CHANNEL 99

VOLUME 6 --- MARCH 1989 --- NUMBER 1

The "OFFICIAL" newsletter of the

TI Club of Oxnard and The Tri Valley 99ers

Club Happenings by Jeff Asenas

Welcome to the first edition of the combined TICO Topics/Channel 99 newsletter. I know members of both clubs are probably wondering why this is and I will try to explain without getting into much detail.

The Tri Valley 99ers who have been in limbo for the past several months have a rapidly dwindling treasury. This is due to three things: (1) No meetings to take in raffle monies or library usage fees, (2) Newsletter costs (paper, stamps, etc.) and (3) No meetings = members not sure about renewing memberships. Now from the TICO end of things, the former newsletter editor just seemed not to get enough input from members and was getting burned out, so at the last TICO meeting, I agreed to take over the newsletter on the exception that we could combine it with Tri Valley's Newsletter in order to cut costs for both clubs.

NIC NEANESS

This doesn't really mean any changes for members, but to the clubs we exchange with please read this: Please send the exchange newsletters to the address on the back cover, you can send either to TICO or to Tri Valley or to both, but be forewarned that you will only recieve one copy of our group's newsletter (we're poor enough!!).

As for other news, the San Diego was pretty good. All the usual people were there: Jerry Price, Terry Masters,

Fred Moore (Librarian of L.A. Group), Franz Wagenbach, Ray Kazmer, etc., etc. The accomadations looked nice but were under construction for remodeling. My dad and I drove from Fillmore to San Diego in 4 hrs., and went right into the Exhibit hall (can't remember what it was called cause I was too sleepy). It wasn't too big but with all the tables it felt quite cozy. About the only new software down there was Jiffy Flyer v3.0 and Jiffy Card by Rodger Merritt which will be shown at the meeting. Also, my dad picked up "Home Publishing on the 99/4a" which is pretty good reading except I didn't think that it really explained how to do very much. It explains layout and columnization and how we should have a multitude of graphics and 100% original articles in our newsletters. Also about 10 pages are devoted to the various fonts and 4 have advertisements (in a book?). The book is well written though and 2 twenty page updates are included in the price, $15, plus a disk of programs which are minorly discussed in the book. Last but not least, I selected several disks out of the L.A. library to put in ours. The updates are published elsewhere in the newsletter.

That's about it for this month except I would like to invite all TICO members to the Tri Valley meeting on the 22nd and all Tri Valley members to the TICO meeting on the 5th of March.

This maybe a start of a new series of articles on some of the many programmers that I feel need some mentioning for their contributions to the TI community, be their contribution only one product or as in this case, several countless programs that make life a little easier. This month Jim Peterson has been selected mainly for his tireless efforts, and because I do happen to own the following series and have made use of many of them. Enough said let' get down to the .....

THE TIGERCUB NUTS AND BOLTS DISKS

What are they? The Nuts Bolts disks are collections of 100 or more subprograms in merge format, ready to merge into your own programs.

And what does that mean? Well, TI-99/4A Extended Basic allows the use of user-written subprograms. And what are subprograms? You know them well. CALL COLOR, CALL SOUND, CALL HCHAR - those are all subprograms which are built into the Basic language. You can write your own subprograms, to do anything that Extended Basic is capable of, and tack them onto the end of your program to be CALLed whenever needed.
To put it in another way, using a subprogram is almost like running one program from another - except that you can access it much faster, you can pass along any values that you want to, and you can return to where you left the first program.

Also, with a disk drive you can save programs in MERGE format and then MERGE them into a program in memory. Providing that the line numbers are different, the program which you merge in will be added to the existing program.

The variables used in a subprogram are entirely separate from those used in the main program, therefore libraries of utility subprograms can be developed in MERGE format, and merged into any program without conflict.

The Nuts and Bolts disks are libraries of such subprograms. The first disk contains 100 such subprograms, plus a tutorial on using them. Disk No. 2 contains 108, and Disk No. 3 contains 140 of them in 114 files. Nothing like them has ever been offered by anyone else for the TI-99/4A computer.

These 348 subprograms have been consecutively line-numbered with high line numbers so that they will not overwrite your program lines, and so that any number of them can be merged into a program without overwriting each other.
Advanced programming techniques have been used to make these routines as compact as possible, averaging hardly more than 3 sectors each, so that a hundred or more could be crammed onto a disk and so that they would add very litle to the length of a program. If you are learning to program, you might learn a great deal by studying these routines.

Each disk is accompanied by several pages of printed documentation,

explaining the use of each subprogram and giving a short demo routine which you can key in, run, and experiment with.

Many of these subprograms can be used by persons with almost no programming knowledge, to modify existing programs. For instance, a program written in Basic, which crashes with BAD VALUE when run in XBasic, will run with a simple CALL BXB, and CALL KILLQUIT will disable the infernal QUIT key. Many different screen character styles are available, as well as colorful wipes to replace CALL CLEAR.

However, it is the programmer who will find these disks truly invaluable. Even if you had the skill and ingenuity to develop these routines for yourself, wouldn't you rather pay just fifteen cents apiece for them?

The three Nuts Bolts disks are available for $15 each, postpaid, from Tigercub Software, 156 Collingwood Ave., Columbus OH 43213.

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NUTS BOLTS DISK (No. 1) $15.00 postpaid

100 Extended Basic utility programs in MERGE format, ready to be MERGEd into your own programs. Line-numbered consecutively in high numbers so that they will not interfere with your program or with each other. Contents include: 13 type fonts including giant, stylized, slanted, enlarged, upside down and inverse characters, compressed numbers, Russian, slashed zero, etc. 13 text display routines including scrolling, fade-in, instant screens, columnizing, etc. 10 screen wipes including border and wipe, curtains, fade-out, etc. 8 pauses including key holds and stop-and-go, music while you wait, music while you read, etc. 3 programming aids including a screen grid, check routine, and the kill-quit routine. 9 data-saving and reading routines including some little-known memory-saving methods. 12 sorts and scrambles for both numeric and string data, inserting data, shuffling, etc. 3 time and date – perpetual calendar, etc. And protection routines, printer aids, joystick and cursor controls, math, music routines, etc. Plus a tutorial program on using subprograms, and the Tigercub Menuloader, and 3 pages of documentation with an example of the use of each subprogram.

NUTS-BOLTS DISK No. 2 $15.00 postpaid

Another 108 utility subprograms in MERGE format. Contents include: 20 character fonts and related routines including giant, enlarged, double-height, double-width, script, sideways and underlined characters, etc. 21 screen display routines including horizontal and vertical scrolling, centering, titling, etc. 3 joystick routines for one or two joysticks. 13 math routines including every conversion between binary, hex and decimal, and more. 6 very unusual graph routines, one for printer. 3 self-changing routines to permit use of a variable in a GOSUB, GOTO or RESTORE. 1 speech routine and 2 sound effect routines. 4 word processing subprograms including screen formatting, plural endings, replacing strings. 5 utilities including the INIT check, instant color changes, resets, reading memory size. 10 programming utilities to edit and save screens, print screens, call disk catalog, etc. Also 4 file handling, 2 menu routines, 6 sorting routines for 2-dimensional arrays, etc., etc. With 10 pages of documentation, containing an example of the use of each subprogram.

NUTS-BOLTS DISK No. 3 $15.00 postpaid

Another 140 utility subprograms, in 120 files, in MERGE format. Contents include: 19 screen character fonts and related routines including HALFCHAR at 56-64 characters per line, stylized FANCYFONT, lopsided FUNNYFONT, and SPOOKY, HEBREW, JAPANESE, DOUBLE HIGH, OLD ENGLISH, OLDSTYLE, and the greatly enlarged BIGLOW, SUPERCHAR, SKINNY and THINLINE. 17 screen display routines including BACKDROP, BACKFORTH, BURST and SLURP, a 32-column DISPLAY AT, DIAGBAN for a diagonal banner and SLIDE to slide it off the screen, WALKING text, UPSCROLL and even a WINDOW routine. 6 screen formatting routines to display text without wraparound, fill and adjust, right justify, reduce proportionately, delete columns, etc. 8 plotting routines to create circles of sprites, high resolution circles, lines and boxes, etc. 6 joystick and keyboard routines, a joystick mouse, etc. 32 math routines including decimal to fraction, markdown and markup, MOD, MEDIAN and VARIANCE, acceptance within tolerance, twos complement, etc., etc. 4 time and date routines for Julian to calendar conversion, a sprite timer and a timing bar. 9 string handling routines to convert adjectives to adverbs, verbs to past tense or add "ing", simulate the LEFT$, RIGHT$ and MID$ of other Basics, find the last occurrence of a substring, simulate MAX and MIN with strings, etc. 15 file handling routines including fast binary searches, a versatile keysearch, routines to handle tabbed fields, etc., etc. 10 input and accept routines, and 9 miscellaneous routines including the extremely useful BXB to run Basic programs in XBasic or use 17 character sets in XBasic. With 11 pages of documentation giving an example of the use of each subprogram.

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Again, if you see something that interests you, by all means contact Jim and he will get back to you. So until next month...

Gabriel Asenas

the CRACKER BARREL
by Chick De Marti

March 1989

THIS WORLD WE LIVE IN

Martin Marietta Energy Systems glued microchip devices to the backs of killer bees to track their northward migration.

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During a meeting of the Copyright Society...the Library of Congress Copyright Office announced that software copyrights protect screen displays from infringement ...(but)... at the same time, it said that menu screens are uncopyrightable. A federal court may have to decide which version prevails.

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An Anaheim, Ca. Corporation repair technician traced the cause of a malfunctioning PC to a joint of marijuana that had been wedged inside a floppy disk drive. (another type of roach, I mean, BUG.....c.d.)

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"It Felt Good When He Stopped"

Las Vegas Casinos ejected a man for card counting. The blackjack player strapped a tiny computer to his leg and entered data by tapping his shoes, which contained micro-switches. The computer responded with electrical impulses in a wire attached to the strap of the card player's athletic supporter (O O O W www).

These four items were taken from a Bill Howard article "ABORT,RETRY,FAIL" in PC Magazine, Jan 17th, 1989.

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Is There Nothing Sacred?

Up until now APPLE has been free of clones, but now (for those of you who can't make up your mind whether your 2nd computer (TI being 1st) should be an APPLE or IBM), Cardata, of Compton, Ca. is producin he WPC Bridge, a new micro-computer   emulates a 128K Apple   and a   IBM PC/AT clone. WPC (for Wizard PC) should   l for

(Apple/IBM continued)

about $1695, which will include a built in 12" tilt-screen monitor, 2 5 1/4" disk drives, plug-in keyboard It also includes 3 PC-style expansion slots,parallel and RS232 serial ports and an Apple 9-pin game port. Now you can have your Apple-cake and eat it too (chuckle-chuckle).

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DEBUGGING PROBLEMS?

To coin a phrase from a popular Christmas (Christmas?) song, "though it's been said many times, many ways ...", it can always bair repeating, especially for beginners because they are always expecting the worst when a program crashes ("Now what did I do?") and they tend to overlook some simple solutions. Let's say you get an ERROR in 2160. The problem doesn't necessarily have to be in line 2160. Consider the line:

2160 RØ=(AB+100)/(CO*12)

Looks OK! TI keeps all variables in tact when a program crashes. You can use PRINT to find the current values for the affected variables. In the immediate mode, type this line:

PRINT AB, CO

Let's say the result is 544 and 0. Here we may have located the problem Why is CO equal to zero? Checking your program, you may have typed CØ (zero) instead of the letter O, this is a common error. This could leave CO undefined. But let's say you do verify that all occurrences of CO are correct, including this line assigning a value to CO ...

410 CO=LI*2.731/DO

The problem could be here! Should the LI(eye) actually be L1(one)? Another common error. Check the program again.

A shortcut at this time might be:

411 BREAK

and run the program again. At the

notice, "BREAK in 411" type the line:

        PRINT LI. L1

If the result is 0, 53 (or any number)
then line 410 should be corrected to:
        CO=L1(one) etc.

At this point let me offer a solution
suggested by Sol Shulman, a member of
our group, "Use meaningful words as
variables (this is also mentioned in
my EZ-BASICS), examples are:

        RECORD   instead of RQ
        COST   instead of CO
        LIGHT   instead of LI
        TOTAL etc., etc.

DATA ERRORS

    If you get an error message:

        DATA ERROR IN 830

    Checking line 800 will usually show
something like this:

        READ A,B,C$ (or whatever)

    BEFORE making any changes in your
program line, again in the immediate
mode, enter:

        PRINT A; B; C$

(or whatever the variables in line 800
were).   The numbers and text displayed
at this time will represent the
CORRECT data entries. The error should
be the NEXT data entry after those dis
played above (more correctly this could
be stated,"after ONE of the displayed
items".   Look down your lines of DATA.
(Let's use this example...)

        9000 DATA 25,45,JANUARY
        9010 DATA 24.44,FEBRUARY
        9020 DATA 23,43,MARCH

    When your program crashed and you
tried to locate the data error with:

        PRINT A,B,C$ the result is:
        24.44   45 JANUARY

The error becomes rather obvious. The
variables B and C$ are correct from
the line before (9000), the 24.44
represents a data item on 9010, though
it is obviously wrong (the period
should have been a comma).
    Here you have seen the power of the

PRINT command in the immediate mode,
as an aid to debugging. It is by no
means the only solution, but it has
worked for me when I did "My Way".

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```
10 ! |=======================|
20 ! |                       |
30 ! |    MENU  PROGRAM       |
40 ! |   using CTRL keys      |
50 ! |                       |
60 ! | by Chick De Marti     |
70 ! |                       |
80 ! |=======================|
90 !
100 CALL CLEAR
110 PRINT " CTRL-1 ... Delet
e a File": :
120 PRINT " CTRL-2 ... Creat
e a File": :
130 PRINT " CTRL-3 ... Chang
e a File": :
140 PRINT " CTRL-0 ... Quit
Program": :
150 PRINT " Press your choic
e": : : :
160 CALL KEY(0,K,S):: IF (S=
0)+(K<176)+(K>179)THEN 160
170 IF K=176 THEN CALL CLEAR
 :: END
180 ON K-176 GOSUB 200,300,4
00
190 GOTO 100
195 !
200 DISPLAY AT(12,10)ERASE A
LL:"=DELETE=": :"   routine
would be here"
210 CALL PAUSE :: RETURN
220 !
300 DISPLAY AT(12,10)ERASE A
LL:"=CREATE=": :"   routine
 would be here"
310 CALL PAUSE :: RETURN
320 !
400 DISPLAY AT(12,10)ERASE A
LL:"=CHANGE=": :"   routine
 would be here"
410 CALL PAUSE :: RETURN
420 !
430 ! ---sub routine---
440 !
450 SUB PAUSE
460 DISPLAY AT(24,1):"[Press
 ANY key to continue]"
470 CALL KEY(0,K,S):: IF S=0
THEN 470
480 SUBEND
```

    I'm out of coffee, see
    you next month at the
        CRACKER BARREL
    * - - C H I C K - - *

TELECOMMUNICATION STATION

The Keep BBS run by former president, Greg McGill is one of the most valuable sources of information in Ventura County for our TI-99/4a or Geneve's. In fact, it is the only BBS in Vta. County that even supports our computer. The follow- ing is a small guide to get around to the TI specific areas.

1: THE MESSAGE BASE
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The Keep only has one message base devoted to our computers and that is the national TI-Echo (at one point there were 2 but lack of interest closed one). First, to get to the TI Echo, log on to the BBS by calling (805)495-1479 and flipping your DATA/TALK switch if you have a dumb modem or by typing: ATDT1-805-495-1479 (type 805 only if you are outside that area code). If you have a "dumb" modem switch over when you hear a high pitched noise.

The BBS will recognize you and will start to display information. To bypass this press "S" (S to Stop, P to Pause and C to continue). Now type in your first and last name. One of two things will now happen:

(1) If you are a new user, you will be prompted for a series of confidential questions for the System Operator's files. Then write down the password you told the BBS you want to use so when you log on again you can bypass all the ??'s and get right on to the BBS.

(2) You will enter in a password and will get into the BBS without any prob- lems.

Now to get to the TI-Echo message base press the following keys to get there from the main menu: MDNN3. This will get you to the TI-Echo where you can post messages that will be read by TI Owners around the country. This is of great advantage because you can ask questions about anything and they will

2: THE FILE TRANSFERS
=======================

The Keep has a growing TI file section which has many of the latest in TI software. Since it is being run on an IBM there are many different protocols that you can transfer with. To get to the file section hit "T" from the main menu and you will then be in the SIG area. Press 1 for TI transfers. There are other transfers for other computers also for instance, there are many MACintosh pictures which you can download and then view with MAC-Flix.

When you are in the TI File transfers area, press "L" to list the files. It is best to dump these to printer as the listing is in 80 columns and is quite hard to read on our 40 column screen. This can be overcome by using WY-Term which has 64 columns but you'd probably have to squint to read the letters or you could use a Geneve. Press FCTN-2 in Telco or CTRL-2 in Fast-Term to turn on the spoolers to dump to printer.

When you have found a file you want, press "D" from the TI Transfers menu. You will now be prompted for a Transfer Protocol. On the TI there are several. With Telco, you can download using Ymodem (press Y at the prompt) or Xmodem (press X at the prompt). If you have the KERMIT transfer program and want to run at 300 baud, you could use the KERMIT protocol. With Fast-Term you can only use Xmodem. Now type in the name of the file you want and then put your particular program into transfer mode and away you go.

There are many other numerous features on The Keep that you may find interesting. Perhaps Greg would start writing a column on how to access the many features of his vast BBS.

Until next time...

COMPRODINE PRODUCTS   2/89

COMPRODINE	PROGRAM TYPE	SUGG PRICE	MY PRICE	POSTAGE
BINGO /rm	game w/speech prints boards	5.00	5.00	1.00
PRINTIT /rm	desktop publishing, banners	8.00	8.00	1.50
PRINTIT+ /rm	additional fonts	5.00	5.00	1.00
PICTURE IT /rm	I to XB, Banners, TI-WRITER	10.00	10.00	1.00
JIFFY FLYER /rm	WYSIWYG full page in <5 min	10.00	10.00	1.00
FORM SHOP/sm/rm	Create/Print WYSIWYG forms	15.00	15.00	1.00
JIFFY CARD /rm	WYSIWYG 4 fold in <5 min	15.00	15.00	1.00
CLASS /harms	CAD sign program for SXB	10.00	10.00	1.50
MICRODEX/gaskill	Index to all TI information	15.00	15.00	1.50
PERSONAL AUDITOR	Excellent, well documented	15.00	15.00	1.50

INSCEBOT	PROGRAM TYPE	SUGG PRICE	MY PRICE	POSTAGE
TI-ARTIST	TI standard for art/artwork	20.00	18.00	1.50
ARTIST EXTRAS	artwork and conversions	7.00	7.00	1.00
DISPLAY MASTER	slide shows for ARTIST, P	15.00	14.00	1.50
TI BASE	data base for advanced needs	25.00	20.00	1.50

GREAT LAKES	PROGRAM TYPE	SUGG PRICE	MY PRICE	POSTAGE
EXT BUS GRAPHS	variety from your data	15.00	12.00	1.50
JOYPAINT	superior drawing program	25.00	20.00	1.50
JOYPAINT PAL	extra features/compatability	10.00	8.00	1.50
CLIP ART #2	artwork for Joypaint	10.00	8.00	1.50
CERTIFICATE 99	beautiful certificates	20.00	16.00	1.50
CERT 99 COMP	extra fonts/graphics/borders	10.00	8.00	1.50
BANNER 99	quick easy banners	15.00	12.00	1.50

GENIAL	PROGRAM TYPE	SUGG PRICE	MY PRICE	POSTAGE
XB BUG	XB debugger for programmers	15.00	14.00	1.50
XB BASHER	breaks down XB program	10.00	10.00	1.50
GRAM PACKER	loads programs to Gram cards	10.00	10.00	1.50
GRAPHIC EXPANDER	enlarges/rotates/reduces ART	10.00	10.00	1.50
FONT PACK 1	beautiful fonts for TI-ARTIST	10.00	10.00	1.50
FONT PACK 2	19 more beautiful fonts	10.00	10.00	1.50
PC TRANSFER	convert files IBM/TI TI/IBM	25.00	22.00	1.50
REMIND ME	calender notebook	15.00	14.00	1.50
MAC FLIX	convert/display/print Mac pix	15.00	15.00	1.50
BROWSE	quickly view/print DV-80 file	10.00	10.00	1.50
TRIAD	term/emulater with DM. editor	20.00	18.00	1.50
PICTURE TRANSFER	convert/view art for Geneve	30.00	28.00	1.50
HYPERCOPY	ultimate copier for Geneve	20.00	18.00	1.50
1ST BASE	good, easy, powerful database	50.00	45.00	2.50

ASGARD	PROGRAM TYPE	SUGG PRICE	MY PRICE	POSTAGE
E Z KEYS PLUS	macro keys for programmers	15.00	14.00	1.50
FONT WRITER II	desktop publisher much more	25.00	22.00	1.50
CALENDER MAKER	easy calenders with graphics	20.00	18.00	1.50
ARTIST BORDERS	borders for TI-ARTIST	8.00	8.00	1.50
LEGENDS 1.1	graphics adventure game	28.00	21.00	1.50
DISK DINOSAURS	animation and dino-artwork	13.00	12.00	1.50
BYOND VIDEOCHESS	adds disk save-printout-joyst	10.00	10.00	1.50
RAM-BOOT	loader/manager-Myarc ramdisk	10.00	10.00	1.50
BATCH IT	batch command language	20.00	19.00	1.50
QUICK RUN	quick starts XB programs	10.00	10.00	1.50
TYPEWRITER	direct input to printer	20.00	19.00	1.50
PR EDITOR	edits 2 files at 1 time	20.00	19.00	1.50
COLUMN ATTACK	fun, fast arcade game	10.00	10.00	1.50
PRESS	multi-column word processor	60.00	55.00	3.00

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THE DIJIT AVPC CARD

Tony McGovern

There is a most interesting new development on the TI-99/4A scene in the form of the Advanced Video Processor Card from DIJIT Systems in San Diego. This uses the same V9938 video processor that is used in the Myarc Geneve. Right now I'm typing this on a full 80 column display using an experimental version of the Funnelweb Editor designed explicitly to work with the AVPC card. The display device is a Commodore 1084S RGB monitor. I hesitate to use the term high resolution to describe this device as it has CRT color dot pitch barely adequate for the AVPC or the Amiga either, but I was able go out to the nearest K-Mart and buy one, so Will could have his Amiga back. To get better would involve a trip to Sydney, or far more money for a Multi-sync. The 1084 has the advantage that it also accepts a composite video input so you can use it as a display monitor for a VCR as well. Since the monitor is a great part of the expense in getting better video resolution, no matter which way you go, this is important. Unless you want to revert to monochrome and just do text editing with a V9938 system of any origin, a RGB monitor is essential.

So what is the AVPC card and what does it do for you. Physically it is a card for the PE box, and just plugs in like any other card. You make direct connection from a 6-pin DIN connector on the rear of the card to the RGB monitor. I made a short 6-pin DIN to DB-25 adapter cable which I then plug with the Amiga cable that comes with the monitor. This has a DB-23 but this causes no problems. The sound still comes from the console connection and you will probably need to make another cable for that also. No other connections are needed. To make the system work you have to modify the console used with the AVPC. The process is easy and well explained in the instructions that come with the card. If you have ever cleaned the GROM port connector, then you have already experienced the hard bits, and no soldering is required. The modifications have two purposes. Firstly the existing VDP is partially disabled, left ticking over for clocking the GROMs. The console also contains circuitry which prevents VDP accesses from appearing on the external bus to

the PE box. Cutting a trace here lets the card in the PE box in on the act. Do that, clean the GROM port connector while it is out, reassemble the console, hook up the PE box and monitor, and fire it all up. If your experience is like ours it will work first time. That is good engineering! In use all you will notice is the occasional flash from the screen when the AVPC corrects bad signals to the VDP chip from Basic, usually under error conditions.

The AVPC uses the same Yamaha/ASCII V9938 chip as used in the Geneve. This started out life as a development of the video chips in the 99/4a, but when TI lost interest in home computers development passed to Japan where it became the basis for MSX-II, something that hasn't appeared out here. Yamaha designed it to be compatible with the 9918 also used in MSX-I, provided programmers respect the reserved video register bits as specified in the 9918 or E/A manual. Most third party software writers have, but unfortunately TI Lubbock were major offenders. Just why isn't clear. Maybe just sloppiness, or maybe sheer bloodymindedness in TI's internal company politics. These problems were built into the infamous GROMs, which has meant that DIJIT has had to be extremely ingenious in working around the traps left by TI. The last and most insidious problem they found was conflicts with RS232 interrupts in interrupt driven terminal emulator programs. Due, it turned out, to a bug built into the TI RS232 card (and copied by Corcomp and Myarc without correction), for which the only solution is a new EPROM which DIJIT will provide for your particular make of card. Imagine the problem they faced, a occasional lockup occurring only with their own new hardware with all three independently sourced RS232 cards. Even sympathetic feelings hurt.

These problems are all handled transparently. A further class of problems comes with the bank switching of VDP RAM when the last byte of the normal VDP RAM is accessed in the new VDP modes. The TI system specs allowed for a way around this, but third party software writers have not always respected it. Funnelweb has been compatible for some time, but some other programs may need updating. Various Horizon RAMdisk ROSs are offenders but are easily fixed. I'm using my own fix on one right now and DIJIT will have their own. The card comes with a modified version of Barry Boone's fine Archiver program, and a program of Barry's that shows My-Art pictures from the Geneve. Also there are some

primitive adaptations of TI-Writer to 80 columns. In future a fully adapted 80 column version of the Funnelweb Editor will be available - the one I'm using right now or its future developments, and we have given DIJIT explicit permission to distribute this with their card. I'm already finding it hard to look at the 40 column editor again, and the AVPC machine has become our prime working computer. It already has the Myarc 512K RAMdisk installed and soon will have all the goodies, as it is working so smoothly.

The AVPC design also looks to the future. Unlike the Geneve it supports the full 192K of VRAM (in fairness this isn't so important on the Geneve which has more CPU RAM), but I can see AVPC programs coming that will not be Geneve compatible for that reason. The V9938 supports mouse and light pen and the physical interface is clearly defined. I have found this one of the more irritating features of the Geneve sales effort - the naked attempt to force users to buy Myarc's product by issuing dire warnings about possible damage, while with-holding detailed technical information. The AVPC also has built in an expansion connector, intended for a video digitiser sub-card. This I have no details on so I can't comment.

The card I have here is an evaluation model, but it is very neatly laid out with no obvious afterthoughts. I would agree with the designers when they say that the long gestation period has led to a product that is mature at release. I think it is so good that I'll buy one for the second system. Another V9938 based 80 column device has been in existence for some while, from Mechatronics in Germany. It is not clear whether it is still available, and I have never actually laid eyes on that or any other Mechatronics product. From reports I have had, and judging from a description in Micropendium some time back, it is a very much clumsier device mechanically, electrically and to the programmer. Some correspondents whose judgment I respect had looked at it and decided against it, but have snapped up the DIJIT card.

A question to be asked is how it stacks up against buying a Geneve. From my point of view it allows 80 column operation and access to the power of the V9938 in a familiar system. William came back from his Amiga for long enough to create a whole new set of V9938 interface routines, a video library reminiscent of many of the video functions on the Amiga. I would love to have the extra horsepower of a TMS-9995,

but this may well do me until the time comes to move onto something altogether new and more powerful. Will is of course a confirmed Amiga fan but I'm not fully convinced there, finding it difficult to warm to a machine for which software producers seem to think it necessary to have an exclamation mark in the name of every second software title. I just have a feeling that it would be a mistake to buy a new computer that does not have a large linear CPU address space (and that makes any MS-DOS machine out of bounds). The Geneve may be fun for the small circle of developers who have ready access to Myarc for detailed information, but I feel little inclination to work as a complete outsider on a machine with a small user base from a producer notorious for secrecy, no matter how elegant I find its CPU instruction set. There would be far more return for effort on the Amiga. The longevity of the TI-99 as a orphan system is already remarkable, and an AVPC looks a good way to keep it alive for several years more, until both it and the Geneve seem like 4-function calculators in the march of computer progress.

Our policy here is to develop software for the system we have. We always try to make the Funnelweb system as widely usable as possible and have also tried to accommodate other significant hardware we know of, when we have enough information to do so. There is no substitute for the actual hardware though. GRAM devices are one area we have never pursued, as we were left with no inclination to buy one from the best known supplier, and otherwise have just had higher priorities. The new 80 column editor is the first major development in the Funnelweb package tied to a specific piece of hardware, and is an implicit comment on just how important we think the AVPC is.
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