TRI CITIES 99er COMPUTER GROUP
JUNE 1984 NEWSLETTER

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MAY MEETING

Those of you that were unable to make it to the May meeting missed some fine demonstrations by club members. We had three simultaneous programs going at once: Mel Faught showed how the MULTI-PLAN program worked, Bernie Woehle gave a demonstration of the "Teach Yourself Extended Basic" series, and Sue Carver ran through the "Teach Yourself Basic" tape. My thanks to Don Farquhar, our new Vice President, for running the meeting while I was out of town on business.

LIBRARY ADDITIONS

Sue Carver tells us we now have several back issues of Byte Magazine (1982), including one with a particularly nice article on TI LOGO. Also, Chad Walker has given the group a tape of Basic Games. Remember, library resources may be used until the next club meeting after you check 'em out.

FUTZ WITH 'EM

I recently came across the following out of the Whole Earth Software Review, Spring 1984, and I just have to share it with you all. Many thanks to the author, Bart Eisenberg:
"...The secret to succeeding with computers is to futz with them. Push buttons, move text, insert lines, hit control characters. Try it backwards, sideways and upside down.
"The method, if you can call it that, is vaguely scientific - in that you perform some action and observe the results. But the notion of "scientific method" fails to convey the sense of play that should acompany all this meddling. The nature of computing is not solemn, even if the output sometimes is. And a playful attitude will get you further with these machines than weeks of serious endeavor..."

COMPACTOR PLUS

After Terry Castle's book Basic TIPS by Amlist (see also this club's newsletter of Feb 84 for the review), every serious programmer with a disk drive and X Basic should get the Compactor Plus program from Dynamic Data & Devices. Although expensive ($30), this disk is super for compacting large programs, deleting blocks of lines at once, selective re-sequencing of lines within a program, and analyzing all variables, arrays, user-defined functions/subroutines and line references. Required equipment for this programming aid disk includes TI-99/4 or 4A, X Basic, and 1 disk drive. A printer is recommended for the Compact function and required for the Analyze function. The 32K memory is not required, but makes the program run faster. The documentation for this program is fairly easy to understand, but could be better. One thing they forgot to mention is to take out the first two lines of a compacted program if you run 'em on Basic, as some X Basic stuff is put in. Overall rating is Excellent; it's worth the price.

Dynamic Data & Devices
P.O.Box 912
Stafford, TX 77477

FOR SALE

A complete TI-99/4A computer system (silver version) for $1750 the package. Includes computer, color monitor, printer, disk drive, 32K, and about $500 worth of software (including X Basic). Serious offers only and no "parting-out" until after August 1st. See the insert in this Newsletter for a description.

Yes folks, I'm leaving the TI fold. Not that I don't enjoy my computer, but I find myself ready to move up to something more powerful for my needs.

RELATIONAL OPERATORS

This high-falutin' term is used to describe the computer's ability to evaluate a mathematical expression to see if it's true or false. This can be a most useful tool for saving program memory and at the same time decreasing the number of lines you have to type into a program. The key to the whole process is to remember that the computer

> a. Gives a value of -1 when the expression is TRUE, and
> b. Gives a value of 0 (Zero) when the expression is FALSE.

Perhaps the easiest way to explain this is to give three examples. The first shows the use of the CALL KEY statement:

1. We all know it's most desireable to make our programs "user friendly." This includes taking into account that the wrong keys will be occasionally pressed. Say you want to give the user a choice of "1" or "2" but don't want the program to crash if she presses a "3" instead. Use a relational "or" statement to take care of this:

```
520 CALL KEY(0,K,S)
530 IF (K<49)+(K>50) THEN 520
540 IF S=0 THEN 520
```

Line 530 says, "If the value of K is less than 49 (the ASCII value for "1") OR greater than 50 (the ASCII value for "2") then go back to the CALL KEY and try again. Think it out.. Say the "3" key is pressed. (K<49) is false, so that gives a zero. (K>50) is true, however, as the value for "3" is 51. Thus 0+(-1)=-1. Remember now, the computer goes to the next line down only if the stuff after an IF is totally zero, otherwise it goes to the THEN line. Since -1 is not totally zero, the computer will hop back up to line 520 if a "3" is pressed by mistake. (You hot-shots out there may wish to see if there's any way to combine lines 530 and 540 into one line.)

2. This second example shows a way of eliminating several IF-THEN statements through the use of relational operators. Say you wanted to move a garbage truck around the screen through the use of the E,D,X,and S keys. You could write:

```
840 CALL KEY(3,K,S)
850 IF K=69 THEN 1340
860 IF K=88 THEN 1430
870 IF K=68 THEN 1520
880 IF K=83 THEN 1610
890 IF S=0 THEN 840
900 GOTO 840
```

But through the use of relational operators, lines 850 through 880 may be combined into two lines:

```
850 N=-1
860 ON N*(K=69)+N*2*(K=88)+
N*3*(K=68)+N*4*(K=83) GOTO
1340,1430,1520,1610
```

In thinking this one out, remember that a true is -1 and a false is zero.

3. A final example of relational operators is the "and" function. (And you thought this was only available in Extended Basic!) By multiplying a series of expressions together, the total will be true only if each and every individual one is true, 'cause it only takes one zero to wipe out the group. For example:

```
1210 IF (A=3)*(B<49)*(C<>80)
THEN 1290 ELSE 1300
```

Only if A=3 and B is less than 49 and C does not equal 80 will the program jump to line 1290. Any other condition will send it flying to line 1300.

DISKS AND DRIVES

The following two pages came to us from the Atlanta 99er Users Group newsletter, one of the many we exchange with around the country.

DISKS   AND   DRIVES

By T.D. Bell
The following article is reprinted from the
Central Ohio Ninety-Niners Inc. newsletter
SPIRIT OF 99 - FEBRUARY 1984

FIGURE 1

"Computerss are the pencils of the information age.   Floppy disks are the paper. You are the brains.'
Popular Mythology:
Computers are the brains of the future, rendering men's minds obsolete.
Fact: Computers are so feeble minded they can not remember anything, they must write all information down or it's gone. While they may have no minds and absolutely no memories; They can however crunch, shuffle, and collate fantastic amounts of data and write thousands of words of paper in a split second. The paper?, a precision, glass smooth disk of magnetic crystals, thinner than a human hair.
(Three mils, 3/1000), that makes it 'FLOPPY'.   Under ideal conditions these disks can remember forever.
Let's go back a little.   Well before magnetic recording tape, there was Paper tape or cards with little patterns of punched holes to save, if the computer programs were saved at all. While this was very inexpensive and great for throwing out windows during parades, it did little to promote personal computing. It was also very fallible and slow.   Then came cassette tape and very expensive 8" disks. While cassettes were faster, they were still relatively slow and there was no way to randomly access individual files.
Unless you know where the information was on the tape, you had to start at the beginning of the tape and go on until you or the computer found the file needed. The other option?, 8" disks developed by IBM, were too costly. Without the Mini Floppy technology developed by Shugart Associates, in 1976, which offered the first affordable 5 1/4" disk drive, personal computing might never have gotten into the home.
Disk Makeup: Not unlike audio casstte tape, floppy disks store information on magnetically charged iron oxide particles that coat the surface. Iron oxide is not ground up metal but clinically grown crystals, each having the ability to hold a magnetic charge. This is where the likeness ends.
The crystals that coat recording tape are aligned in the direction of the tape's travel allowing them to receive the highest degree of magnetization from the recording head. The crystals on the surface of a disk, although very similar to Type I recording tape, are in a random order due mostly to the way they are manufactured, and other various factors involved in the technology of disk recording. While the base film of a disk is about six times thicker than standard tape, the magnetic oxide coating over the base film is about three times thinner than standard tape. (Base film= 3/1000 of an inch, Magnetic oxide = 90/1000000 of an inch).
Quite simply, the reason for the thinness is less of a chance of spillover and overwrite of digital information and a better chance that old data has been completely erased when written over.
Digital information is recorded on a series of tracks (Concentric magnetic rings), not grooves, put there by the micro systems disk drive read/write head.   That's right, when you buy them they really are blank. Each system formats a floppy according to it's own initialization or formatting program.
Most disks are rated to contain 48 tracks per inch (tpi), while the actual area used is only 40 tracks, (single density), or 96 tpi formatted to contain 80 tracks, (double density). The TI system uses single sided, single density. When a disk is formatted, track and sector information is written to the disk. Each track is divided into a number of
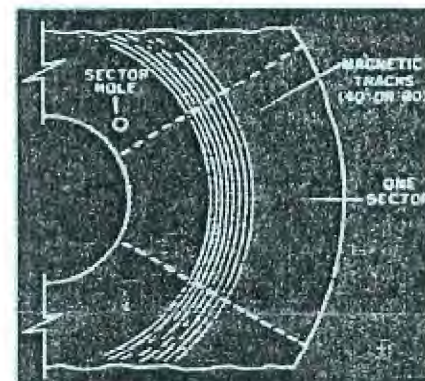
sectors, enabling it to store and locate information more easily.   TI uses 358 sectors. Another section of the disk called the Directory stores the name of the file along with the track and sector location, where they can be found and the amount of free space available on the disk. The directory uses the track and sector information to access, almost instantaneously, any file at random. The read/write head searches out the correct data by using the timing hole as a guidepost and a 'Format' (something like a ZIP code) as a destination. This is a vast improvement to serial storage used by cassettes.
The manufacturing of a floppy disk begins with a continuous sheet of plastic film called a 'WEB'; This is run through a coating machine containing a slurry of 40% magnetic oxide and 60% of binders, resins, and lubricates. The coated sheets are then dried in large high temperature ovens and calendered to compress and polish the surface. The material is then rolled into 'BUTT ROLLS', then the procedure is repeated for the other side. To stabilize the polyester base the disk then goes on a 24 hour visit to the curing ovens. Next a stamping machine cuts out the disk shape and the center hole along with any required index or sector holes. A bath in another chemical gives the disk more durability.
At the same time in another part of the factory, little stylish jackets are being made from PVC,(that has been cured for 24 hours in heat chambers), to house and protect the disks. A non-woven synthetic liner is then welded into place as a bearing surface and cleaner for the disk. It is cut to size, folded into shape, with the flaps sonically welded. Centering, Indexing, and Write-protect holes are then punched out along with the Head-access slot. The disk is then slipped inside the jacket and tested by a certifying machine. This machine fills the entire surface of the disk with data and checks for errors.
Errors found on one side of the disk make it 'Single-sided'; If errors are found on the second side, they are useless and trashed. The jacket will then go back for another disk. If no errors are found on either side they are 'expensive' (Humor-ar ar).   This machine and its tests also determines single (a disk that is usable a low packing levels but cannot meet the rigid requirements of high capacity), or double density.
The last flap of the jacket is then sonically sealed and a hub-reinforcing ring added; labeling, packaging, and shipping follow.

F L I P P I E S

Everyone has heard about "Flippies" and most people know what they are even if they don't use them. This article will explain to the rest what one is and perhaps give the incentive to make one, to those who have hesitated.

First off -What is a flippy ? It is a single sided floppy disk that has been altered so both sides can be used as a single sided initialized disk. Both sides are independent just as if each were a completely separate disk. There are reasons why people use them and reasons why some avoid using them. Some believe that if you turn a disk over and put information on the normally not used side, this will cause future problems. A disk normally rotates in a specific direction; let us say it is clockwise. A Double-sided disk on the other hand uses both sides but still rotates in just one direction. A flippy, when turned over, is now turning in the opposite direction that it normally turns. This is the crux of why some people will not construct and use flippies. They believe that disks were created to rotate in one direction and will become abrasive inside the disk sleeve, cause particles of the magnetic oxide to rub off, and destroy the disk's information if the direction of the rotation changed back and forth. You can compare it to a cat's fur that simply doesn't like being rubbed the wrong way. I personally do not know of a single case where this has happened. Problems in disks are usually traced to bad handling and not to the fact that it is a flippy. I mention all this because it will scare the faint-hearted not to try to follow the directions that come past this point. It will also get me off the hook if they do it wrong.

If you look in many leading computer magazines you will find advertisements for these devices that look just like hole punchers, for about $8.95. They are billed as a wonderful contraption that lets you 'Scientiffically' double your disk storage capacity. If you buy one, you have just wasted seven dollars. They are nothing more than hole punchers with something stuck on the side to help locate just where to make the punch. Don't blow your money on those things that you would have to wait five weeks for it to arrive anyway. Instead just follows the directions included here. Buy a regular hole puncher for about two dollars. If you are lucky, you will find one that has a plastic bottom part that will catch the holes as they are punched. If it doesn't you just have to be a little more careful.

Now look at the front of one of your floppy disks. You will see a rectangular notch about one inch down on the right side. Now look at the small hole on the same side of the jacket, but further down and closer in to the center hub circle. This smaller hole is where you will see the one soft sector hole when you rotate the disk manually. To turn a disk into a Flippy, you put the same one inch down notch and accompanying soft sector cut-out hole on the left side as a mirror image of the right side. Here is how you go about doing that. The most important part is in placing your alterations at the right place. One way to do this is to take a second disk (not the one you are altering) and after you have rotated it so you can see through the soft-sector hole, lay it backwards on top of the one you are going to alter. This will give the right place to mark the notch along the left edge as well as showing where to punch out the accompanying soft-sector hole. Remember also that the disk to be altered must have the soft-sector hole punched out on the other side too. Just to play it safe let me say that under no circumstances does the magnetic oxide disk get cut; only the sleeve which houses it.
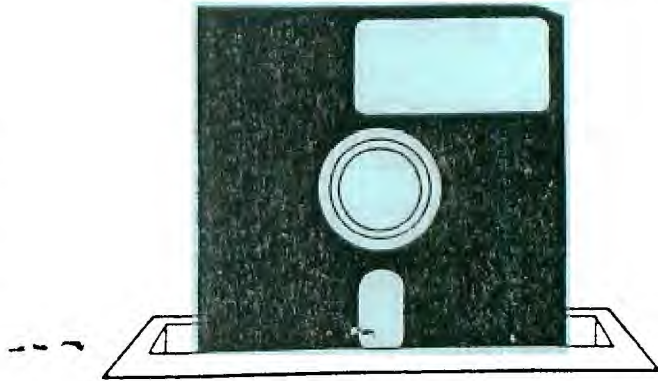
There are only two things left to point out that could cause you trouble if you aren't aware to watch out for them. Never should the oxide disk actually touch your hole puncher. You could easily scratch the oxide coating. A simple way to ensure this is to lift the envelope away from the disk proper and insert an appropiate width of paper in at the hub area so the puncher will only come in contact with paper instead of the oxide. The other thing to be careful of is when you punch the holes near the hub make sure the cut piece doesn't get loose and fall into the inside of the envelope. That too would cause scratches to the oxide and ruin your disk. That is why I said it would be good if your hole puncher is one that catches the holes that it cuts.

If you only have single sided disk drives then making your own Flippies is a very good economical way to get more room to store programs without buying another box of disks. As a way to convince people that doing this is NOT harmful, I would like to point out that some of the software that TI has lately put out comes on 'Flippy' type disks. Here is one last note to consider if you are the type to want backup disks of your valuable programs but you can't afford to buy an extra disk for every one. Say you have two single-sided disks of programs; call one AAA and the other BBB; make each into a flippy and put AAA's programs on the back of BBB, and vice versa. This way if one disk gets ruined, spilled on, stepped on, or whatever, you are still left with a complete copy of everything.

One final note about using a common round hole punch. Just glancing at your disk will let you know whether you are inserting Side 1 (the rectangular notch) or are using the flip Side 2 (the rounded notch). So now...go, be fruitful and multiply (your disk capacity).

Gary Matthews

TEXAS INSTRUMENTS

March 28, 1984

Dear 99/4A Owners:

I would like to take this opportunity to thank each of you
for your loyal support of our products, and also to pass on
information concerning a change in the services we have been
offering to our customers.

Effective April 2, 1984, Texas Instruments will no longer
sell products for the TI-99/4A Home Computer   As you may
recall, when we announced our withdrawal from the home
computer market we said we were committed to providing
product sales support until such time as another means of
support could be identified.

Arrangements have now been concluded to provide availability
for all existing software through an organization separate
from Texas Instruments. The Triton company is a
well-established direct-response/mail order firm, and we are
confident that they are capable of providing this continued
support. They may be contacted at:

> Triton
> P.O. Box 8123
> San Francisco, CA 94128

You may also call them toll-free at 800/227-6900 in the
continental United States or at 800/632-4777 in California.

Although availability may be limited in certain areas, you
should also check with local Texas Instruments retailers if
you wish to purchase additional software titles. Many
titles may still be obtained through these retailers.

At this time Texas Instruments peripherals and accessories
are no longer in production and quantities are very limited.
To further assist you we can now provide a listing of many
third-party peripheral suppliers.

Please keep in mind that while the enclosed list is not
comprehensive and while we cannot assume responsibility for
the quality or compatibility of any of these products, we do
feel that it is a means for additional enhancement for your
basic system.

We do appreciate the understanding and patience you have
shown in the past months. It has been a most difficult time
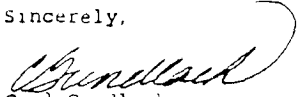for all of us, and we want you to know that we are still
very much committed to providing continued support of the
99/4A product line, including in- and out-of-warranty repair
capability, applications information and technical programming
assistance.

Although we no longer formally coordinate TI Users Groups,
we do assist new groups and maintain and make available an
up-to-date group listing. In addition, we are interested in
receiving newsletters and information on your current activities,
as your participation makes our work that much easier.

I would like to again emphasize our appreciation of your
support and interest in Texas Instruments. We are justifiably
proud of our commitment to excellence in both our products
and customer service. I hope that we continue to warrant
your support, as we will make every effort to work with your
group in the coming years.

If you have further questions or comments or should you
require assistance, please contact us at the letterhead
address.

Sincerely,

Carl Gundlach
Manager, Consumer Services

MANUFACTURERS OF THE FOLLOWING ITEMS HAVE REPRESENTED THAT
THEIR PRODUCTS ARE COMPATIBLE WITH THE TI-99/4A. HOWEVER,
TEXAS INSTRUMENTS ASSUMES NO RESPONSIBILITY FOR THE QUALITY
OR COMPATIBILITY OF ANY OF THESE PRODUCTS.

FLOPPY DISK DRIVES (Stand-alone:)
    Percom Data Cor., 11220 Pagemill Road, Dallas, TX
    75243 Phone Number: 214/340-5800

(Utilizing TI Disk Controller:)

    Software Support, Inc., One Edgell Road, Farmingham,
    MA 01701 Phone Number: 617/872-9090

    International 99/4 Users-Group, Inc., P.O. Box 67,
    Bethany, OK 73008 Phone Number: 405/948-1023

    Western Micro Systems, 2760 S. Havana, Suite S,
    Aurora, CO 80014 Phone Number: 303/337-5909

WINCHESTER DISK SYSTEMS

    Myarc, Inc., P.O. Box 140, Basking Ridge, NJ 07920

STAND-ALONE RAM EXPANSIONS

   Ultracomp Systems, 1001 Ogden Avenue #5, Downers Grove,
   IL 60515
   Doryt Systems, Inc., 14 Glen Street, Glen Cove, NY
   11542
   Tachyon Systems, 5125 S. Westwind Way, Kearns, UT
   84118
   Intellitec Computer Systems, 2337 Bonanza Court,
   Riverton, UT 84065

RAM EXPANSION CARDS FOR PERIPHERAL BOX

   Intellitec Computer Systems, 2337 Bonanza Court,
   Riverton, UT 84065
   Foundation, 74 Claire Way, Tiburon, CA 94920

JOYSTICKS

   Newport Controls, Bishop, CA 93514
   Nebulous Enterprises, P.O. Box 99, Swartz Creek,
   MI 48473
   Jackson Design, 12520 Ridgeton Dr., Lakeside, CA 92040
   Wico Corp., Consumer Div., 6400 W. Gross Point Road
   Niles, IL 60648

   Several of the vendors in the "CABLES, SUPPLIES, &
   MISCELLANEOUS" section below after adaptors which
   can allow any Atari-compa ible joystick to be used
   with the TI-99/4A.

STAND-ALONE RS-232 INTERFACES

   Ultracomp Systems, 1001 Ogden Avenue #5, Downers Grove,
   IL 60515
   Intellitec Computer Systems, 2337 Bonanza Court,
   Riverton, UT 84065
   Model Masters, Inc., 22411 Mountain Laurel Way,
   Diamond Bar, CA 91765

RS-232 INTERFACE CARD FOR PERIPHERAL BOX

   Information Associates, P.O. Box 2207, Acworth, GA
   30101

STAND-ALONE PARALLEL (CENTRONICS-COMPATIBLE PRINTER) INTERFACES

   Intellitec Computer Systems, 2337 Bonanza Court,
   Riverton, UT 84065

PRINTERS

   There are numerous companies advertising printers which
   can be used specifically with the TI-99/4A, but in
   reality, almost any printer which can be interfaced
   via the RS-232 serial or Centronics parallel methods
   can be used by means of the appropriate cable
   obtainable from one or more of the vendors in the
   "CABLES, SUPPLIES, & MISCELLANEOUS" section below.

MONITORS

   Vid-Com, 1018 E. Philadelphia St., York, PA 17403

   Any video display which can accept NTSC composite video
   or VHF channel 3 or 4 RF can be used.

COOLING FAN

   Reality Software, 4615 Kensington Dr., San Diego, CA
   92116

CABLES, SUPPLIES, & MISCELLANEOUS

   Vid-Com, 1018 E. Philadelphia St., York, PA 17403
   Tex-Comp, P.O. Box 33084, Granada Hills, CA 91344
   Danien Enterprises, Inc., P.O. Box 522036, Miami, FL
   33152
   Software Support, Inc., One Edgell Road, Framingham, MA
   01701
   99'er-Ware, P.O. Box 5537, Eugene, OR 97405
   Towertronics Inc., P.O. Box 18870, Fort Worth, TX
   76118
   Tenex Computer Marketing Systems, Box 6578, South Bend,
   IN 46660
   Denali Data Design, 1413 N. McKinley Ave., Oklahoma
   City, OK 73106
   Compro Systems, P.O. Box 33173, Cleveland, OH 44133
   Cintronics, 431 Ohio Pike #206C, Cincinnati, OH 45230
   Western Micro Systems, 2760 S. Havana, Suite 5, Aurora,
   CO 80014
   International 99/4 Users-Group, Inc., P.O. Box 67,
   Bethany, OK 73008

MODEMS

   Anchor Automation, 6913 Valjean AVe., Van Nuys, CA
   91406

   Any modem which can be interfaced via the RS-232 serial
   or Centronics parallel methods can be used by means of
   the appropriate cable obtainable from one of more of
   the vendors in the "CABLES, SUPPLIES, & MISCELLANEOUS"
   section below.

BAR CODE READER

   Databar Corp., Eden Prairie, MN 55344

LIGHT GUN

   Non-Polyoptics, 13721 Lynn Street #15, Woodbridge, VA
   22191

KEYPAD

   Computech Distributing, 209 E. Walnut, Springfield, MO
   65805

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TIGERCUB SOFTWARE
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156 COLLINGWOOD AVE.
COLUMBUS, OHIO 43213
(614) 235-3545
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130 DIFFERENT PROGRAMS ON CASETTE OR DISK, ONLY $3.00 EACH!! GAMES, EDUCATIONAL, PROGRAMMER'S AIDS, ETC., ETC. NOT PUBLIC DOMAIN, NOT TRANSLATIONS, NOT PIRATED, NOT THE BRIEF ROUTINES OR JUNK YOU MAY HAVE RECEIVED ON SOME BARGAIN OFFERS - THESE ARE ABSOLUTELY ORIGINAL PROGRAMS OF GOOD QUALITY UTILIZING THE FULL GRAPHICS, COLOR AND SOUND CAPABILITIES OF THE TI-99/4A.

CATALOG $1.00, REFUNDED ON YOUR FIRST ORDER.

THESE TIPS ARE CIRCULATED TO NON-PROFIT USER'S GROUPS FOR PROMOTIONAL PURPOSES, AND MAY BE REPRINTED WITH CREDIT TO TIGERCUB SOFTWARE.

NO, I'M SORRY, THE TIPS ARE NOT AVAILABLE BY SUBSCRIPTION. I COULDN'T JUSTIFY CHARGING ENOUGH TO BREAK EVEN, AND I'M ALREADY LOSING ENOUGH MONEY TRYING TO SELL SOFTWARE! MAYBE I'LL PUT THEM ALL IN A BOOK ONE OF THESE DAYS.

A WORD OF ADVICE TO AMATEUR PROGRAMMERS WHO ARE DREAMING OF SELLING THEIR PROGRAMS - FORGET IT! I HAVE SPENT OVER 3000 HOURS IN THE LAST TWO YEARS WRITING AND TRYING TO SELL PROGRAMS, AND I HAVEN'T CLEARED A DOLLAR AN HOUR FOR MY EFFORTS! FOLKS JUST AREN'T BUYING!

LAST MONTH'S CHALLENGE WAS TO WRITE A PROGRAM IN TWO LINES OF BASIC, OR ONE LINE OF EXTENDED BASIC, TO COMPOSE AND PLAY RANDOM MUSIC IN 2-PART HARMONY IN THE KEY OF C. I DIDN'T HEAR FROM ANYONE ELSE, SO HERE'S MY SOLUTION -

```
100 REM - TIGERCUB 1-LINE MU
SIC COMPOSER
110 CALL SOUND(-999,VAL(SEG$
("26226229433034939244049452
3587659698784",INT(12*RND+1)
*3-2,3)),0,VAL(SEG$("1311751
96",INT(3*RND+1)*3-2,3)),5)
120 GOTO 100
```

HERE'S A TIP FOR THOSE WHO HAVE MY TIGERCUB KEYBOARD ORGAN PROGRAM - TRY HOLDING DOWN THE SPACE BAR WHILE YOU PLAY ON THE KEYS. IN MOST OF THE VOICES, THE KEY RESPONSE WILL BE SO GREATLY IMPROVED THAT YOU CAN REALLY MAKE MUSIC!

AND ANOTHER CHALLENGE - CAN YOU WRITE A ONE-LINE PROGRAM IN EXTENDED BASIC WHICH WILL TAKE ONLY 70 SECONDS TO SCRAMBLE THE NUMBERS FROM 1 TO 255 INTO A COMPLETELY RANDOM SEQUENCE WITHOUT DUPLICATION?

WHO NEEDS LINE NUMBERS, ANYWAY? TRY KEYING THIS IN - (IN EXTENDED BASIC)
```
DIM S(36):: F=262 :: FOR N=1
TO 36 :: S(N)=F*1.059463094
^N :: NEXT N    (ENTER)
FOR J=1 TO 10000 :: CALL SOU
ND(-99,S(INT(35*RND+1)),0)::
NEXT J  (ENTER)
```

HERE'S ANOTHER ONE - KEY THIS IN TO YOUR FRIEND'S COMPUTER WHILE HE IS GETTING YOU A BEER -
```
M$="00182430425A667E"   (ENTER)
FOR C=128 TO 143 :: FOR L=1
TO 6 :: C$=C$&SEG$(M$,INT(8*
RND+1)*2-1,2):: NEXT L :: CA
LL CHAR(C,"00"&C$):: C$="" :
: NEXT C :: CALL CLEAR
```
NOW, WHEN HE GETS BACK WITH THE BEER, REST YOUR LEFT PINKIE ON THE CTRL KEY WHILE YOU TYPE IN ANY OF THE LETTERS A THROUGH O, AND SHOW HIM THAT HIS COMPUTER HAS A BUILT-IN MONGOLIAN ALPHABET!

ONE MORE -
```
FOR CH=65 TO 79 :: CALL CHAR
PAT(CH,CH$):: FOR J=1 TO 16
STEP 2 :: X$=SEG$(CH$,J,2)&X
$ :: NEXT J :: CALL CHAR(CH+
64,X$):: X$="" :: NEXT CH  (ENTER)
CALL CLEAR  (ENTER)
```
AGAIN, HOLD DOWN THE CTRL KEY WHILE YOU TYPE LETTERS BETWEEN A AND O. YOU CAN ALSO CHANGE THAT TO READ FOR CH=33 TO 90 AND CALL CHAR(CH,X$) , OMIT THE CALL CLEAR, AND WATCH THE FUN ON THE SCREEN.

IF YOU ARE PROGRAMMING FOR SPEED, DON'T USE DEF! PUT A STOPWATCH ON THIS ROUTINE AND SEE WHY -
```
100 DIM N(100)           160 FOR J=1 TO 100
110 FOR J=1 TO 100       170 N(J)=RD
120 N(J)=RND*10          180 NEXT J
130 NEXT J
140 INPUT DUMMY$
150 DEF RD=RND*10
```

HERE'S A ONE-LINE GOSUB FOR YOUR BUSINESS PROGRAMS, TO GIVE YOU THE NUMBER OF DAYS (D) IN ANY MONTH (M) OF THE YEAR (Y) INCLUDING THE EXTRA DAY IN FEBRUARY OF LEAP YEAR -

```
100 D=VAL(SEG$("312831303130
313130313031",M*2-1,2))+(ABS
(M=2)*ABS(Y/4=INT(Y/4)))
```

IF YOU ACCIDENTALLY HIT A LETTER KEY IN RESPONSE TO AN INPUT N REQUEST FOR A NUMERIC VARIABLE VALUE, YOU GET A NASTY BURP AND A SEVERE REPRIMAND - WARNING INPUT ERROR IN ......

THIS IS ANNOYING TO A USER, DISCONCERTING TO A NON-USER, AND EVEN FRIGHTENING TO A CHILD.

IF YOU PROGRAM INPUT N$, THE COMPUTER WILL ACCEPT ANYTHING AS THE VALUE OF A STRING VARIABLE, AND THE VAL FUNCTION WILL CHANGE A STRING OF NUMERIC DIGITS TO A NUMERIC VALUE - BUT IF THE STRING CONTAINS ANYTHING NON-NUMERIC, THE PROGRAM WILL CRASH - WHICH IS EVEN MORE ANNOYING, DISCONCERTING, AND/OR FRIGHTENING! THE SOLUTION? THE TIGERCUB PRESENTS -

```
100 REM - THE TIGERCUB POLIT
E COMPUTER!
110 INPUT "TYPE A NUMBER, PL
EASE ":N$
120 FOR J=1 TO LEN(N$)
130 IF POS("1234567890",SEG$
(N$,J,1),1)<>0 THEN 160
140 PRINT "THAT IS NOT A NUM
BER"
150 GOTO 110
160 NEXT J
170 N=VAL(N$)
```

IF YOU WANT TO ACCEPT DECIMALS AND NEGATIVE NUMBERS, CHANGE THE STRING IN LINE 130 TO "1234567890.-"

DO YOU LIKE TO WORK THOSE LETTER-SUBSTITUTION PUZZLES IN THE NEWSPAPERS AND PUZZLE BOOKS? WHY NOT LET YOUR COMPUTER MAKE THEM FOR YOU? JUST GET ANYONE TO TYPE IN A MESSAGE TO BE ENCODED.

```
100 REM - TIGERCUB CRYPTOCOD
ER BY JIM PETERSON
110 CALL CLEAR
120 T$="THIS PROGRAM WILL CR
EATE A CRYPTOGRAM BY SUBSTI
TUTING ONE LETTER FOR ANOTH
ER."
130 GOSUB 450
140 DIM A$(26,2)
150 M$="ABCDEFGHIJKLMNOPQRST
UVWXYZ"
160 FOR T=26 TO 1 STEP -1
170 A$(T,1)=CHR$(T+64)
180 RANDOMIZE
190 X=INT(T*RND+1)
200 A$(T,2)=SEG$(M$,X,1)
210 IF A$(1,2)="A" THEN 150
220 IF A$(T,2)=A$(T,1)THEN 1
90
230 M$=SEG$(M$,1,X-1)&SEG$(M
$,X+1,LEN(M$))
240 NEXT T
250 FOR J=1 TO LEN(T$)
260 D=ASC(SEG$(T$,J,1))-64
270 IF (D<1)+(D>26)THEN 300
280 C$=C$&A$(D,2)
290 GOTO 310
300 C$=C$&SEG$(T$,J,1)
310 NEXT J
320 T$=C$
330 C$=NUL$
340 GOSUB 450
350 IF FL=0 THEN 370
360 GOTO 360
370 FL=1
380 FOR D=1 TO 500
390 NEXT D
400 CALL CLEAR
410 PRINT "TYPE YOUR MESSAGE
OF NOT":"MORE THAN 4 LINES.
USE EXTRA":"SPACES TO AVOID
BREAKING A":"WORD AT THE EN
D OF A LINE.":" THEN ENTER"
420 INPUT " (28 BLANK SPACES)
":T$
430 CALL CLEAR
440 GOTO 150
450 R=5
460 C=3
470 FOR J=1 TO LEN(T$)
480 CALL HCHAR(R,C,ASC(SEG$(
T$,J,1)))
490 C=C+1
500 IF C<31 THEN 530
510 C=3
520 R=R+1
530 NEXT J
540 RETURN
```

ALMOST OUT OF MEMORY, SO

HAPPY HACKIN'

JIM PETERSON

99ER RECORDS AS OF 6/3/84

1	RUSSELL L.	ARCHIBALD	2101 N STEPTOE #4C	KENNEWICK	WA 99336	627-4845	A008	
2	DENNIS R.	ARTER	1117 WEST PARK HILL DR	KENNEWICK	WA 99337	586-3423	A001	PRESIDENT
3	WILBUR	ASH	P.O.BOX 486	GRANDVIEW	WA 98930	882-1944	A034	
4	SUE	CARVER	926 MC PHERSON	RICHLAND	WA 99352	943-5478	A005	LIBRARIAN
5	GARY/MARLENE	CLEVELAND	8500 W DESCHUTES	KENNEWICK	WA 99336	735-7211	A032	PUBLICITY
6	GORDEN/CHRIS	COWAN	92 VAN GIESEN	RICHLAND	WA 99352	946-4856	A013	
7	JAMES & KAY	DIVINE	1523 HAINS	RICHLAND	WA 99352	946-9761	A036	
8	JAY	DUCE	1920 EVEREST AVENUE	RICHLAND	WA 99352	946-5420	A031	
9	DUANE & TRINA	DUSTIN	20 NUCLEAR LANE	RICHLAND	WA 99352	375-6272	A004	MEETING ROOM
10	DONALD	FARQUHAR	P.O. BOX 429	RICHLAND	WA 99352	967-9798	A029	V PRESIDENT
11	MEL	FAUGHT	2011 WEST FALLS AVENUE	KENNEWICK	WA 99336	783-6220	A018	
12	M.V.	FOOTE	57 NUCLEAR LANE	RICHLAND	WA 99352	375-0503	A020	
13	DAVID	HANSON	2326 S. KENT	KENNEWICK	WA 99337		A026	
14	CLINARD V.	HILL	919 S HUNTINGTON PLACE	KENNEWICK	WA 99336	735-2070	A027	
15	BILL	JACKSON	411 ROSSELL AVENUE	RICHLAND	WA 99352	946-1020	A021	
16	TROY	KLINGELE	808 N SYCAMORE	PASCO	WA 99301	545-8193	A025	
17	"J.R."	MC KENZIE	1611 THAYER	RICHLAND	WA 99352	943-0066	A014	
18	GARY	MEERDINK	700 BRUCE LEE COURT	KENNEWICK	WA 99336	627-5301	A033	
19	LYNN	MILICIA	1419 DUPORTAIL	RICHLAND	WA 99352	946-4270	A017	
20	MARC	NORMAN	2405 OLYMPIA	RICHLAND	WA 99352	946-5030	A035	
21	LYNN	ORR	1820 MC PHERSON	RICHLAND	WA 99352	946-5362	A038	
22	MIKE	PATTERSON	2500 SE HARRIS	RICHLAND	WA 99352	627-2016	A022	
23	CANDY	PEARSON	71 GALAXY LANE	RICHLAND	WA 99352	375-1243	A015	
24	LARRY & SALLY	POWERS	938 SANFORD AVENUE	RICHLAND	WA 99352	946-7149	A037	
25	PAUL & KARLA	RANDLEMAN	902 S HUNTINGTON PLACE	KENNEWICK	WA 99336	735-3131	A002	TREASURER
26	R.K.	SPEER	1903 WRIGHT AVENUE	RICHLAND	WA 99352	946-5744	A019	
27	JERRY/GLORIA	STARR	303 GEO.WASHINGTON WAY	RICHLAND	WA 99352	946-1812	A030	
28	KEVIN	TATUM	4801 W 14TH	KENNEWICK	WA 99337	783-5865	A028	
29	TERRY	TERRASS	2022 WEISKOPF	RICHLAND	WA 99352	627-2734	A023	
30	EUGENE J.	WALTER	1958 THAYER	RICHLAND	WA 99352	946-8004	A016	REFRESHMENTS
31	BERNIE/JOANNE	WOEHLE	1511 TORTHAY PLACE	RICHLAND	WA 99352	943-6420	A003	
32	DAVID	WOOTAN	2105 STEPTOE #96	KENNEWICK	WA 99336	627-5445	A012	
33	BILL	YOUSEY	132 THILL AVENUE	SUNNYSIDE	WA 98944	837-3494	A024	
34	HOOSIERS	USERS GROUP	P.O. BOX 2222	INDIANOPOLIS	IN 46234		C001	
35	ATLANTA 99/4A	USERS GROUP	P.O. BOX 19841	ATLANTA	GA 30325		C002	
36	KENTUCKIANA 99	COMPUTER SOC	9801 TIVERTON	LOUISVILLE	KY 40222		C003	
37	KENT & JODY	DEWITT	533 TENTH STREET	CLARKSTON	WA 99403		C004	
38	ARIZONA 99	USERS GROUP	4328 E. LA PUENTE AVENUE	PHOENIX	AZ 85044		C005	
39	CENTRAL JERSEY	COMPUTER CLB	183 BINNACLE ROAD	BRICK	NJ 08723		C006	
40	BREVARD	USERS GROUP	P.O. BOX 1402	PALM BAY	FL 32906		C007	
41	COMPUTER	SHOPPER	P.O. BOX F	TITUSVILLE	FL 32780		C008	
42	HOME COMPUTER	MAGAZINE	1500 VALLEY DR SUITE 250	EUGENE	OR 97401		C009	
43	QUALITY 99	SOFTWARE	1884 COLUMBIA ROAD, #500	WASHINGTON	DC 20009		C010	
44	HOME COMPUTER	COMPENDIUM	P.O.BOX 1343	ROUND ROCK	TX 78680		C011	
45	C.J.	BERGLUND	1160 C GEO WASH WAY	RICHLAND	WA 99352		TEMP	

TEXAS INSTRUMENTS TI-99/4A COMPUTER SYSTEM

Dennis R. Arter
1117 W. Park Hill Drive
Kennewick, WA 99337
(509) 586-3423

No.	DESCRIPTION		BOUGHT	COST	CURRENT PRICE	SALE PRICE
1	COMPUTER	99/4A	SEP 82	$229.80	$79.95	$75.00
2	CASSETTE CABLE	(DUAL)	SEP 82	$12.75	$14.95	$12.00
3	TAPE RECORDER	(USED) GE	DEC 83	$15.00	$20.00	$15.00
4	JOYSTICKS	PHP 1100	OCT 82	$29.75	$27.95	$20.00
5	COLOR MONITOR	AMDEK COLOR-I	APR 83	$340.00	$295.00	$275.00
6	MPI PRINTER	PRINTMATE 99	JUN 83	$379.00	$425.00	$350.00
	PRINTER STAND	home made		$5.00	$24.95	NO CHG
7	EXPANSION SYSTEM, CONSISTING OF:					
	BOX	PHP 1200	MAY 83	NO CHG	NO CHG	NO CHG
	RS-232 CARD	PHP 1220	MAY 83	$148.75	$100.00	$90.00
	32K CARD	MULTICOM 1000	DEC 83	$95.00	$130.00	$80.00
	DISK CONTRLR	PHP 1240	JUN 83	$212.50	$199.95	$180.00
	DISK DRIVE	TANDON S/S	JUL 83	$180.00	$179.00	$175.00
8	SPEECH SYNTHESIZER		NOV 82	NO CHG	$79.95	$35.00
9	EXTENDED BASIC	PHM 3026	JAN 83	$90.00	$85.00	$80.00
10	TI WRITER	PHM 3111	MAY 83	$85.00	$85.00	$80.00
11	MULTIPLAN	PHM 3113	MAY 83	$85.00	$85.00	$80.00
12	PERS REC KEEP	PHM 3013	SEP 82	$42.50	$29.95	$25.00
13	PERS REPT GEN	PHM 3044	JAN 84	$10.00	$10.95	$10.00
14	TERM EMUL II	PHM 3035	OCT 82	$42.50	$29.95	$20.00
15	PARSEC	PHM 3112	OCT 82	$34.00	$24.95	$20.00
16	MUNCHMAN	PHM 3057	APR 83	$34.00	$24.95	$20.00
17	TUNNELS/DOOM	PHM 3042	JAN 84	$18.50	$24.95	$20.00
18	SECURITIES	PHM 3012	JUL 83	$34.00	$10.95	$8.00
19	GAMES PAK III	EXTD SFTWR	NOV 83	$26.95	$26.95	$25.00
20	FROGGY	EXTD SFTWR	NOV 83	$9.95	$9.95	$8.00
21	CRAZY FUN HS	MILLERS GRAPH.	DEC 83	$17.95	$17.95	$15.00
22	COMPACTOR PLUS	DYNAM DATA	FEB 84	$29.95	$29.95	$25.00
23	DATA BASE 300	INTL USERS GP	JAN 84	$14.95	$14.95	$10.00
24	13 Disks Misc. Software (Games, Education, Utilities)					NO CHG
	TOTALS			$2222.80	$2088.10	$1753.00

The above will be sold as a **PACKAGE SYSTEM** only, for $1753.00 plus shipping. UPS will be used unless otherwise directed. If, after July 30th, no offers are received, portions may be sold separately. If you wish to be considered for partial sales, please so indicate and I will write you shortly after the end of July.

Terms -- Call for availability, then send $500 as deposit. (Personal checks are acceptable. No Visa, MC, etc.) Upon receipt of deposit, I will ship within a week. Balance due upon receipt of equipment by you. No Sales Tax will be charged.

CLUB OFFICERS

President   - Dennis Arter
V.President   - Don Farquhar
Librarian   - Sue Carver
Treasurer   - Paul Randleman
Publicity   - Gary Cleveland
Refreshments - Gene Walter
Meeting Room - Duane Dustin

The club meets every **third wednesday** of the month in the No. Richland Mobile Home Community Building, 40 Apollo Drive. The meetings start at 7 p.m. All are welcome!

NEXT MEETING

Our next meeting will be **June 20th** at the same place and time. Don Farquhar will be showing us the "Fun and Games" Pak by SAMS. We also plan to have a SURPRISE for you at the meeting! (If it gets here in time...) Afterwards, we plan to set aside about half an hour for a "program clinic," where you can bring your sick and ailing programs and we'll try to "debug" them. If this works out, it can be a regular event every meeting.

For July, Gary Meerdink will present a lesson on various computer programming languages and their uses.

Our next board meeting will be June 27th at Gary Cleveland's home.

6/8/84

Address all correspondence to:

TRI-CITIES 99er COMPUTER GROUP
      DENNIS R. ARTER
    1117 W PARK HILL DRIVE
    KENNEWICK, WA 99337

        (509) 586-3423