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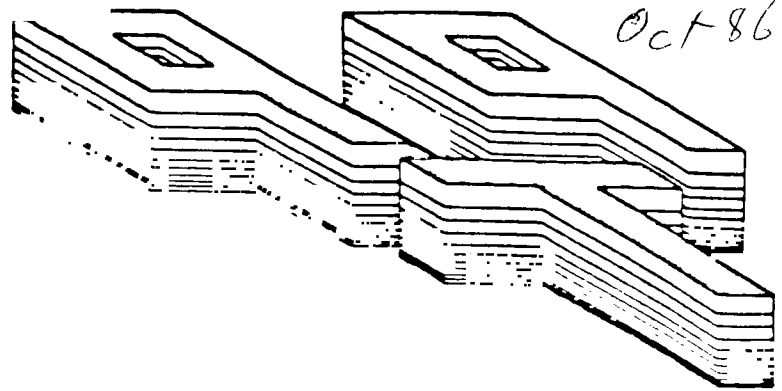
Oct 86

NEWSLETTER 9T9

Texas Instruments
USERS GROUP
TORONTO

FOR THE TI-99/4A COMPUTER
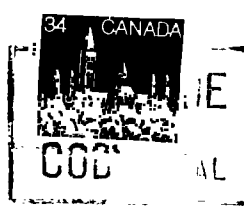
OCTOBER 1986 ISSUE

---------- IN THIS ISSUE: ---------

FROM:

   NEWSLETTER 9T9
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USERS GROUP
TORONTO

FOR THE TI-99/4A COMPUTER

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NEWSLETTER EDITOR

Steve Mickelson (657-1494)

TI-99/4A

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>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> BULLETIN <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Last month I excluded my editorial, probably to the relief of some, to make space for those by our Vice President, Secretary, Randy Rosetto and a re-print of Vast 99 Editorial on the Home Computer Journal. Because of the importance of the following news item, I will again sacrifice space to print the following item only hours before I go to the printers.

I would only like to comment in that while Lou Phillips and Craig Miller have different philosophies regarding the future of our computer community, which is to produce a TI-compatible capable of fully utilizing the powers of the 9900 microprocessor family going against IBM vs. to provide IBM capability to our current system, respectively. Both have good and bad points, however the fact that both are mutually incompatible will create a chism in the TI community, both in a hardware sense and geographically speaking, that it may dilute the few users into two exclusive groups. And I fear that, once divided, neither group will be sufficiently large enough to continue support a shrinking market. Perhaps Myarc and Miller's new venture could avoid this potentially fatal mistake.

The following are from the recent TI Convention in Seattle, Washington:

cont.----

(From Randy Ainsworth)

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The big news of the day came from Craig Miller. Before I get into that, the PROM set for the CorComp card should be available soon. The hangup is that they don't work with the CorComp RS232. That should be worked out by the time this is published. Craig had a set in his demo system and the title screen says MG DOS above the top color bar. Sometime before the end of the year, Millers Graphics will release some software that is geared toward a more general market than previous software efforts. Also, there will be an unannounced software package for the IBM out in December with an accounting package and a home budget program following in January (also for the IBM).

Here's the big news.....Craig could not be more specific and was only allowed to release certain information on this subject, but this is as much as can be told at this time. Sometime in January, a large manufacturer will announce a peripheral for the TI which will allow us to run MS-DOS software. In addition, you will be able to use any IBM card on the market as well as add an 8087 (math co-processor).

The price cannot yet be released, but Craig assured the crowd that it would be affordable. The manufacturer is gearing up for production now so that it will not be a "custom" unit like the GRAM KRACKER. It will be available shortly after the company's announcement. The processor is an 8088 and does not require a P-Box. An optional keyboard will be available. The unit will come "ready-to-use". The specific interface to the TI is still a guarded secret at this time. That means we can run Lotus, Flight Simulator, Wordstar, and any of the IBM programs out there.

While this opens up loads of possibilities, there are several concerns that need to be addressed. First, who will be stimulated to develop TI software once this unit is available? Second, once you've run Lotus, who is going to go back to TI programs? My feeling is that this is a natural progression for the TI community. The 99/4A is not going to continue on forever and Geneve will not make a very large dent (in my opinion). The ability to co-exist with the PC market not only expands the capability of our machines, but puts us in touch with the real computing world.

During the past few weeks, I have been seriously considering leaving the TI for the PC world. Prices of clones are way down and it is tempting to leave, but I have been reluctant to sell out. I like the TI and would miss it. With this development, I will probably stick around and have the best of both worlds.

Editors Note: our president, Emile Verkerk is familiar with the two I.C. chips described above,(8087 and 8088), as far as what their processing capabilities are and just what impact this has upon our TI community. As far as what other features this new TI hardware will have, read the following from Rita Glickman:
Some further comments from Miller:
* New hardware announced is already designed and will support all existing TI hardware.
* Not Geneve compatible.
* Comes with 256K, expandable to 640K,and,(eventually), up to 8 Megabytes!
* Alternate keyboard will be available, if desired.
* "In effect, (the hardware will allow) a separate machine."
* "The unit will come in such a fashion that you will not need to add anything".
* Three new pieces of software will be available shortly before Christmas.
* One new piece of software available shortly after the first of the year.
-Rita Glickman, TI5209

(Editors Note: Perhaps this un-named company is Corcomp?)

Guidelines For Submissions To Newsletter 9T9

As Newsletter Editor, I thought I'd outline some guidelines for submissions to prevent rejection of same. Preference is given to articles written in TI-Writer formatte,using the full 80-column width, just as your reading it now.

Try to take time correct any errors in grammer and spelling. Use of the Spell Check utility is helpful. As Newsletter 9T9 goes all over North America, to other clubs, we try to appear, at the least, as a semi-professional publication.

If your submission is of a technical nature, try to use precise terms, e.g. a light is what comes from the sun or some other source, while a bulb or LED is an emitter of light or e.g. a switch is a device to close or open two electrical circuits, whereas a button is something on ones coat or stomach, etc. Try to present your ideas in a clear, direct style, so as to not confuse the beginner or non-technical user. If illustrating with GRAPHX, TI ARTIST, etc. try to submit a hard copy of the document, for efficiency sake!

Submissions should reach me by the first Saturday of the month, to stand a chance of making in that particular month's issue. If you don't have TI Writer or one of its clones or don't have an expanded system, try to contact another member with an expanded system, to get it written out.

I would like to reiterate that any submission of a commercial nature, i.e. for the financial benefit of a company or business, will be considered an advertisment, see inside cover for rates. Personal want ads can be placed, i.e. want ads of a personal nature, can be submitted gratis, as outlined in the same paragraph.

Also, be brief! Submissions should be a maximum of two single spaced, typewritten pages, anything longer constitues topic overkill. So. there you have it, now fire up your systems and get going. Submissions can be made to me c/o the Newsletter's return address or to the club, personally, or via modem (416)657-1494. If mailed, include return postage, or pick up your disk at a meeting, we have no budget for postage to return diskettes.

-Steve Mickelson, Editor, Newsletter 9T9

LINDENHURST by Corey Strongin

9T9 Users Group Meetings

Meeting Dates:

Tuesday, October 28
Tuesday, November 25
Tuesday, December 9
Tuesday, January 27('87)

All meetings are held at the York Woods Public Library, 1765 Finch Ave., West. (between Jane and Keele Sts.), Downsview, Ontario in the downstairs activity room. Time 7:30 PM.

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T-SHIRTS FOR SALE
PLEASE remember that the club has invested the money to have T-SHIRTS made up
to be sold to the membership and any others interested.

   ADULT SIZES->XL, L, M, S->>$10.00 EACH CHILD SIZES->L, M, S->>$6.00 EACH

These are good 100% cotton Tiger Brand T-shirts, Made in Canada.

- NOTICE TO HORIZON RAM DISK OWNERS
There are updates available to the Ramdisk Operating System (ROS) disk as well
as some new Calls and a Memtest that runs from X-basic.

All you have to do is send your name, address, etc. and the Serial Number of
your Ramdisk Card to Horizon and ask for the updates.

For your information:
HORIZON COMPUTER LIMITED
P.O. BOX 554
WALBRIDGE, OHIO 43465

-. RAM DISK GLITCHES-
Does your Ramdisk sort of hang up on you every now and then, well mine has when
it would not respond to CALL DN(x). The system would lock up and I could not
get drive number (1) back ie. Ramdisk to DN(3).

I just reloaded the ROS (Ramdisk Operating System) and everything went back
into place, the files on the Ramdisk were still intact!! It's been OK since.

- MORE SYSTEMS AT MEETINGS-
I still believe that club interest can be improved if more people will put
forth the EXTRA effort to bring their systems to the club meetings. Some of us
have been doing this fairly regularly so that more than one system is available
for demos and such. Try it, you may like it, and you will appreciate the work
it takes to disconnect and reconnect a system in a hurry.

- CHICAGO TI FAIRE (4th ANNUAL)-
The Chicago TI Users Group will be putting on their 4th ANNUAL "TI FAIR 1986"
on Saturday, November 1, 1986 at Triton College, 2000 5th Ave., River Grove,
Illinois. General admission will be $2.00. I was there last year and there were
over 2000 attendees. The Fair runs from 9:00 am to 6:00 pm. At the Fair will be
Guest Speakers, Vendors, Seminars and Door Prizes. I expect that the new Geneve
may be there .

-.CASSETTE LIBRARY CO-ORDINATOR-
Please remember the club is looking for that elusive "SOMEONE" who would like
to take over the Cassette Library and put together programmes and such for the
users out there who are using TI console basic or X-basic. This may die on the
vine if no one comes through to help!!

This is not the last word you'll hear from me on this topic.

- 9T9 USERS GROUP HARDWARE LIST-

The following is a list of hardware that the users group owns:
TI-99/4A CONSOLE
CONSOLE POWER SUPPLY
RF MODULATOR
PE BOX
INTERFACE CARD
TI RS232 CARD
TI 32K MEMORY CARD
TI DISK CONTROLLER CARD
2 MATSUSHITA DS/DD DISK DRIVES
NYON ELECTRONICS COLOR TV/MONITOR,
MODEL CT-347FE, SERIAL #51000336
60 CASSETTE CARRYING CASE
50 CASSETTES WITH LIBRARY AND COPIES
100 Diskettes with assorted software
Extended Basic Module
Disk Manager II Module

- BORROW A LIBRARY DISK-

In updated library of programmes has been prepared by Andy Parkinson in light
of the wealth of new programmes that are around us and a DISK OF THE MONTH will
be at the meetings to introduce these disks to the membership.

The library disk of the month will start with one or two disks with one or two
disks added each month. They will be available to members ON-LOAN (like a text
library) for ONE MONTH to be returned in 30 days or at the next scheduled
meeting. To cover the costs of disks, labels, etc there will be a charge of
$3.00/ month for these disks. Your support is encouraged.

Also, assembled for our club library by Andy Parkinson are a number of good
public domain, freeware, and try-ware programs on diskette, available at $2.00
each. See list following... *(Next page)*

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CORRECTIONS*CORRECTIONS*CORRECTIONS*CORRECTIONS*CORRECTIONS*CORRECTIONS*

The following changes should correct errors made in the last issue, (August -
September), issue of Newsletter 9T9. The errors happened while trying to
print Extended Basic program listings, which had the ampersand, & , symbol
within the program proper. Apologies for the error, we'll try not repeat it!
Page 5: TEXT128 Program, make the following line changes:
71 OPEN #3 :: DISPLAY AT(21,1):STR$(A)&" SECTORS FREE.":"PROCEED? (Y)"
Page 5: PROGRAM HEADER PROGRAM, needs this line change:
40 PRINT #1:CHR$(INT(Ø/256))&CHR$(Ø-256*INT(Ø/256))&CHR$(131)&" "&M$
Also note that line Ø cannot be entered, so begin at line 1 of the listing.
Page 8: COMBINE Program, change the following lines to read:
160 OPEN #1:"DSK"&CO1$, DISPLAY, VARIABLE 80
170 OPEN #2:"DSK"&CO2$, DISPLAY, VARIABLE 80
180 OPEN #3:"DSK"&CR$, DISPLAY, VARIABLE 80
A footnote to the recent TId Bits! Consumers Distributing at Victoria Park and
Eglinton has closed. Some of the merchandise mentioned can be purchased at the
Consumers at Queensway and Kipling Ave.(prices may differ somewhat, though).
If you read the disclaimer section, you'd see a bit of cofusion in liability
for projects. If you read it within conext, you'd see that we cannot be held
responsible for damage to your system. Luckily we had no projects in that
issue. Thanks to "hawk-eye" Lloyd for catching that tyop.
-Editor

The following programs and list has been compiled by Andy Parkinson for our club is currently available from Gary Bowser, Library Director,(416)960-0925, a nominal fee of $2.00 for disk and handling:

9T9 TrIware and Public Domain Software

PROGRAM		SIZE	RUNS	DISK#	DISCRIPTION
4thMUSIC	Pub - 1		EA/LDR	9	Music or Graphics Demo
APECLOCK	Pub - 1		EA	32	Clock
ARTCAL86	Pub - 1		XB	22	Prints 1986 calendar Girly
AXLE	Pub - 1		EA/XB	24	Music (Beverly Hills Cop)
cBASIC	TrI $20 2		EA	14	cBasic Language Compiler
CHECKBOOK	TrI $10 1		XB	33	Cheque Book and Budget
CRAPS	? - 1		XB	26	Crap Game Requires 32K
CRFILESYS	TrI $10 2		XB	6	Database program
DIM	Pub - 1		EA	18	Disk information management
DISKU	TrI $10 1		EA	18	Disk fixer type program
DRAWPIO	Pub - 1		EA	3	Computer assisted drawing
FASTTERM	TrI $15 1		EA/XB	17	Terminal Emmulator program
FORTHDOC	Pub - 5		DV80	11,12,13	Forth Manual on disk
FRACTAL	TrI $10 1		EA	16	Fractual explorer
FRENZY	Pub - 1		XB	24	Space game very well done
FUNLWRTR	TrI $10 2		EA/XB	1	TI Writer/E/A systems disk
JETSPRITE	TrI $ 5 2		XB	20	Sprite builder program
JPGRAPHIC	Pub - 2		EA/LDR	8	Forth graphics and demo
MONA	Pub - 1		XB	23	Prints Mona-Lisa
MS-ADVEN	TrI $10 1		XB	30	Adventure game
OIL INVAS	Pub - 1		EA/LDR	10	Forth Game
OMNI LDR	TrI $10 1		EA	19	E/A program loader
POSTERS	Pub - 1		EA	23	Selection of printer art
PRBASE	TrI $10 2		EA/XB	5	A good Data Base Program
RAPID	Pub - 1		EA/XB	19	Rapid scroll for DV80 files
RLE	Pub - 2		EA	2	Display graphics (special)
SCREENDP	Pub - 1		XB	21	Screen dump to printer 32K
SONGS/EA	Pub - 1		EA	32	Selection of music
SORGAN	Pub - 1		EA	25	Makes Keyboard an organ
SUPERCAT	TrI $10 1		EA/XB	4	Disk Catalog Program
SYSTEX	TrI $ 5 1		XB	19	Encode assy to X/B programs
TI-SORT	Pub - 1		EA	19	DV80 Sort program
TI99'POLY	? - 1		XB	31	Monopoly on the computer
TIFORTH	Pub - 1		EA/LDR	7	TI FORTH Language
TIPILOT	TrI $10 2		EA/LDR	15	TI PILOT Language
TRIVIA99	TrI $10 1		XB	27	Trivia Game
WITGAME	TrI $ 5 3		XB	28,29	Game

I SEE YOU'VE MASTERED BASIC COMPUTER LANGUAGE.

Load-Interrupt Switch and Sceen-Dump Utility (Part 1 of 3)
-by Danny Michael, (CIS 7516,1225)
-TI-ARTIST Diagrams by Gil Tennant

The following is a list of parts needed as well as a construction guide on how
to build a load-interrupt switch that does a branch to FFFE when depressed, and
performs a function pointed to by this vector. The parts needed are as
follows:

```
1- Mini SPST Momentary "Push on/off switch" (RS# 275-1547).........5/$3.99
1- .1mf 5V capacitor (voltage value is not critical) (RS# 272-801)........
                                                        100 assorted/$2.99
1- 2.2K 1/4 watt resistor (RS# 271-1325).............................5/$ .59
3 feet of 24 guage PVC wire (RS# 278-755).........................35'/$3.99
Solder .03" diameter (RS# 64-8003)................................8'/$2.29
Solder Pencil recommended 15 watt (RS# 64-2051).....................$9.99
Phillips screwdriver to remove screws from console.
About 40 minutes of free time with the phone off the hook!!
```

Begin by plugging-in the solder pencil and allowing it to heat up while Remove
the screws from the bottom of the console. Keep the solder pencil away from the
area you are working in now to prevent burning your console plastic
accidentally or worse, yourself!

Remove the On-Off slide on the lower-right of your console by gently pulling on
each end of the slide at the same time, straight out, away from the console.
Remove the 7 Phillips screws on the bottom of the console, and remove the
bottom of the console casing.

Next remove the power supply board (with console laying on its face, keys down)
the power board is the square board in the lower left corner. There are also
two phillips screws holding this board in place and are vertically above
one-another on the right side of that board. Disconnect the power cable going
to the main motherboard (the large one) and set the power supply board, with
its two screws, aside for now.

Next step is to remove the keyboard. There are 4 screws in the keyboard,
holding it in place, two are on the right side and two on the left. Remove
these screws and disconnect the 15 position connector from the main
motherboard. Set the keyboard and 4 screws aside.

Now you are ready to tackle the biggie! For simplicity sake, see the drawing
below for the screw placements on all of the items.
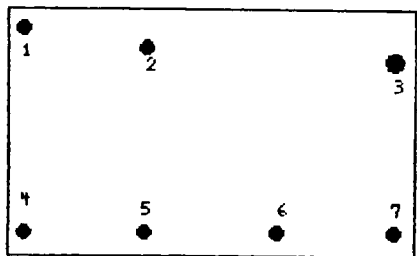
BOTTOM OF CONSOLE (7 SCREWS)
fig 1

BOTTOM VIEW
fig 2

8
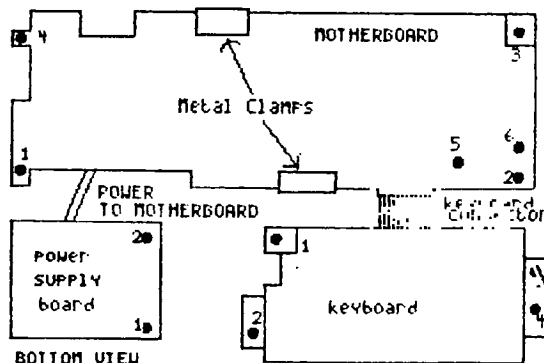
Now the fun begins! To remove the mother board from the chasis, remove the 6 screws holding it in place. There may be a screw near the upper clamp, at the top of the picture (not shown). It will be there if you have one of the earlier consoles (silver and black). This screw is not readily visable and is recessed on the motherboard through a hole in the metal casing.

Once all the screws have been removed and cables, clamps and the cartridge plug have been disconnected, you are ready to open up the motherboard casing and see what's inside.
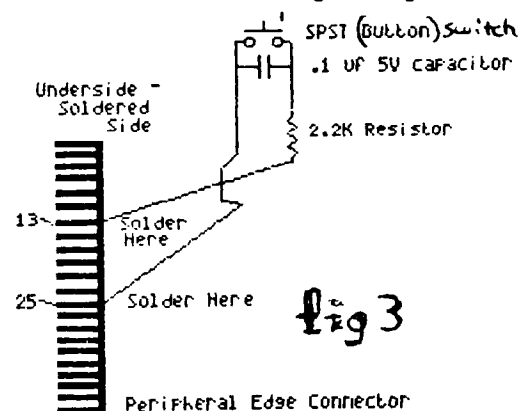
A NOTE OF CAUTION: THE MOTHERBOARD CONTAINS STATIC SENSITIVE DEVICES!! BE SURE YOU ARE GROUNDED WHILE WORKING ON THIS PROJECT. I have found that by using a wrist strap, available from Active Components (14 Carlton St.) (ACT # 86112...$16.29), You almost entirely eliminate the possibility of zapping a chip. I also put a squirt of anti-static spray on my hands and rub them together until dry.(NOTE: A static-draining wrist strap, same as available from Active, is available from Radio Shack(Cat.# 276-2399) for $2.99, also, a conductive foam mat(cat.# 276-2400), (in lieu of foil/static spray) for $1.39. -Editor)

Turn the motherboard so that the chip-side is facing up and set it on the table (may also be a good idea to work on a sheet of aluminum foil). Now, your soldering pencil should be good and hot! Rotate the motherboard so that the components are face-up and the peripheral connecter is near your right hand. This position we will refer to as the "HOME". The pins are even-numbered on the top and odd on the bottom. Beginning near you and counting away from you down the connector, locate pin 14. Near pin 14 on the motherboard, you should see a hole that has solder in it but is not connected to any lines on the top of the board. Instead, if you lift the board up and look underneath, you should see that it goes to pin number 13 (on the bottom side of number 14). This is where you will attach one of the wires that will go to the interrupt switch. Strip-off about 1/8 of an inch of covering from an 18" piece of your project wire. Heat-up the hole with your soldering pencil from the underside of the board (putting the motherboard in a clamp will hold it steady while you solder, but remember, not too tight!). Push the stripped of portion of wire through the hole, and remove the soldering pencil from the board. Try to keep the contact time of the soldering pencil to the board as low as possible, heating the solder just enough to see it melt.

Next, take a second piece of 18" wire and strip the same amount off of it as well. Turn the board back to the "HOME" position and count by twos along the top of the perpherial connector until you come to 26. Stop here and notice that beside this pin is another soldered-in hole that doesn't connect to anything on the component-side. Lift the board and you will see 3 trace-lines from that hole going to pins 21,23, and 25. Pin 25 is on the backside of pin number 26. Do the same thing that you did to the other hole and insert this second wire here so that it will connect to pin 25 on the bottom-side of the board.

Now the hard part is over! Aren't you glad? Use the following diagram as a soldering guide for the interrupt-switch:

~ Think you could do it better? Wantto help your club grow? Contact the executive and offer a hand. After all, "we're all just Volunteers"!

SPST (button) Switch
.1 uf 5V capacitor
2.2K Resistor

Underside - Soldered Side

13~ Solder Here
25~ Solder Here

fig 3

Peripheral Edge Connector

9

With the motherboard lying on its solder-side, take the other end of the wire that is attached to the hole for pin #13 and solder a 2.2K resistor to it. Take the other end of the resistor and one end of the capacitor (it doesn't matter which end, since these caps. are not polarized), and solder both of these to one side of the SPST button. You should then take the other wire (coming from pin #25) and the free-end of the capacitor and solder these to the second post of the SPST switch.

And there you have it! Now all you have to do is find a place to put it. I drilled a small hole in the top of my console (from the back side) and mounted the switch there, near the "A" in "TI-99/4A".

All that remains is to put the console back together again. (poor Humpty)

The order of assembly is:

1) Screws and clamps and cartridge connector back in motherboard.

2) Keyboard connector attached to motherboard and then keyboard fastened back in place

3) Power supply attached back to the motherboard and then power supply board screwed into place.

4) Console bottom attached to chassis (top) and slide switch pushed back in place.

Next month software to do screen-dumps, using this load-interrupt switch.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Program of the Month : ' SLINKY ' -by Gary Bowser for Extended BASIC

Select level. 0 is easiest and 9 is almost impossible, level 6 is championship. Just pressing enter will end the game. The slinky is directed to the steps by the keys T (up-left), U (up- right), B (down-left), M (down-right). The object of the game is to change the colour of most of the steps. The three white squares make slinky jump to a new place. You lose when slinky falls off the steps too many times. When one of the falling balls lands on a step, it will either change the colour, make a hole, or become a live ball which will chase slinky. Avoid the holes. You go to the next level when all the squares have been changed in colour, however each time slinky goes through the center white base you have one less square that has to change colour. "Fall" means the number of falls left before you lose. The fall counter goes up to three when you go through a safety base. "Left" shows the number of correct colour changes required before getting to the next level. "Moves" is the total number of moves used; it affects the final score. When the game ends, press 'P' to restart from the last level, press 'R' to reselect a new level. Good luck!

XB PROGRAM LISTING FOR ' SLINKY ' -by Gary Bowser

```
1 ON BREAK NEXT :: ON WARNING NEXT :: CALL CHAR(96,RPT$("0",24)&"10307CFE0103070
F070B050A"&RPT$("F",16),100,"0103C7EFF7EBC58A0080C0E0F0F0D090050A05050A3A7DFE7FB
E5CA8F0A050A")
2 CALL CHAR(104,"1010101010307CFE51A3D7EFF7EBC58A050A050A050201001010101010020408
",108,"5123170F0706050A51A2D4E8F0F0D090050A050A1522418051221408")
3 CALL CHAR(112,"003C4281C3FFBDC3FFBDC3FFBDC37E3C81423C813C81423C000422120A651B8
7",116,"6090A2A4A8D3ECF1",120,RPT$("F",16)):: DIM A(24,27)
4 CALL CHAR(128,"3C76FBFBFFFF7E3C"&RPT$("F",16)&"3C4299A1A599423C"):: FOR B=0 TO
14 :: CALL COLOR(B,16,1):: NEXT B :: CALL SCREEN(2)
5 CALL CLEAR :: A$="SLINKY BY GARY BOWSER" :: PRINT "S" :: FOR B=2 TO 23 :: PRIN
T SEG$(A$,B,1);TAB(B);SEG$(A$,B,1):: DISPLAY AT(1,1):SEG$(A$,1,B):: NEXT B :: CA
LL MAGNIFY(2)
6 FOR B=200 TO 1400 STEP 32 :: CALL SOUND(5,B,5):: NEXT B :: PRINT "LEVEL (0-9)
: ";:: C,D=0 :: ACCEPT SIZE(1)VALIDATE(DIGIT):A$ :: IF A$="" THEN CALL CLEAR ::
STOP ELSE E=VAL(A$):: GOSUB 26
```

10

cont----

```
7 IF F=Ø THEN 1Ø ELSE GOSUB 34 :: G=2*((G)=B)-(G<B))+G :: H=H+(H)=I)-(H<I):: J=2
4 :: GOSUB 36 :: IF K<>12Ø THEN 8 ELSE A(G,H)=99 :: K=99 :: L=L+1
8 IF K<97 THEN GOSUB 37
9 IF K=99 OR F=Ø THEN 15 ELSE GOSUB 38
1Ø IF RND<(1-E/2Ø OR F=1 THEN 15 ELSE H=INT(RND*21)+6 :: J=((4*INT(RND*4)+7)*-(H/
2<>INT(H/2)))-((4*INT(RND*3)+9)*(H/2=INT(H/2))):: G=1 :: GOSUB 36
11 GOSUB 37 :: IF K=129 THEN 15 ELSE IF RND<.34 THEN 13 ELSE IF K<>99 AND K<>12Ø
 THEN F=1 :: GOSUB 36 :: GOTO 15 ELSE A(G,H)=21*((K=12Ø AND E)1)-(K=99))+K :: CA
LL VCHAR(G,H,A(G,H))
12 L=L+(K=99)-(A(G,H)=99):: IF E)=3 AND K=12Ø THEN F=1 :: GOSUB 36 :: GOTO 15 EL
SE 15
13 A(G,H)=INT(4*RND)+92 :: CALL SPRITE(#1,92,16,G*8-7,H*8-7):: FOR M=16 TO 2 STE
P -1 :: CALL MAGNIFY(VAL(SEG$("4321234321234321",M,1))):: CALL SCREEN(M)
14 CALL SOUND(-1,-M/2,Ø):: NEXT M :: CALL HCHAR(G,H,A(G,H)):: L=L+(K=99):: CALL
DELSPRITE(ALL)
15 IF L=Ø THEN GOSUB 24 :: GOTO 15 ELSE CALL KEY(5,N,O):: J=(N<84)-(N)77):: P=(N
=+4 OR N=84)-(N=77 OR N=85):: A(B,I)=Q :: IF P=Ø THEN 7
16 C=C+1 :: DISPLAY AT(23,1):USING "SCORE ######:FALL #:LEFT ##MOVES ######:LE
VEL #:"&SEG$("TRIOCCSLINKY",-6*(C/2=INT(C/2))+1,6):R,S,L,C,E
17 A(B+1,I)=T :: U=B :: V=I :: W=J=-1 :: X(4)=116+(J*P=1):: X(5)=115-(J*P=1):: F
OR M=-5*W+1 TO -5*(J=1)+1 STEP J :: U=U-J*Y(M-W):: V=V+P*Z(M-W)
18 CALL VCHAR(U,V,X(M)):: NEXT M :: CALL VCHAR(U,V,114):: CALL VCHAR(U+1,V,113):
: CALL SOUND(2Ø,3ØØ,1):: CALL VCHAR(B+1,I,114):: CALL VCHAR(B+1,I,A(B+1,I))
19 FOR M=-5*W+1 TO -5*(J=1)+1 STEP J :: B=B-J*Y(M-W):: I=I+P*Z(M-W):: CALL VCHAR
(B,I,A(B,I)):: NEXT M :: GOSUB 31 :: IF T<97 OR T=128 THEN GOSUB 38 :: GOTO 23
2Ø IF T<>129 THEN 22 :: R=R+5E3 :: A(B,I)=Q :: A(B+1,I)=T :: CALL VCHAR(B,I,Q)::
 CALL VCHAR(B+1,I,T):: S=3
21 B=-18*(B<>16)-6*(B=16):: I=-18*((B=6 AND I=6)OR(B=18 AND RND).5))+7 :: L=L+(B
=18):: GOSUB 31 :: GOTO 23
22 A(B,I)=21*((T=12Ø AND E)1)-(T=99))+T :: L=L+(T=99)-(A(B,I)=99):: T=A(B,I):: R
=-1E3*(T=12Ø)+R
23 IF L=Ø THEN GOSUB 24 :: GOTO 7 ELSE 7
24 CALL SOUND(15Ø,131,6):: CALL SOUND(15Ø,165,6):: CALL SOUND(15Ø,196,6):: CALL
SOUND(3ØØ,262,1):: CALL SOUND(15Ø,22Ø,4):: CALL SOUND(75Ø,262,1)
25 R=R+5E4 :: DISPLAY AT(1,1):"YOUR SCORE IS ";R
26 E=E+1 :: RESTORE 44 :: FOR M=(15-5*E)*-(E<4)-1 TO 13 :: READ K,AA :: CALL COL
OR(-M*(M)8),K,AA):: NEXT M :: IF D THEN 42 ELSE D=1
27 CALL CLEAR :: RESTORE 45 :: FOR J=6 TO 21 :: IF J=12 OR J=16 THEN RESTORE 46
28 READ A$,B$,C$ :: A$=A$&RPT$(B$,9)&C$ :: DISPLAY AT(J,3):RPT$(A$,-(E<>4)):: FO
R P=5 TO 27 :: A(J,P)=ASC(SEG$(A$,P-4,1)):: NEXT P :: NEXT J
29 RESTORE 47 :: FOR M=1 TO 3 :: READ J,P :: A(J,P)=129 :: CALL HCHAR(J,P,129)::
 NEXT M :: X(1),X(2),X(3),X(6)=114 :: Y(2),Y(3),Y(4),Z(5),S=1 :: Y(6)=-1 :: B=6
:: I=7 :: L=7Ø
3Ø A$="" :: FOR M=1 TO 64 :: A$=A$&CHR$(INT(1Ø*RND)+48):: NEXT M :: CALL CHAR(92
,A$)
31 CALL VCHAR(B,I,112):: CALL VCHAR(B+1,I,113):: CALL SOUND(J,2E3-B*5Ø,5):: Q=A(
B,I):: T=A(B+1,I):: A(B,I)=112 :: A(B+1,I)=113 :: IF S)Ø THEN RETURN
32 DISPLAY AT(1,1):"YOUR SCORE WAS ";R:"PRESS P TO PLAY AGAIN OR R  TO RESTART"
:: FOR BA=27ØØ TO 2ØØ STEP -1Ø :: CALL SOUND(1Ø,BA,4):: NEXT BA
33 CALL KEY(5,N,O):: R=Ø :: IF N=8Ø THEN E=E-1 :: GOTO 26 ELSE IF N=82 THEN 4 EL
SE 33
34 IF K=113 THEN K=T
35 A(G,H)=K :: CALL VCHAR(G,H,A(G,H)):: RETURN
36 K=A(G,H):: A(G,H)=128 :: CALL SOUND(5,2E3-G*5Ø,5):: CALL VCHAR(G,H,A(G,H))::
RETURN
37 F=Ø :: GOSUB 34 :: G=G+1 :: IF G)J THEN G=G-1 :: RETURN ELSE GOSUB 36 :: GOTO
37
```

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```
38 A(B,I)=Q :: A(B+1,I)=T :: CALL HCHAR(B,I,Q):: CALL HCHAR(B+1,I,T):: J=B*8-7 :
: B=6 :: P=I*8-7 :: I=7 :: M=20 :: W=114 :: S=S-1
39 CALL SPRITE(#1,W,6,J,P,M,0,#2,W,7,J+8,P,M,0,#3,W,16,J+16,P,M,0):: CALL MAGNIF
Y(1)
40 CALL SOUND(-1,2E3-((J+7)/8)*50,3):: CALL POSITION(#3,J,P):: IF J<193 THEN 40
ELSE CALL MOTION(#1,-10,0,#2,-10,-10,#3,-10,10)
41 FOR M=0 TO 20 :: CALL SOUND(-5,-5,M):: NEXT M :: CALL DELSPRITE(ALL):: GOTO 3
1
42 CALL HCHAR(6,7,97):: A(6,7)=97 :: IF S>0 THEN CALL HCHAR(B,I,Q):: A(B,I)=Q
43 FOR J=7 TO 19 STEP 2 :: M=J=9 OR J=13 OR J=17 :: FOR P=7+M TO 25-M STEP 2 ::
A(J,P)=99 :: CALL HCHAR(J,P,99):: NEXT P :: NEXT J :: CALL HCHAR(1,1,0,-672*(E=4
)+96):: GOTO 29
44 DATA 13,11,13,11,2,11,6,11,16,11,7,12,7,12,2,12,16,12,13,12,12,2,12,2,16,2,13
,2,6,2
45 DATA '',a',a'','b,cd,ce'
46 DATA '+,gf,gh',bc,ic,ice,jg,+g,+gk,'l,ci,cm','j,gn,gk','',o',o''
47 DATA 9,16,17,6,17,26
```

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>TI UNCLASSIFIEDS<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

FOR SALE:

        Item #1:
Radio Shack Modem * Model DCM3 (Direct Connect/ 300 BPS Model) * Only 1 year
old, good working order. Origional price: $90.00 - Selling for only $50.00
        Item #2:
Auto answer kit, (90% assembled)¦ this adapter will convert a "dumb", manual-
type modem into an auto-answer type. Good for BBS operation and other
applications where an auto-answer modem is required - Price: $50.00, as is.
        If interested, contact Jason Keltz at 667-8241 (8pm-12:00 midnight)

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

FOR SALE:

        Technical service manuals for the TI-99/4A and Peripheral Expansion
System, includes schematics and component lay-out, 72 pages. $5.00 ea (a few
still available).
        Contact Steve, at (416)657-1494 6:00 - 10:00 Mon.-Sat.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

FOR SALE:

The following TI modules are for sale:	Price:
Plato and software	$60.00
Touch Typing Tutor	$20.00
Editor/Assembler	$50.00
TI Logo II	$100.00
TE II	$20.00
TI Writer	$60.00
Mini-Memory	$100.00

        Contact Emile, at (416)633-1451

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

FOR SALE:
        OLYMPUS OM 2n CAMERA WITH VIVITAR 28mm WIDE ANGLE LENS AND A 75-300mm
1:4 MACRO ZOOM WITH 2X TELECONVERTER. ALSO INCLUDED IN THE PACKAGE IS AN
OLYMPUS T-32 FLASH, GRIP 2 SYSTEM, POWER WINDER 2, VARIOUS OTHER ACCESSORIES AS
WELL. THESE ITEMS ARE 2-3 YEARS OLD AND HAVE BEEN USED AND KEPT IN GOOD
CONDITION BY A PROFESSIONAL PHOTOGRAPHER. I AM SELLING THESE ITEMS AS I NEED
THE CASH TO INJECT IN MY NEW COMPANY ....
        CALL GIL (HARD "G", NOT JILL)! AT 288-9412.....WILL ACCEPT FIRST
REASONABLE OFFER OVER $400.00. ITEMS NEW ARE WORTH OVER $900.00!! SERIOUS
CALLERS ONLY!

A new 80-column card, from Mechatronic, which outputs to a RGB monitor, and plugs into the side of the console was shown at the Seattle TI Faire. Selling price: a cool $200.00 U.S. Funds!
Franz Wagenbach of T.A.T.E.,(U.S. Distributor for Mechatronic), is taking preliminary orders for a cartridge-based FORTH,(no indication of TI or Wycove, I assume the former)

Jim Horne, of DOS, has taken over the marketing of the MBP clock cards and expected new software for same.

Geneves are expected to be ready from Myarc, around Christmas time, pending arrival of a new custom chip from Mitsubishi, to replace a cluster of chips currently being used. The DOS, also, has to be completed. Price: still in the $450.00 - $500.00 (U.S.) range.

Apparently the bugs have been wrung-out of Myarc's XB II. Contact your Myarc dealer for details.

Millers Graphics will soon release new PROMs for the Corcomp Disk Controller card . The PROM set will replace those labelled Bank 1 2, respectively. It will eliminate the need to spacebar twice with E/A and Plato, as well as add new set of calls to your system. Price: $34.95(U.S.) Compatibility with Corcomp's RS232 is last remaining hurdle to production.

A new utility disk for the Gram Kracker, enables the user to load into the G.K. a hybrid of Extended Basic, Editor/Assembler, the Edit and Assembler files all to be at menu level. Also the G.K. will have a number of new features and calls which will allow one to copy, list to other device, delete, trace and resequence whole blocks,(lines),of memory. Also ,on menu, will be an option to formatte the Myarc RAM-disk memory. These improvements will make the G.K. to the memory what TI Writer is to text. Contact Millers Graphics for your copy.

That's it for this issue, I have more but space limitations and time constraints have run out for this issue.

-Serially, Steve

✱✱✱

Punch
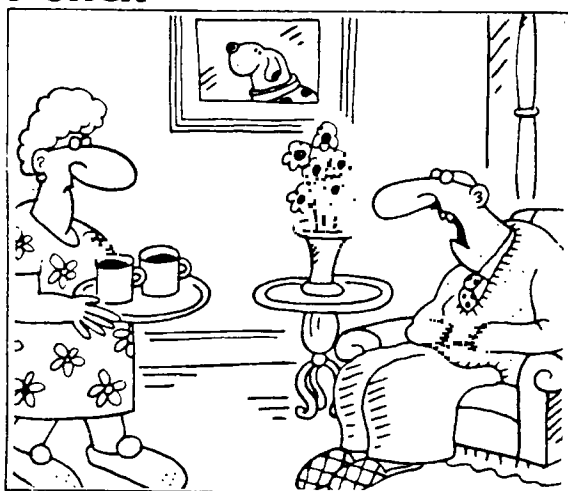
"It's no good, Mavis. I still don't feel inspired to use my home computer."

~ a reminder memberships and subscriptions will be due soon, Don't let it lapse and miss an issue of the Newsletter 9T9.

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Gram Kracker Tuitorial Part II of IV
-by Terry Atkinson

During my adventures in changing the menu following the title screen, I sat
down and took a good look at Extended Basic. My findings had me, to say the
least, a little surprised. I found that the code was mostly just stuck any old
place that there was room. This left a lot of large sections of unused memory
in-between the bits of code that make up the Extended Basic language. Well

Well like most of you, when I got my GK I loaded up the MG XBasic Calls
that came on the demo disk. Any way as I made my way through the Gram space
I finally ran accross the code that MG so generously provided us with. My
response? "Woo, Craig, whats this crap doin' way the heck out here in never
never land???" The truth was that MG code wasn't imbedded in the ExBasic
code. It wasn't even tacked onto the end. It was just kind of stuck in the
middle of the free memory following the ExBasic code. And his code had even
larger spaces of free memory between it than TIs' code. This is fine if all
you want to do with your GK is store the Big-3,(TI-Writer, E/A, and ExBasic)
Well, the way I see it, is that you would have to break the code up into small
parts and try to fit it wherever you can. Not only that, but if it was code
that needed to be moved to CPU Memory prior to being executed, your coding
to move the small sections of memory could turn out not only to be large and
wastefull but rather complex.

I'm no expert on GPL code, and what little I know about Assembly wasn't
much help. But after looking around with the editor. I decided I would try
to move some of the MG XB-Calls. Most of the TI code looked too complicated
to mess with and since the MG code is mostly "short and simple", these were
the ones to move.

The objective: To move as many of the MG XB-Calls as possible to some of
the free memory inbetween the TI code.

The exception of Call Cat (Too complicated for a novice) imbeded in the
TI ExBasic code.

And Here's how I did it.......

First of all you need to find the subprogram headers for the MG
XB-Calls. This is kind of the REF/DEF table for the modules subprograms.
They should be located at 9D7FE through 9D837.

The code in the subprogram header breaks down as follows:
1. The first 2 bytes point to the next subprogram header.
2. The length of the name of the subProgram.
3. The actual name of the subprogram.
4. The starting address of the actual routine. ("The real code"!!!)
I suggest you read page 54 of your GK reference guide for more info.

Once you have found the code, you must determine the starting and finish
addresses for the subprogram headers. That shouldn't be all that hard. If
you switch the display to Hex, you will notice that the code is surrounded
by 00s. Just locate the first nonzero byte and write down the address. Then
find the last non-zero byte, but before you write down the address, add 1 to it.

Believe it or not, this is the hardest of the moves to do. Mainly
because it requires the most code changes. So if you get through this one
the others are cake...

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cont...

If you've been following along your GK should already be in the EDIT
mode.

Enter the start address of the subprogram headers as the start address
(ie. D7FE) and the finish address of the subprogram headers as the finish
address for the move!(ie. D837). Now you need to find an unused section of
memory to put your headers. I found a sufficient sized block at gram address
BD98. I suggest you check this area before you move the header to make sure
it is free. You wouldn't want to write over any important code, would you??
If the area is clear, enter gBD98 as the Dest. address then press FCTN 2.
(Ahhh, did you forget to turn off the write protect switch??? If so. Nothing
was moved!!! Better try again. But this time put the W/P switch to either
Bank 1 or Bank 2 position.)

After you have successfully moved the headers, you will want to use the
FILL option to clear the old section of memory where the headers were. With
W/P off, and making sure that you are using ØØ to Fill, press FCTN 3. This
will clear the old memory position.
Note Make sure Start Finish addresses are the same as used for the Move.

After you have moved the headers, write down the address of their new
location. This is the address at the top of your screen under (Dest). It
should be gBD98. You must now add 2 to this address. (We're still adding in
Hex.) This will be the Starting address of your subprogram headers. The
result should be BD9A. Write this number down.

ExBasic Subprogram header that is linked to the MG headers. I'll give
you a hint. It's CHARPAT!! You should be able to find it at address CØ37.
(Try switching back to ASCII, it's easier to find.) Now find the pointer for
the next subprogram header. If you remember, this is 3 bytes to the left of
the "C" in CHARPAT. Switch back to Hex display if your not already there.
The Pointer should read: D8ØØ. You need to change this to the new location
of MG subprogram headers. (Oh no!! Where did I write that address???) When
you find it, turn the W/P switch off and if you can't find where you wrote the
number down or didn't even bother, does the number BD9A sound familiar??? If
your having problems finding the pointer address try CØ34.
Now go back to the MG subprogram headers make the following changes:

| ADDRESS	old contents	new contents
BD9A-BD9B	D8 Ø8	BD A2
BDA2-BDA3	D8 1Ø	BD AA
BDAA-BDAB	D8 1A	BD B4
BDB4-BDB5	D8 25	BD BF
BDBF-BDCØ	D8 3Ø	BD CA

 Well, if you've gotten this far, I've got some good news. You have just
completed the first and hardest of the moves that we're doing.

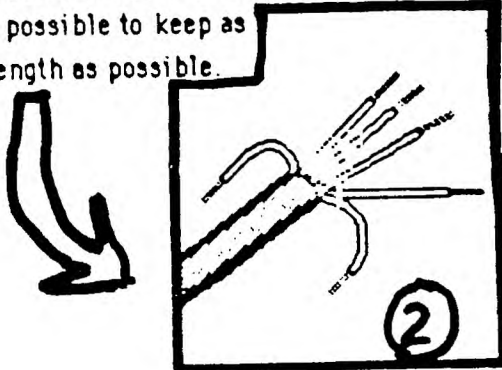I recommend that before you do anything else, you save your new module
to disk.
     Well I'm running out of time, so thats it for this session. In our next
session I'll show you how to move the actual routines for the MG XB-Calls.

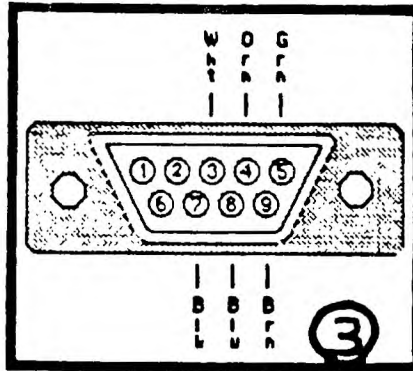***

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For those of you who don't have Wico Atari/Commodore to TI-99/4A adapter; here is a useful joystick conversion which recently appeared in R/D Computing. (Do it at your own risk! Also, where applicable, it likely to void the warranty on your joystick -Ed.):

Cut ①
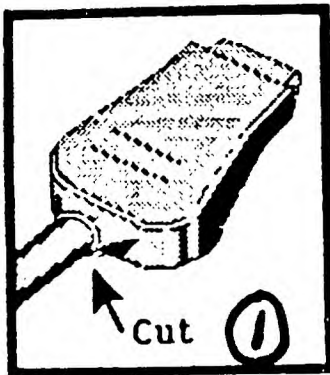
Cut the cable as close to the plug as possible to keep as much length as possible.

Atari to TI-99/4a
Joy-stick Conversion
- by Mark G. Webb

Tin the wire tips and solder in the following manner:

White to pin 3   Black to pin 7
Orange to pin 4   Blue to pin 8
Green to pin 5   Brown to pin 9

Trim back the outer insulation 3/4 to 7/8 of an inch. Then trim back the insulation on each wire 3/16 of an inch.
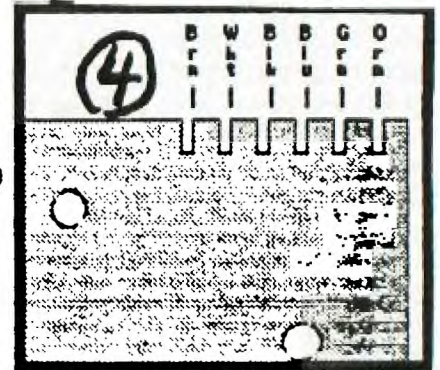
It is not necessary to open the joystick to complete the process but if you do these are the wire connections on the board inside.

Triple Tech Tip
-Gil Tennant

For those of who use the Corcomp Triple Tech(TM) card; there have been reports of exploding lithium batteries due to power from the Peripheral Expansion Box "charging" this non-chargible battery. A fix comes from Gil Tennant:

I have developed a fix for the exploding battery problem on the Triple Tech Clock Card. For those of you with the card and is, or know of someone who is electronically inclined, this is the fix to prevent battery charge during P-Box operation:

    1) Locate resistor #7 (to the lower right of the speech synthesizer slot), near the clock IC 5832
    2) With a 15W pencil-type soldering iron or desoldering tool, remove the #7 resistor,(labelled R7)
    3) Replace R7 with a 1N914 diode(Radio Shack sells them as cat.#276-1620 in packages of 50 for $2.99 -Ed.)with the anode-end towards the battery
    4) Solder in-place and do a volt meter test on the battery's contact (leads) with the battery removed and card in-place with P-Box running. Presto! No voltage at the leads!
    5) Put the battery in and set the clock; turn off the system for 10 minutes. Power-up the system and reboot the clock program. Voila! You have just prevented the battery from being charged! This fix has been confirmed by Corcomp to work with no loss of function to the card. NOTE: As usual you assume all resposibility for damage to you system in this project; it is done at your own risk!