU GET: STAR comes on two SS/SD disks. The first is DOCS, and includes STARDOC1 and STARDOC2, two parts of a multi-page instruction sheet that tells you pretty much everything you want to know - how to use the routines, how to modify certain features, and additional information on the STAR system. The other disk includes the LOAD series, which is STAR proper, and a set of demonstration programs and files used by them.

HOW IT WORKS: The system disk has to be in Drive 1 when you activate Extended BASIC. The LOAD program, which automatically executes, puts the library in low-order memory and displays an interesting title screen. After you cycle through this and the typical fairware ask-for-$ screen with keypresses, you are in Command Mode with no program present. You can also modify the LOAD program to do other things, like load-and-run an X-BASIC program. Once STAR is loaded, it is there until you CALL INIT or turn the power off; NEW, BYE, and QUIT (fctn +) do not destroy the routines. Once loaded, you can use the routines with the standard CALL LINK instruction, using the format given in the documentation.

There are 53 (!) functions that cover a broad range of possible applications. The most numerous (naturally) are the ones for video control. A large number deal with character patterns - redefining the character sets, copying character patterns, rotating or flipping characters, or producing inverse video. In my opinion, these are of small practical value. Others are good: using 40-column Text mode from BASIC, saving and recalling screens on disk, and being able to directly influence VDP memory and control registers. There are some interesting keyboard functions, like sensing Shift, Control, and Function, and one like CALL KEY except it allows you to specify certain keys to look for, like ACCEPT AT - VALIDATE. The real champs were the disk

access functions. A cataloguer has been thoughtfully provided, usable from within programs as well as from Command Mode. Two functions read, or write a sector (!) from a disk into two string variables. The disk editor monkeys will have some real fun with that! To wrap up this quick taste of STAR offerings, let me describe three last functions. One is "ERR," which emits the BASIC error message of your choice and halts - just like a real, automatic error, but under your control. Maybe there is a use for that one. "NEW" and "BYE" allow you to use the corresponding commands from programs; the former puts you back in Command Mode and erases the program, and the latter returns to the main title screen. Very elegant exits from your program!

COMMENTS: Since this is fairware, I would encourage any programmers who have never used Assembly Language utility routines to get it and try it out. You will certainly get an idea of the enhanced power of X-BASIC this feature provides and how easy it is to use. If you decide you don't want it, just clean off the disk. If you like the added features, and the speed with which some functions execute, send Michael Riccio his $10 to $15 or whatever you think is fair. For Assembly programmers, Mr. Riccio also has the source code for the routines as an education or tips on certain tricks, For sale ($20), and you have to pay for STAR first.

The only real gripe I have about STAR would probably apply to all the other such library packages - you can only use their routines, no others. What I would like to see is a real library of functions - you could pick the ones you want for an application and omit the rest, receive new functions or improved versions of old ones as updates, and add you own if you wish. Myself, I'll hold out for just such a system or service, but for others, STAR is a pretty good representative of the genre of Extended BASIC Assembly Language subprogram libraries, and, being fairware, is an excellent introduction to this powerful programming aid.

WHAT DID WE GET FOR YOU?

At the last meeting the group authorized $200 toward purchases for the group library while we were at Fest West '87. I am sure all of you are wondering what we got, here's the list, hope you find something of interest:

BOOKS

TI99/4A INTERN by Heiner Martin - The operating System of TI 99/4A internal ROM and GROM Listing with Commentary and Directions for GPL.

TI-WRITER - Tips and Hints - Compiled by LA Users Group.

PUBLIC DOMAIN DISKS - from Boston Computer Society's library

30) Forth Programs #1: Collection of Forth programs and utilities by John Volk. Includes graphics, a word to "disassemble" a Forth word, and over 25 others. Requires Forth system master.

31) Forth Programs #2: Another collection of Forth programs by John Volk. Primarily games. A great way to learn how to translate from BASIC to Forth and how to use graphics (including bit-map) in Forth. Requires Forth system master.

34) Statistics and Sorting: Two utilities by John Clulow. All in assembly. SORT allows you to sort by two separate fields and to choose between two types of sorts. STAT is a set of statistics routines for use in Extended BASIC. XB and EA.

39) Forth Tutorial: An excellent lesson in programming in Forth by Howie Rosenberg.

Explains very completely how to create graphics and how to do it fast. Comes with several Forth "words" including one to draw cycloids in bit-map.

40) C tutorial:V3.0: Put together by Donald Mahler. This disk contains many C programming examples of various levels of complexity. It explains how to create functions, how to save C programs in Program Image format, and show the steps involved in developing C programs. Also includes a set of functions to allow you to use strings in C. Requires c99.

41) PULSAR Utilities: Set of assembly language utilities (with source code) to allow you to easily translate BASIC programs to assembly. Contains several demos. Great for quickly writing assembly code or for "borrowing" code for your own programs. By Michael Amundsen.

44) Sorgan: An assembly program that turns your computer keyboard into an organ. Sound effects, different instruments, various chord forms, color graphics, complete control of all sound parameters. Requires EA.

54) R.L.E. Graphics: Program which allows use of VIDTEX bit-map graphics on the TI. Files can be transferred via modem and then displayed, printed, or loaded in Graphx or TI-Artist. many sample screens on disk. Requires EA.

56) Memory Manipulator: Program to let you explore all the memory in your TI and take apart what you find. Very user friendly. Very complete. Developed by Thomson Software and generously made available to user groups. Requires EA or XB.

62) RLE Pictures #1: A general collection of pictures for use with the RLE graphics system. (BCS disk #54).

63) RLE Pictures #2: Famous Logos: Including Coke, Corvette, The Wall, Rocky Horror, Mac(intosh), Middle Earth, and more.

64) RLE Pictures #1: Space and Science fiction: Including the Enterprise, space shuttle, Star Wars, Dr. Who, and more.

65) RLE Pictures #1: Famous Folks: Including Bugs Bunny, Dracula, Walt Disney, rock stars, and more.

68) C Programs: Programs written in c99 collected by Clint Pulley. Includes an archiver, C-Invaders, Tic-Tac-Toe, graphics demos and more. C source code to most programs is on disk. EA required.

69) Colossal Caves V1.1: The original adventure game finally translated to the TI. This game was the precursor to the classic Zork series. Hours of text adventure solving fun. (Requires Adventure module.)

Special #2) GRAM Kracker Stuff: Contains version of Fast-term and Disk Manager 1000 that load into the GRAM 1 and 2 space to replace TI BASIC on main menu. Also a version that puts both of them in the cartridge space together. Several files on GRAM Kracker modifications from TI Forum on Compuserve .

FAIRWARE DISKS

81. DAYS OF EDEN and DOORS OF EDEN - Steven Chaeirs...6969 Anthony, NM 88021. Bible games that require the ADVENTURE module. They are not fiction. Send $2 or more to the author.

92. PRINTER UTILITIES - Tom Wynne...16223 70th Pl W, Edmondson, WA 98020. Includes

the Graphpaper printer we already had and a couple other things too. Send $2 or more.

135. EMUSIC PREPROCESSOR – Norm Sellers, 15 Dorset Drive, Broomall, PA 19008. I am told it is a fantastic program for the music buffs. (2 disks) Send $10 or more.

145. DISK UTILITIES – John Birdwell, 7052 Springhill Circle, Eden Prairie, MN 55344. Runs out of TI-Writer, Extended Basic, or Editor/Assembler. Requirements include memory expansion and disk system. Utilities include Compare Disks, Print Sectors, Sector Editor, Find String, Disk Report, Director/Comments, Printer Setup, Screen Colors and File Utilities. File Utilities include File Compare, File Print, File Edit, Find String and File Report. Documentation is on the disk. THE best! MICROpendium Feb '87. Send $10 or more to the author.

152. SAVEXT – Norm Sellers, 15 Dorset Drive, Broomall, PA 19008. A BASIC program to recover an Extended Basic program that is in memory when the system crashes. This is done by searching high memory or the program line number table. When found, the program displays the CALL LOAD that may be entered to fully recover the program so it may be saved. Requires XB, E/A, and Extended Memory. It really works! Send $5 or more to the author.

154. CATALOGING LIBRARY – Marty Kroll Jr., 218 Kaplan Avenue, Pittsburg, PA 15227. CATLIB is a disk cataloging program capable of cataloging 900 files and 123 disks on each set of data files . One DSDD disk holds more than 5 sets of saved files, enabling storage for more than 5000 programs and 600 disks on one data disk. Many features included! Documentation is on the disk. Requires 32K memory expansion, and either Editor/Assembler or Mini Memory module. Send $10 or more to the author.

163. MACRO ASSEMBLER – R A Green, 1032 Chantenay Drive, Gloucester, Ontario, Canada, K1C 2K9. The RAG Software Assembler is compatible with the TI Assembler except for some instructions and assembler directives not supported by the TI 99/4A. It has several important improvements including a macro facility, improved listing format, improved diagnostics format, a cross-reference listing, and runs independent of any module. Much more! 2 disks. Send $10 or more to the author.

164. TI 99/4A LINKER – R A Green, 1032 Chantenay Drive, Gloucester, Ontario, Canada, K1C 2K9. The TI 99/4A LINKER is a tool for building assembly language memory image programs from tagged object. It makes this process simple and straight forward. LINKER's main features are: tagged object modules may be compressed and/or uncompressed, tagged object modules may be absolute or relocatable, a library search can be done to resolve REF's, a listing can be produced containing object information, memory maps and REF/DEF cross-references, and the memory image program can be built to load anywhere in the TI 99/4A's 64K address space. Much more! Send $10 or more to the author.

169. GRAPHIC LABELER – Steven McWatty, 265 Dale Ave Apt#33, Ottawa, Ontario, Canada K1N 6G4. Allows creating 15/16" X 3 1/2" labels using graphics from Dave Rose's Character Set and Graphic Design program. Many graphics included. Options include load label, load graphic, print label, end, save label, and change or enter text. Very useful! Send $10 or more to the author.

184. TRACKER from ATRACKS – Will McGovern, 215 Grinsell St, Kotara, NSW 2288, Australia. Track copier for MYARC disk controllers. Send payment to the author.

185. XB-HELPER – Ken Houle. A program designed to give the Extended Basic programmer some extra help. It is 100% assembly language that redefines many of the control keys to allow you to press one key for LIST, RUN, CALL CLEAR, and many more. Send payment to the author.

BUYER'S GUIDE
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The following information is provided as a service to our members. The items listed are for sale by the individuals indicated and are subject to prior sale. The group assumes no responsibility for items listed and makes no claims as to their condition or interface capability with the TI-994A computer. Only computer related items will be accepted for publication in this newsletter.

WANTED - Super Sketch - Willing to negotiate. Call Peggy Giddings 795-1915 or 621-7374 (work).

TI-99/4A Console $50; TI LOGO $15; (plus the following cartridges) Car Wars; Tax/Investment Record Keeping; Attack; Number Magic; Tombstone City; and TI Invaders. Documentation and cables included. Call and make an offer John 296-8198.

TI-99/4A Console, Cassette cable and two games $60. Call Ejaz 623-8257.

2-TI-99/4A consoles $50 ea, *2 CDC Floppy Drives DSDD half height $110 ea, Multiplan $30, *Speech Synthesizer $33, P-Code Card w/documentation & disks $90, *3 console power supplies(the good ones) $5 ea. All items are new/unused. *These items are not negotiable. Call Dick 790-4779.

TI Program Cassette Recorder w/cable $25. Call Mike 722-8620 evenings and weekends.

Star Micronics Thermal Printer w/4+, 100' rolls of Thermal paper & instruction book. Requires parallel RS232 hook up - $100 o.b.o. Shugart SS Disk Drive PHP 1250 for use in PE Box w/TI Disk Controller Card PHP 1240 & TI Disk Manager 2 - $100 o.b.o. Manuals and ribbon cable included. Call J.F. Hale 296-5602 evenings.

TI 32K Memory Card for P-box $75, Full height SS Disk Drive PHP 1240 $40. Modules: Tax Investment Record Keeping $4, Household Budget Management $4, Personal Real Estate $4, Home Financial Decisions $3, Personal Report Generator $8, Personal Record Keeping $8. Book - Compute!'s Beginner's Guide to Assembly Language $8. Call Jack or BJ 747-5046.

Sakata SG1000 high resolution green monitor composite video w/video cable $60. Call George 742-3091.

TI-99/4A Console, TI Joysticks, Thermal printer, Cassette Recorder, 12" TV(BW), Selling all for $125 or best offer. Call Paul Garrison 747-3884 (Days) or 573-0572(Evenings).

FOR MEMBERS ONLY: These used items the group has for sale. You can call me ahead of time, I will hold what you want until 8:30pm on meeting night.

*BJ * 747-5046*

$30 TI-99/4A Console	$25 TI-99/4A Console 1983 vers.2.2
$50 P-code Card(no docs or disks)	$8 Personal Report Generator
$3 The Attack	$8 Personal Record Keeping
$4 Jawbreaker 2	$4 Tax Investment Record Keeping
$3 Tombstone City	$8 Return to Pirate's Isle
$8 Terminal Emulator 2	$8 PIO/RS232 cable (Epson type)
$3 Home Financial Decisions	$3 Household Budget Management
$4 A-MAZE-ING	$3 Munch Man
$3 Cassette and monitor cables	$7 Music Maker