SYDNEY NEWS

NOV'85

SHUG
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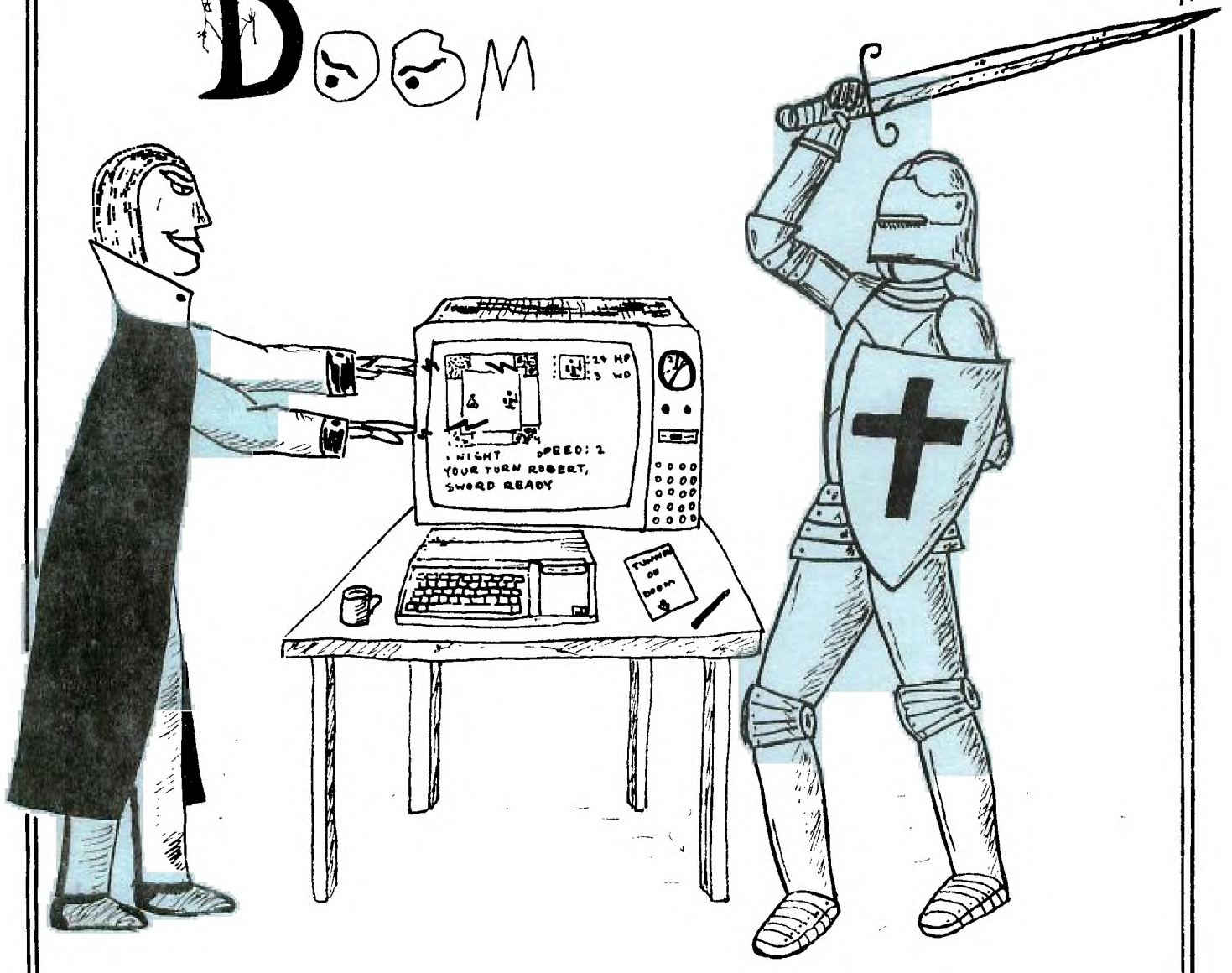
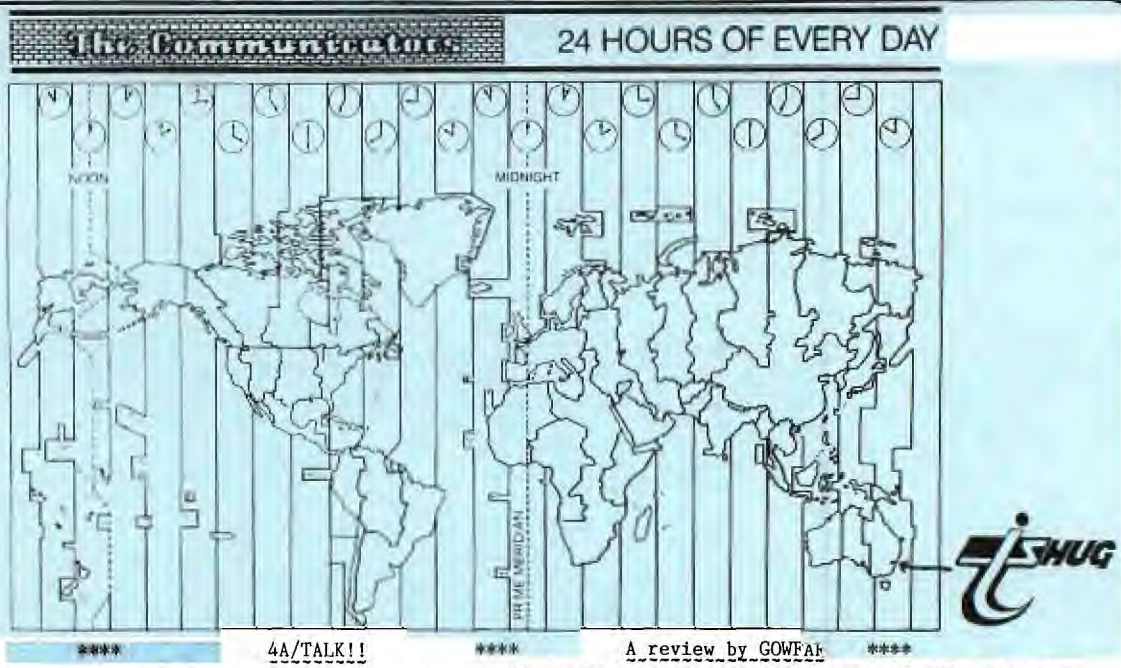
TUNNELS OF DOOM



By Robert Davy

DIGEST



**** 4A/TALK!! **** A review by GOWFAR ****

Have you ever gotten REALLY sick & tired of seeing all those other 'NO-NAME' BRANDS OF COMPUTER (ATARI/ COMMODRE ETC.) get their own private up/download menu's on other bbs's/ around Australia? Have you ever tried (and I mean REALLY TRIED) to get some sort of up/download facility/ set up for our own T.I. only to be told that because the T.I. uses a strange way of file transfer/ that it is not possible to have file transfers/ for your T.I.? Well I HAVE!!

I became truly upset at the thought of only having the TEXPACBBS really bother about T.I. Eventually/ I gave up trying to find any other facility than just a T.I. menu (currently set up on both TELEDATA and PROPHET by ME!!).

Well/ just like like the Lone Ranger/ gallops a new terminal program/ out of the U.S./ to give us the FREEDOM we have never had before!! The program/ simply called 4A/TALK/ is here to save you and your T.I. from only being able to file transfer to another T.I.

To really start the revue/ I think it is necessary to advise you all that/ at this stage I have:

1) ONE OF ONLY TWO (2) OF THE PROGRAMS IN AUSTRALIA (the other being in Queensland)!! However/ control your fears. it should be no more than two weeks before another shipment arrives to LINDLEY AND ASSOC. (Address either...P.O. Box 77, ZILLMERE, Q. 4034 (07)263 6161 or P.O. Box 595, Marrickville, NSW 2204
2) To the best of my knowledge and at the time of writing this letter/ the program is NOT available on cassette.

3)You will need at least a 32K card and one disk/ XBASIC or EDITOR/ASSEMBLER or MINI-MEMORY or COR-COMP CARD. That's right. The program WILL load through the 'load and run' option/ available on the Cor-Comp card.

So what's so good/ you might ask/ about being able to up/download to another bbs/ other than our own TEXPACBBS? For one thing/ there are quite a number of people/ out there who have written amazing utility/ games/ etc./ programs that they have not bothered to submit to the club/ for one reason or another. Now/ with this program/ you can ask/ via any bbs/ for a program that may not be available/ elsewhere/ which someone may have. They can upload it to that bbs and when the SYSOP puts it on the FILE TRANSFER MENU/ you can download it/ for yourself. Another thing that this type of file transfer can be useful for is to put your favourite program/ on a bbs/ for all and sundry to download/ so that/ should your disk CRASH/ you can get a copy back/ through the bbs or another user. There are multiple reasons for transferring files to different bbs's (and dont forget - you can RECEIVE files from those same bbs's.... files that you may have wanted but not had before) but the reason that YOU would want to do it is/ I guess/ up to yourself. Now/ with al that over/ JUST WHAT IS SO GOOD ABOUT THIS PROGRAM AS COMPARED TO TE2???????

Well/ let me start with one minor negative/ so that/ at the end of this review/ you will have all the POSITIVE'S in mind. You CANNOT receive SPEECH from the TEXPACBBS/ though you do receive the COLOUR CHANGES (not that you need the colour change as you can set and/or change your screen colours/ as you see fit). However/ the first thing I did notice about this program is it's user friendliness. It only took me about half an hour to get to know all the functions that I consider needful and not much more time to learn a good 90% of the program. Another thing which came to light/ only after I wrote this review was that I could not/ for some time/ get the TE2 FILE TRANSFER capability to work with this program. Well/ let me set you all straight on this..... WHen you first set up your MODEM DEVICE NAME on this program/ you have to change the DATA BITS to 7 (DA=7) and the PARITY to EVEN (PA=E)/ which are not standard with this profram. If you dont do this/ you will NOT be able to download any T.I. programs or files to your mates who use TE2.I want to thank/ at this stage/ user MICKEY (Michael Black) who saved me a lot of time with this problem by taking an educated guess and coming up with the right answer in one go!!!! (WHO SAID WESTIES DONT HAVE BRAINS????)

I/ originally/ wrote this review/ including all the 4A/TALK options/ however/ due to the versatility of the program/ the file was too long either to iclude on the BBS OR to put in the SND!!!! That should give you some idea of just how much you get for your money!!!!

Another thing to note is the absolute LACK of this programs' use of the disk drive. Once the program is loaded/ you can put the disk back in it's cover.... you dont need it again/ until you want to load the program again. Along with this/ when file transferring (sending or receiving)/ your 4A/TALK seems to store up to (approx.) 31 SECTORS of information in the T.I.'s memory/ before having to refer to the drives again. This ability seems/ at least to me/ to make file transfer to a BBS so much faster than TE2 that there is NO comparison.

You will find the refernce manual VERY helpful/ EXCEPT in the TE2 FILE TRANSFER area (see above) and in this one strange omission..... the book does not say/ anywhere/ that you can hit CONTROL 7 at any time and see an ON SCREEN readout of what does what with thi program. Eg./ it shows you what all the function keys mean to it plus al [illegible] keys

A very helpful feature (at least I think so) is that you can/ by hitting CONTROL 1 turn on your PRINTER BUFFER to receive and print data as it is displayed on the screen. That means NO MORE TIRESOME CONTROL S'ING/ SCROLLING BACK AND DUMPING PAGE AFTER PAGE AND DOUBLING UP ON SOME OF THE LINES!!!!!! If you dont have a printer or just dont want to use it/ at this stage/ you can CONTROL 4 nad open the CAPTURE BUFFER (your VDP RAM chip) and have the information stored there. You can/ then/ dump the data to disk/ later on (BEWARE!! The CAPTURE BUFFER is not unlimited in the data it can hold).

Want to have a WORD PROCESSOR (well... of a sort)? Then follow this procedure..... turn your printer on/ hit CONTROL 1/ hit control 3 (to turn the program to HALF DUPLEX) and start typing. Next/ watch the printer type out your message/ as you type it!!!! NOT GOOD ENOUGH TO MAKE YOU BUY IT???? how about this..... you can catalogue a disk/ on screen/ with this program and delete unneeded files or programs (NOT WRITE PROTECTED!!) to clear space for an incoming program!!!! How about this.... the program has an AUTO DIAL function (which I think is only compatible with the HAYES SMART MODEM type of modems but I am unsure of that).

Did you ever come straight out of BASIC and go into TE2 and when typing/ mae a mistake and hit the FUNCTION S button instead of CONTROL H? TE 2 doesnt like that/ does it? Well/ 4A/TALK WILL acept that as a valid equivalent to CONTROL H!!!!

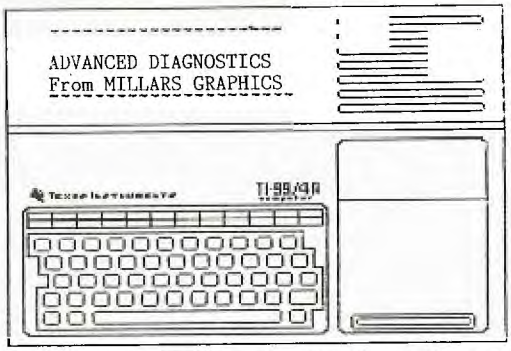
There are so many more features/ which I dont have space to mention that I leave you with this..... if you are thinking of buying the program but want to know more/ then just drop me a line (GOWFAR on the TEXPACBBS) and ask me what you want. I will be only too happy to answer any questions/ if possible

There is no doubt that this program is (if not better) the equivalent of MODEM7/ for the CP/M machines so for this XMAS/ it is/ definitely a MUST!!!!

SND CLASSIFIEDS

Wanted to buy :*

BROTHER EP44 PRINTER
Phone Wayne Steele - 02 5214128



Advanced Diagnostics from the outside would seem to be a very powerful tool and comes on disk with a 34 page manual. The programme runs in extended basic, Editor Assembler or Mini-Memory (memory expansion reuired?).

The programme is like "Disk Manager","Disk Fixer"and TI's own diagnostics module all rolled up into one neat package.

The programme presents a reasonably laid out screen which is used virtually for all operations. You have a STATUS window - giving details of various disk drive functions. A DISPLAY window - giving disk sector data, memory check details, file listings etc. And some COMMAND line spaces to enter the various commands you wish to use.

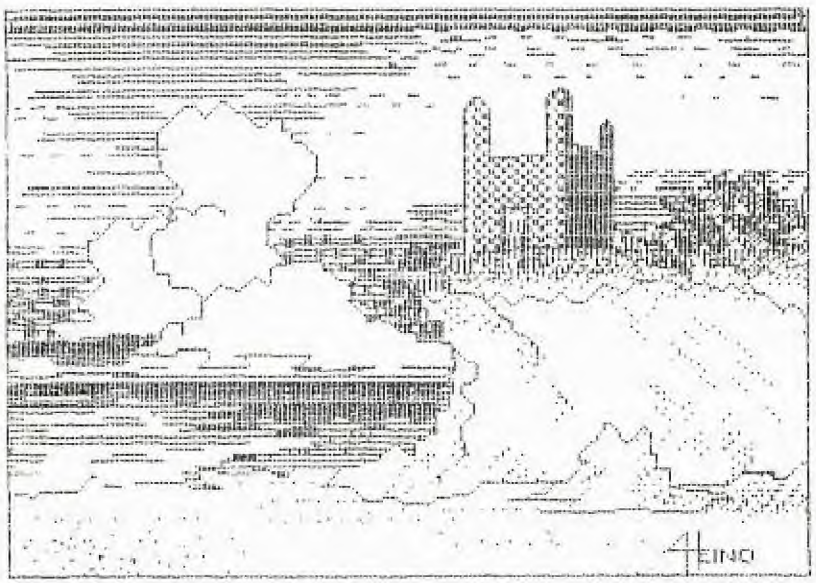
Commands are easily entered in either abbreviated or full form (in fact a file can be created to perorm your own specific test routine). Some of the features are disk cataloguer, disk read and write operations (for repearing directories and files), memory checking (to find bad memory locations) and checking various disk drive operations.

As I said this is a neat package but it is not a complete disk manager, disk fixer, or diagnostics module (in a easy to use form). It does not copy disks, change file names or delete files. It has the ability to "FIX" disks but does not have enough detailed information suitable for beginners. As for being able to test various accessories apart from disk drives eg. joy stick port RS 232 etc. I don't believe that it has this ability.

As I said the package does not perform some jobs like the other packages but these may be simulated by using the features provided in Advanced Diagnostics (that's why I said they couldn't be done easily).

Advanced Diagnostics gives you some (or all)of the features of many packages and puts them into one package for your convience but it is up to YOU to decide if it is GOOD FOR YOU.

PICTURE CREATED WITH TI-ARTIST



Jenny's YOUNGER SET under 18's page

Hi! Gang! Welcome to another Younger Set set of pages. Yes! we have gone to 2 pages in this issue of the Sydney News Digest...plus, thanks to you, we have shown the adults in this group that we are the most active members...with cartoons, pictures and programs scattered through-out the entire magazine.

The front page was designed by Robert Davy with his entry in our recent FRONT PAGE COMPETITION with the very dramatic TUNNELS OF DOOM drawing.

Both Joshua Rust and Matthew Havilah contributed cartoons which would make the cartoonists in the big newspapers stand up and take note.

Master Cummins did a great job with the GRAPHX program with his map of the World, which Shane has used as a Column header for the INTERNATIONAL SPOPPING pages.

Now to the competition in last months SND...Yes! there were some typing errors, which were placed there to through you out...but every entry received mentioned that they spotted the errors. Before I announce the winner of that one, I should mention that two of our Younger Set members submitted programs as requested, for both encoding and decoding for that competition... they are Brian Grinter and Kevin Watts. Their programs have been placed in the 4 page lift-out Program section designed for you to add to your binder.

Kevin Watts is the lucky winner of a special prize which will be posted out to him, and for the decoded letters, the winner is...GUNTER BLUM. Your prize will be in the mail shortly.

A very special thanks to all those who submitted their entries, but as you know, not every one can win. But never frett, there will be lots of competitions as time goes on.

The next issue of the SND is the Christmas/New Year edition, and there will be no JANUARY SND. Time for the Committee to have a couple of weeks break. Then, February is Election time (known as our A.G.M = Annual General Meeting).

Texas Instruments have given me a set of books to be used as prizes for future competitions, they are called "CREATIVE PROGRAMMING FOR YOUNG MINDS". This set of two books marked YELLOW ALL STARS and VOLUME#3 are designed to help you think of programs you can write. We have been given about 6 sets, so stay tuned, as you could be a lucky winner.

O.K. GANG! Now lets hear from you. Want to see your name in print? Then lets see those CARTOONS, CREATIVE FRONT-PAGE PICTURES, MINI PROGRAMS & ONE LINERS, HIGH SCORES for the Hall of Fame, and anything else you can think of to send me.

See you next month.
Yours in computing the TI WAY,

Jenny

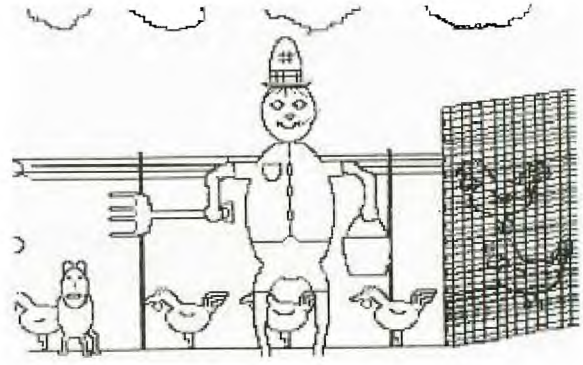
JENNY

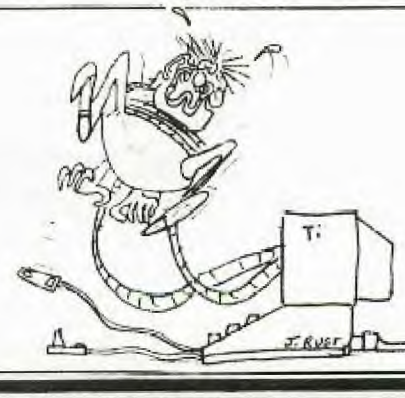
Here is a letter from GRANT JOHNSON of Fairfield West, N.S.W. He writes...

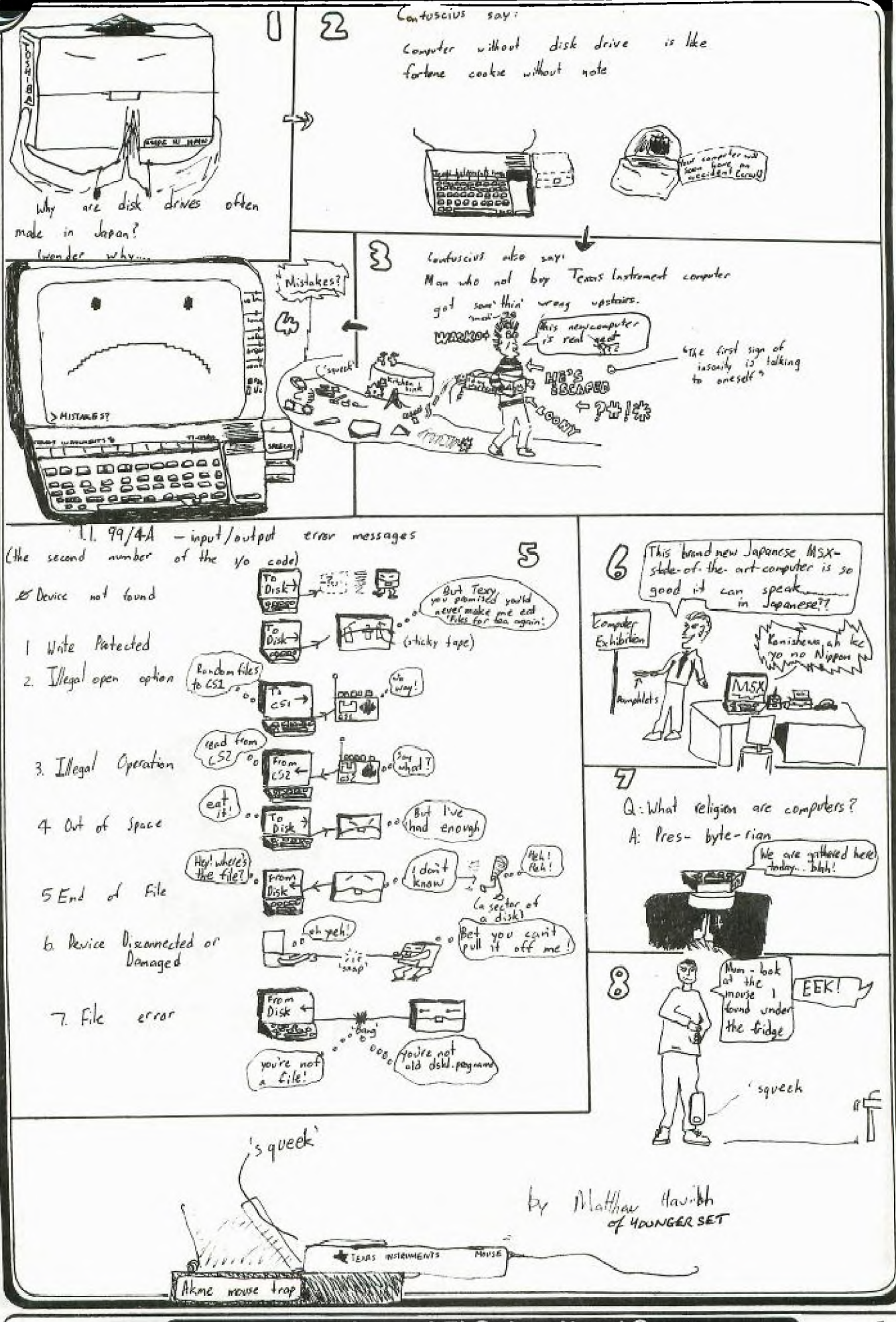
DEAR JENNY,
HI! I'M A FAIRLY RECENT ADDITION TO TISHUG, AND HAVE FOUND IT TO BE BOTH VERY INFORMATIVE AND ENJOYABLE. THE REASON I'M WRITING, THOUGH, IS TO ASK YOU A QUESTION WHICH I THINK WOULD INTEREST, AND APPLY, TO MANY OF THE YOUNGER SET MEMBERS. AS I AM A FULL-TIME STUDENT (YEAR 11), I FIND IT IMPOSSIBLE TO FIND TIME TO GET A PART-TIME JOB. BECAUSE OF THIS, MY INCOME IS VERY LOW. I HAVE THE BASIC CONSOLE, SPEECH SYNTHESIZER, EXTENDED BASIC AND A CASSETTE PLAYER, WHICH HAVE NEARLY ALL BEEN BIRTHDAY OR CHRISTMAS PRESENTS. THE PROBLEM IS THAT I CAN'T LIVE WITHOUT AT LEAST 1 DISK DRIVE! A LOT OF GOOD SOFTWARE IS DISC-BASED, AND IT MAKES THE COMPUTER SO MUCH MORE VERSATILE. SO THE QUESTION IS; WHAT IS THE CHEAPEST WAY TO GET 1 DISK DRIVE RUNNING?
Yours Sincerely,
Grant Johnson.

Dear Grant, Yes I know what you mean about disk drives, they are very expensive, but worth the money. There are a lot of good programs for the TI on Disk, including HITCH HIKERS GUIDE TO THE GALEXY, ZAXXON and many others which I have. The problem is, there is no real cheap way to expand your system. I suggest that you contact Peter Schubert who makes the Mini Modems and the stand-a-lone 32K memory boxes etc, and see if he can make a Disk Controller Card, his address is on the BACK PAGE of this SND. You could also buy a Disk Controller Card ment to go into the PE BOX, which should be able to be converted to plug into the side of your console with a bit of work, then you wil be able to add a disk drive to that. You can now get slim-line Disk Drives for under $150. The other thing you can do is contact either TEXCOMP, UNISOURCE or one of the other large MAIL ORDER companies (also listed in this SND)and ask them for a catalogue of products they sell. I did see a disk drive in one of them, that has its Disk controller built inside the drive.

Good luck!
Regards
JENNY






1
TOSHIBA
Why are disk drives often made in Japan?
Wonder why....
2
Confuscius say:
Computer without disk drive is like fortune cookie without note
Your computer will soon have an accident (crash)
3
Confuscius also say:
Man who not buy Texas Instrument computer got som' thin' wrong upstairs.
WACKO
This new computer is real great
"The first sign of insanity is talking to oneself"
HE'S ESCAPED
LOONY
4
Mistakes?
MISTAKES?
'squeek'
Kitchen sink
5
I.I. 99/4A – input/output error messages
(the second number of the I/O code)
Device not found
1 Write Protected
2. Illegal open option
3. Illegal Operation
4 Out of Space
5 End of File
6. Device Disconnected or Damaged
7. File error
To Disk
But Texy you promised you'd never make me eat 'Files for tea again'
(sticky tape)
Random files to CS1
To CS1
No way!
read from CS2
From CS2
Say what?
eat it!
But I've had enough
Hey! where's the file?
From Disk
I don't know
Heh! Heh!
(a sector of a disk)
oh yeh!
'snap'
Bet you can't pull it off me!
'bang'
you're not a file!
you're not old dskl. programme
6
This brand new Japanese MSX-state-of-the-art-computer is so good it can speak in Japanese??
Computer Exhibition
Pamphlets
Konishewa ah ke yo no Nippon
MSX
7
Q: What religion are computers?
A: Pres- byte-rian
We are gathered here today... blah!
8
Mum - look at the mouse I found under the fridge
EEK!
'squeek
'squeek'
TEXAS INSTRUMENTS MOUSE
Akme mouse trap
by Matthew Havilah
of YOUNGER SET

SECRETARY'S NOTES with J.R.

Hi! First a summary of the discussions at the October Committee Meeting. We received notice of an impending resignation. Chris Ryan, who is studying to be a doctor at Sydney University, finds he now has little time to attend to TISHUG business. As Public Relations Officer Chris has served the club well and he has agreed to complete the analysis of the recent membership survey to determine the needs of the club members. Chris Buttner accepted an invitation to join the committee until elections are held next February.

In order to improve security at the main meetings all members attending such meetings will now have to display their membership card. Plastic holders have been purchased so when you attend a meeting don't forget to bring your card.

There was an extended discussion about Hanley Armstrong's idea of holding a tutorial meeting at COONABARABRAN NSW. It was agreed that this would be a good idea. It would give those country members who live in that region an opportunity to attend a club tutorial. More information when some concrete plans have been made.

Fred Morris tabled a new library policy, which will enable members to borrow overseas newsletters and computer books for up to three weeks.

The Multiplan Users' Group has now been formed officially. The formalities took place at their inaugural AGM on October 9th. held at the MTE Centre 2nd Level, St. Martin's Tower, Corner York and Market Streets in the City. If you want to join the group contact Alec Prime at Strathfield T.A.F.E. or Richard Womark on 290-3555. Their first newsletter dated September 1985 has been published. It contains answers by Andrew Larkin to some common questions Andrew Larkin is the Technical Services Manager at Microsoft. A sample question: "How can I replace the formulae in a range of cells by the results they return?". Answer: This is a simple process. The External Copy command copies the VALUES contained in the selected cells on to a new spreadsheet. Formulae are not transferred. We can make use of this to copy the values of the range of cells back overtop of the formulae by using the following steps:

1. Save the spreadsheet.
2. Blank the cells we want to replace.
3. Xternal Copy (with the Link option set to NO) the cells from the saved spreadsheet back into the blanked cells.
4. Save the new spreadsheet.

Tony McGovern warns those members with a copy of the Disk Manager 1000 program from Ottawa Canada, could be in for a nasty shock. It can destroy files for no apparent reason. He recommends that you do not use it on anything you can't afford to trash.

A new magazine dedicated to the TI99/4A has been started in the US. Named MINI-MAG 99 it is available by subcription for US$35 (Surface mail) from SOS Publishers, 21777 Ventura Blvd.,Suite 203, Woodland Hills CA 91364. The third issue contains information on TI-WRITER file management, the FORTH language, and using the Tandy CGP-115 Plotter.

DataBioTics Inc. PO Box 194, Palos Verdes Estates, CA 90274 has advised that some new software is available known as PILOT language. Only eight simple instructions to remember. A compiler generates 9900 Assembly Code. Order part #DPDOPI. Another new piece of hardware is a RAM Disk called SUPERDISK. This contains Assembly, Basic, and X-Basic utilities operating faster than hard disks. Additional routines included are peek/poke, memory move, write VDP, call catalogue, screen dump, and sort files. SUPERDISK is a PE Box card with 256K of RAM on board expandible to 512K. Order part #DBPOSD US$299.00

Now to my mail. John Dartnell writes: One feature of the TI99/4A system which I have never really been keen on is having the VHF/UHF modulator dangling between the computer and TV. To overcome this problem, I have installed the modulator (without the plastic case) in the computer at the bottom of the console. The modulator I/P cable has had the plug removed and the cable is soldered directly to the back pins on the modulator socket mounted on the rear of the computer. A female RCA connector was fitted to the rear of the computer case and connected to this is the modulator O/P. Now the only connection between the computer and the TV is the aerial cable. This setup has been operating successfully for more than 2 years.

B.S. Stevenson of Eastwood writes: "I appreciate the index on the back cover of the October issue. Please make this a regular item. Can a comprehensive index be produced to cover all back issues? " Are there any volunteers out there to help with compiling an index say for the last 12 months issues.

My final comment for the month concerns the increasing usage of the word chairperson. Why don't we call women wopersons, or woperdaughters! The latin-based root word "man" or "manu" means hand, or in control and has nothing to do with a male. Man only refers to males if it is preceded by an article such as "the". Such words as management,human, manual, and chairman are formed from the non-sexist root. A chairman is in control of the chair, whereas a chairperson cannot have control.

Running out of memory.....

Happy Computing the TI way,

John Robinson.
Hon. Secretary

who ya gonna call....

THE PROGRAMMER CRISIS LINE

Any Monday to Wednesday
10am-4pm and any other days
10am-9pm. (02)99-2229.

EXTENDED BASIC WORD PROCESSOR PROGRAM

Program by Mike Slattery

A mini-review by Shane

THIS PROGRAM IS CAPABLE OF BEING RUN FROM CONSOLE MEMORY AND CAN BE LOADED FROM CASSETTE IF SO REQUIRED. NATURALLY IF CONSOLE MEMORY ONLY IS USED THE AVAILABLE MEMORY IS RESTRICTED AND ONLY ABOUT ONE PAGE OF TEXT (OR 66 LINES) CAN BE WRITTEN BE FORE THE MEMORY IS ULL.

Full screen editing is available by using functions S,E,D, and X to move around the screen.

IF THE TEXT IS LONGER THAN 22 LINES IT DISAPPEARS OFF THE TOP OF THE SCREEN BUT WILL REAPPEAR WHEN THE CURSOR REACHES THE TOP OF THE SCREEN. SIMILARLY WHEN THE CURSOR REACHES THE BOTTOM OF THE SCREEN ANY TEXT NOT YET DISPLAYED WILL APPEAR. WHEN IN TEXT MODE THE FOLOWING FUNCTIONS ARE ACCESSIBLE.

1) FNCT. 1 DELETE A CHARACTER.

2) FNCT. 2 INSERT ONE CHARACTER SPACE.

3) FNCT. 3 INSERT A BLANK LINE ABOVE THE LINE THE CURSOR IS ON.

4) FNCT. 4 MOVE TO ANOTHER PART OF THE TEXT. THE LINE NO. IS REQUIRED.

5) FNCT. 5 DELETE THE LINE THE CURSOR IS CURRENTLY ON. CONFIRMATION IS NEEDED.

6) FNCT. 6 MOVE TEXT FROM ONE LOCATION TO ANOTHER.

7) FNCT. 7 COPY TEXT FROM ONE PART TO ANOTHER.

8) FNCT. 8 REPLACE ONE LINE WITH ANOTHER.

9) FNCT. 9 REVIEW TEXT BEGINNING AT ANY LINE.

10) CTRL. M RETURNS TO THE MAIN MENU.

11) CTRL. P GOES TO THE PRINTER SELECT MENU. THIS VERSION FOR THE AMUST 80/DT 12) CTRL. R PRINTS THAT LINE OF TEXT A T THE RIGHT HAND SIDE OF THE PAGE.

13) CTRL. S AUTOMATICALLY CENTRES THAT LINE OF TEXT DURING PRINTING.

14) CTRL. T PRINTS TEXT INDENTED BY THE NO. OF SPACES SPECIFIED AT THE START.

POINTS TO NOTE ABOUT THIS PROGRAM.

NOTE 1:- THE TEXT WIDTH IS 20 CHARACTERS PER LINE ON THE SCREEN. TO PRINT IN 80 COLUMN WIDTH YOU MUST MERGE THE TEXT TO THE CORRECT WIDTH USING OPTION 6 ON THE MAIN MENU . THE PROGRAM WILL GIVE YOU THE OPTION OF MERGING SUCCESSIVE LINES TOGETHER UNLE SS THE LINE IS A BLANK OR CONTAINS CERTAIN PRINTER CONTROL CODES. ONLY IF THE TAB CONTROL CODE IS DETECTED WILL YOU BE ALLOWED THE OPTION OF MERGING WITH THE NEXT LINE.

NOTE 2:- BECAUSE THE PROGRAM IS WRITTEN IN EXTENDED BASIC IT HAS SOME LIMITATIONS.

1) SPEED. SOMETIMES THE PROGRAM WILL MISS A LETTER SO KEEP TRACK OF WHAT YOU TYPE ON THE SCREEN.

2) WHEN MERGING TEXT EXTENDED BASIC DELETES TRAILING BLANKS SO IF A SPACE IS THE LAST CHARACTER ON A LINE THE PROGRAM WILL AUTOMATIALLY INSERT A BLANK AT THE START OF THE NEXT LINE.

NOTE 3:- ONCE TEXT HAS BEEN MERGED IT CAN BE DISPLAYED ON THE SCREEN BUT CANNOT BE EDITED. YOU CAN MAKE CHANGES ON THE SCREEN BUT VARIABLE RESULTS WILL RESULT TO THE TEXT. I SUGGEST YOU SAVE THE TEXT IN UNMERGED FORM AND MERGE IT JUST PRIOR TO PRINTING.

NOTE 4:- PRINTER CONTROL CODES. THIS PROGRAM WAS WRITTEN FOR THE AMUST 80/DT AND PRINTER CODES MAY NOT BE VALID FOR OTHER PRINTERS. CHECK IN YOUR PRINTER MANUAL TO SEE IF THE CONTROL CODES ARE THE SAME. IF NOT IT SHOULD BE SIMPLE TO REWRITE THE PRINTER CONTROL CODING SECTON AND PRITING SECTION TO YOUR PRINTER'S CONTROLS. BECAUSE OF THE STRUCTURE OF THE AMUST CODES IF DOUBLE WIDTH PRINTING IS SELECTED IT MUST BE THE LAST CODE SENT TO THE PRINTER SO WHEN THIS OPTION IS SELECTED THE PROGRAM WILL AUTOMATICALLY RETURN TO TEXT MODE WHEREAS ANY OTHER SELECTION WILL RETURN TO THE CONTROL CODE SELECTION MENU.

NOTE 5:- WHEN INSERTING A LINE TEXT IS MOVED DOWN THE SCREEN ONE LINE . IF TEXT MOVES OFF THE SCREEN IT IS NOT LOST BUT WILL APPEAR WHEN THE CURSOR REACHES THE BOTTOM OF THE SCREEN. WHEN A LINE IS DELETED THE TEXT MOVES UP TO FILL THE GAP. IF TEXT IS NOT ALREADY DISPLAYED ON THE SCREEN THE NEXT LINE AT THE BOTTOM OF THE SCREEN WILL BE PRINTED.

NOTE 6:- FOR FUNCTIONS 4,6,7 AND 8, IF THESE KEYS ARE PRESSED BY MISTAKE ENTER A ZERO AND YOU WILL RETURN TO TEXT MODE.

NOTE 7:- IF USING THE CASSETTE VERSION DO NOT SAVE THE TEXT IN MERGED FORM. TO SAVE TIME TEXT IS SAVED IN BLOCKS OF THREE LINES AND TEXT WILL ALMOST CERTAINLY BE LOST IF A MERGED VERSION IS SAVED. INSTEAD SAVE IN UNMERGED FORM AND MERGE PRIOR TO PRINTING.

NOTE 8:- IF PUTTING TEXT IN A BLANK LINE BUT NOT AT THE START OF THE LINE, DO NOT USE FNCT TO MOVE ACROSS. INSTEAD USE THE SPACE BAR OTHERWISE ERRORS MIGHT OCCUR IF YOU EDIT THE LINE ON SCREEN.

This program will be available from the TI.S.H.U.G. shop on disc or cassette. If you do not have an expansion system and wish to connect a printer then you wil l need either the PARRALLAX device, or the MODEM/RS232. The latter was reviewed in last months SND and is made by TISHUG member Peter Schubert. He also makes a stand-alone 32K Memory Box for $120.

We Want to Hear From You!

Welcome to another TISHUG Shop Column.

First up this month is a complete listing of items together with prices of everything currently available through the shop. Any of these items except where indicated can be purchased at the shop on meeting days, by mail order or can be ordered via the BBS to username TRELIB.

Navarone Cartridge Expanders	$55
Navarone Console Writers	$45
Disks (Box 10) Memorex SSDD	$25
Home Computer Magazine (Volume 5 Nos. 2,3,4 & 5)	$8
Softex Magazine (Volume 1 Nos. 5 & 6)	$4
Technical Data Manual	$15
Tape Software (Old series 1 to 20 and new series 1985/1 to 1985/10 - only last two available at meetings the rest by mail order)	$3
Disk Manager 1000	$5
Reformater, Lasso, Disk Fixer	$5
BEAXS Editor Assembler (Specify Corcomp or Ordinary version)	$5
Pictures Disk	$5
Adventures Disk	$5
2D Graphics Disk	$5
Ultra Copy Disk	$5
Forth Demo Disk	$5
Super Debugger Disk	$5
TI Writer & Multiplan Updates	$5
Forth Source Code (2 Disks)	$10
TI Forth Disk & Docs.	$30
Best of 99er Book	$30

That's currently all we have. Due to the popularity of the Navarone Data Base Manager an order has been placed for 6 more. These together with an initial shipment of Paint 'N' Print should arrive in time to be on sale at the December meeting. Projected prices are $90 for the DBM system and about $45 to $55 for Paint 'N' Print.

Software to be released this month will be a mixture of games and educational programs on tape (No. 1985/11) and on disk 2 of Ross Mudies latest releases Text Concat and Key Utility. Another disk will contain a selection of programs from our friends at the Channel 99 User Group. I think that you will like all of these.

Software submitted by members and judged last month included :

Australian Flag by Bill Longmuir - an XB Graphics display with a few quiz questions. The judging panel felt it was a good program particularly the graphic representation of the flag.

Text Concat by Ross Mudie - a useful utility for joining together files. Released on disk in November.

Key Utility also by Ross Mudie another useful utility routine.

Draughts and Across the Tasman by Arto Heino. Some suggestions given to Arto have been incorporated in new versions of his programs and they will be re-judged. Arto has now presented 5 programs for review and some of these should be on sale under the new incentive scheme shortly.

From the latest issue of MICROpendium some news on software availability.

Scott Adams has written 4 new adventures for use with the Adventure Module - Hulk, Claymorgue Castle, Spider-Man and Buckaroo Banzai are the titles and each has a suggested retail price of US$19.95 or as a special offer from Texcomp P.O. Box 33084 Granada Hills CA 91344 order any 3 on cassette or disk and receive the 4th one free along with a new adventure hint book and the Adventure Module. That sounds a real bargain to me. If you just want the adventure Module, Texcomp have it for the low price of $6.95.

Texcomp also have available 3 modules Story Machine, Burger Time and Facemaker - all 3 for $17.95, and if your looking for a TI Writer they have them for $38.95 and even Mini Memories for the same price.

Ever wanted an MBX Expansion Unit. I have never even seen one but it is one thing I have always wanted. Tenex have them for $64.95.

Asgard Software P.O. Box 10306 Rockville Maryland 20850 have a GRAPHX Companion disk containing many demos to use with GRAPHX. It gets a very good review and would appear excellent value at $7.

Late news - watch for the release a great locally written sports simulation called Cricket - The Game. A great limited over match and just in time for the summer cricket season.

Also remember when ordering by mail to add the appropriate amount of postage to your order - $2 up to $10 value, $3 between $11 and $20, $4 between $21 and $30 and above $31 add $5.

FROM THE EDITOR ... Shane Andersen

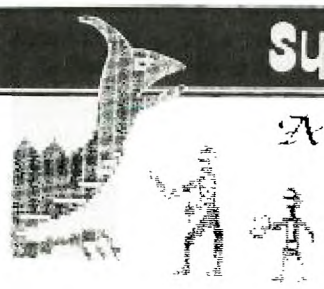
Nestled neatly in a little hole, in the magazine, you have finally found my article. Infact, this is the only section left, after I had pasted up the rest of this issue. So I had better keep it short and sweet. I was so proud of our under 18's Younger Set members of this club, they have helped to fill this issue with some very interesting goodies, as you will see. A special thanks once again goes to those members who have involved themselves in the Publication Committee, and also to Fred Morris who is co-ordinating that side of things. As you would have noticed, the contents of our SND has improved 100% since that team was established. Full use of the very latest equipment in the form of Modem technology is used as each of the Publication Committee send typed files to Fred over the Modem, then he, in turn transmitts them to me via modem. There are aso other members like Michael Black and Greg Hope who phoned me on the day of past-up, and transmitted their submissions to this publication via this unique media. A thanks goes to Terry Phillips, who, even though is loaded with his Committee duties, came over and spent most of the day, printing out the files which others had transmitted to me, while I was pasting and designing this SND. We have a lot to be thankfull for, in this group, and I for one, am very proud to be part of TI.S.H.U.G. I was saddened to read in the CHANNEL 99 Canadian User Group magazine, that they will be dispanding their publication due to both lack of money and interest. We have always been able to obtain a wealth of information from that Newsletter, especially their articles and programs on Machine Language.

I will have some very interesing news to share with you in the next (CHRISTMAS ISSUE)of the SND, so stay tuned.

Bye for now.

SHANE

Assault the City



by Stephen Johnson

"What is Assault the City?", you ask. "It's not another one of these really stupid arcade games."

NO, it is not one of those. Assault the City is a new game for Tunnels of Doom. YES that is right, there is actually a new game for Tunnels of Doom.

The scenario is, the King has asked you and another party to find a path through the impassable mountains. Your group was delayed while it was getting supplies, so the other party did a credulous thing. They left without you, intending to meet you by the lost ruins of the great city of GRISLOD.

When your group arrived, the other party was not there. After examining the area, you come to the conclusion that they were taken captive and are being held somewhere in the lost city.

Your mission, should you decide to accept it, is to rescue them before they are killed.

This game is similar to "Quest for the King". Most of the graphics are the same, but it has different creatures, weapons, and items. There are eight quests to find instead of two. The eight being the members of the other party.

Like "Quest for the King" you can have up to four members in your party. They can be any combination of Warriors, Enchanters, and Wizzards. There is also a special character that can be used if you select one member in your group, called a Champion.

I will not tell you anymore about this program, I will let you find out for yourself. But I will say that I feel this game is quite an improvement over "Quest for the King". All the little things in this game make it more interesting. Although, I must admit that part of the reason I like it is because it is different.

Now you ask, "Where can I get this program?"
Well, it is in our Club Library:*
SIZE: 13.0K
CAT # 09-00145-SGP

*CHANNEL 99 USER GROUP
P.O. Box 1005 STATION 'A'
HAMILTON, ONTARIO,
CANADA, L8N 3R1.

SORRY LYNNETTE IT'S CLUB/NIGHT, YOU'LL HAVE TO GET A TAXI.

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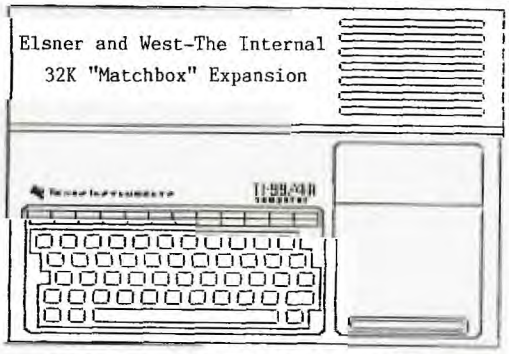
We also have TI-99/4(A) Peripherals and
harware like Modems, Monitors & Printers.
We specialise in cables for your hardware needs

Come up and see us some TIme! IMAGIC



Transcriber's Note: The following article is copied to the best of my ability from a copy of the original. The only difference is that where in the original version wire names were overlined, here they appear underlined. My comments (if any) will appear in italics. The original article appears to be dated Feb-March 1985. Jim McCulloch 7/07/85

THE TI-99/4**AT**
(ADVANCED TECHNOLOGY)
PART 1.
32K OF CMOS RAM
INSIDE THE TI-99/4AT
(The 'MATCHBOX' expansion!)
By Bernie Elsner and Phil West
'TI-99/4AT 'AB-USERS' of PERTH, WESTERN AUSTRALIA (T.I.U.P.)

Documentation reconstruction by Jim McCulloch (Evanston Illinois) and Peter Schubert (TI.S.H.U.G.)

HITACHI HM6264LP-15

This is a 28 pin 8K * 8 bit CMOS RAM chip. A big brother to the 2K * 8 bit HM6116LP-4 used in the MINI MEMORY.

There are several versions of the chip. The one we used is LP (for Low Power - which is required if you intend to use battery backup) and 15 (for 150 nanoseconds) which is plenty fast enough for ol' TORTOISE-TI....

2 years ago, in PERTH, the chip would have cost you $140.00 and now it is available for around 8 to 15 dollars depending on quantity purchased. Talk about a price crash!!!!

These chips can be obtained from:-

'WESTRALIAN INSTRUMENTS'
P.O. BOX 246,
MT.LAWLEY, W.A.6050

We are developing several other enhancements for the TI-99/4AT. All components will be mounted on a board INSIDE the computer. These will go into future TECOTIME articles.

****
IF YOU ATTEMPT ANY OF THE MODIFICATIONS DESCRIBED IN
THIS SERIES OF ARTICLES YOU DO SO AT YOUR OWN RISK!!
****

32K MATCHBOX EXPANSION

(On the unit I built, programs seem to work normally. The only difference seems to be a longer time necessary to load machine language routines into the expansion memory. For example, the XB loader takes 4 minutes to load Paul Charlton's uncompressed XMODEM as opposed to 2 1/4 minutes for a P.E.B. memory expansion.)

This project should be regarded as a 'BUDGET' MEMORY EXPANSION for the the unexpanded TI-99/4A user rather than as a replacement for existing 32K expansion cards!

If you wish to add the 32K expansion but don't have a disk drive or controller, you should also be aware that the extra memory is not fully useable by cassette based users.

For instance, you may only SAVE Extended Basic programs up to 13K in size to cassette, though the programs will have a much larger operating space for arrays etc. (You could for example, read a 13K text file into a 13K program - If you're the patient type....

If you have a MINI MEMORY module the project has some interesting potential, using EXPMEM1 and EXPMEM2 and also for machine language programs.

Later, using the 'Westralian Instruments' MAXI MEMORY and with a battery backed 32K memory expansion on board, it will be possible to create a TI-BASIC program that utilises a 24K data file located in EXPMEM2 assisted by 8K of M/L routines ('Display At','Accept At' etc.) located in the 'MAXI MEMORY'. If the TI-Basic program was less than 8K in size it could be saved in EXPMEM1.

EVERYTHING WOULD BE INSTANTLY AVAILABLE ON POWER UP AND WOULD OPERATE WITH THE ACCESS SPEED OF A RAM DISK!

(Although not documented, it is possible to save programs to EXPMEM1, before doing so, you must CALL LOAD(8192,90,165). EXPMEM1 can also be used for data files by loading similar values to those used for EXPMEM2 into location 8194.)

PROTOTYPE

The project was developed on an old TI-99/4 (without case) and the four RAM chips were ALL 'PIGGY-BACKED' in one 28 pin socket! It was surprisingly easy to do and took up an unbelievably small amount of space. Hence the name 'MATCHBOX' expansion. (TI's 32K memory expansion card uses 33 chips.)

To make it more reliable we mounted the four RAM chips in two sockets on a small piece of strip board soldered to the GROM extender. This made a tight fit in the space where the speaker used to be in the old TI-99/4 computer.

Whether you end up with a 'RATS NEST' or a neat job depends on the care you take. If you work carefully and neatly the whole project can be finished in a few hours. Much less time than it takes to write (or read) this article.

Only a small portion of the board is needed for the 32K expansion and you may find it easier to mount the four RAM chips in separate sockets. This would increase the amount of wiring required but eliminate the tricky PIGGY-BACK soldering.

PARTS REQUIRED

4 HITACHI HM6264LP-15 RAM Chips. (For M/L use you may add them one at a time as required.)
1 piece of copper strip board. (34 strips wide and 23 cm. long if you intend to add other projects later.)
2 (or 4) 28 pin Chip sockets
1 22 uF Tantalum Capacitor.
Several non-conducting standoffs or a sheet of insulating material to separate the strip board from the metal shielding around the computer.
Lengths of thin, multi-stranded wire or ribbon cable to provide flexible connections between the board, GROM extender and main computer board.
Solder, fine tipped iron, etc.

FIGURE 1 shows a simplified block diagram of the memory expansion. Thirteen lines of the address bus (A3-A15), eight lines of the data bus (D0-D7), the WE line, +5V and Earth, are all obtained by soldering wires to the back of the GROM EXTENDER. (This is the 'GIZMO' that connects modules to the main computer board and causes all those Extended Basic lockups when not making proper contact.)

Five other lines are obtained from the TI-99/4AT Mother Board.

Believe it or not, all the decoding to separate the EIGHT 8K blocks of CPU RAM is already done in the computer! The lines for the 32K expansion were just left unused.....Sheeeeeeeesh!

Four chip select lines are required for the blocks:

LOWMEM -- >2000 to >3FFF
HIMEMAB -- >A000 to >BFFF
HIMEMCD -- >C000 to >DFFF
HIMEMEF -- >E000 to >FFFF

One other line required is DBIN (Not **DBIN**) and this is also obtained from the main board.

The 'easiest' way to connect these five lines is to solder wires (with a fine tipped iron) directly on to the pins of the console chips. We know this is crude but it sure is easy! What else do you expect from a TIN-POT outfit like 'WESTRALIAN INSTRUMENTS'??? (When the cover is back on, no one will ever know and it will work just fine....)

Use flexible wires or ribbon cable to connect between the GROM extender, main computer board and the board with the memory chips. (It is a good idea to anchor them somehow (?) to prevent movement breaking connections.)

FIGURE 2 shows where to connect the five wires on the TI-99/4A and FIGURE 3A shows the numbering of the pins at the back of the GROM extender. Next month if we have enough space we will complete this article.

If you feel you would like to have this expansion Memory in your console but do not feel up to the technical work you can have it done for $100 from:-

Peter Schubert
P.O.Box 28
Kings Cross. 2011

If you are in the Sydney area a console on loan is available while yours is being done. Phone Peter on (02)358 5602 for details.

Also, if you have a SPEECH SYNTHESIZER this can be removed from it's housing and mounted INSIDE YOUR CONSOLE. Why not have it permanently connected out of the way?

Happy Tinkering.

FIGURE 1
OVERALL CONFIGURATION

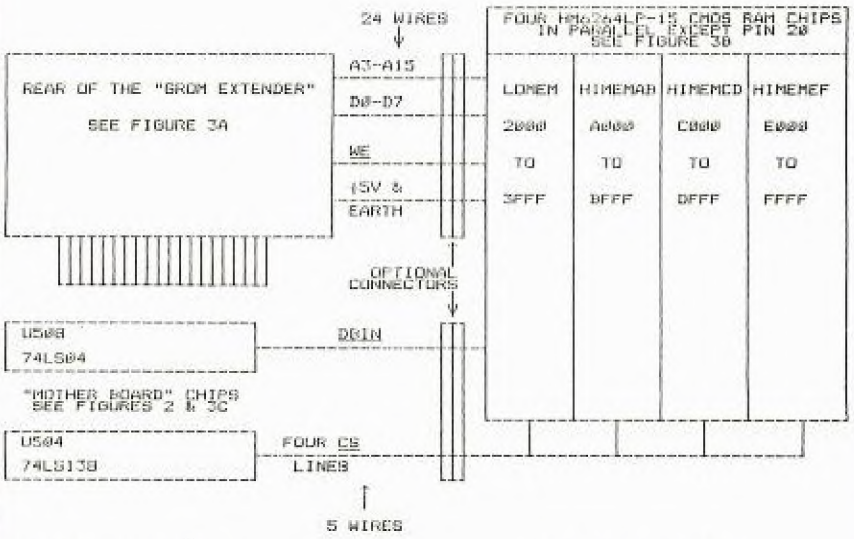
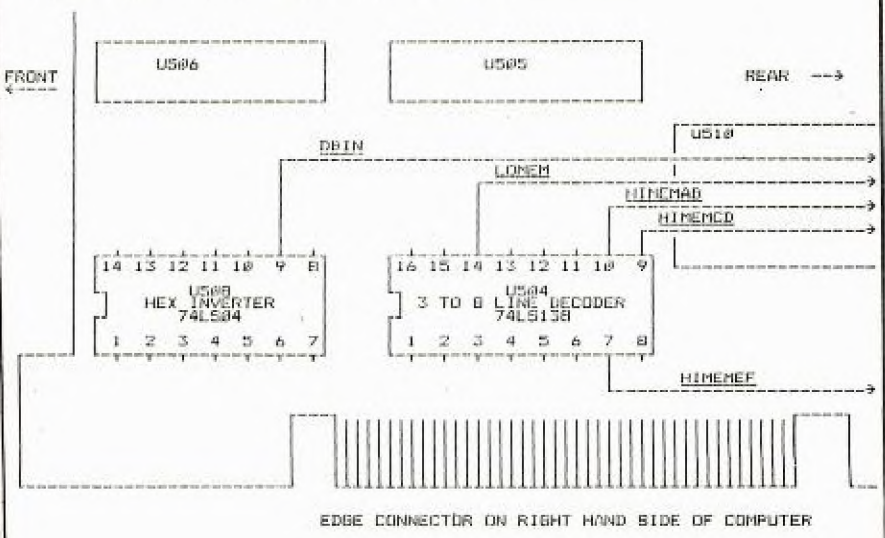
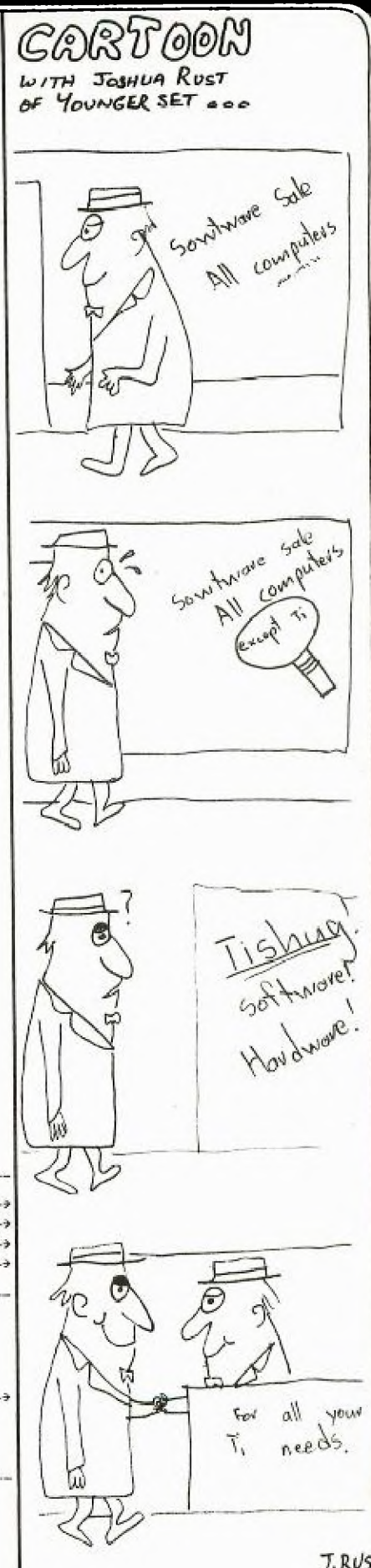
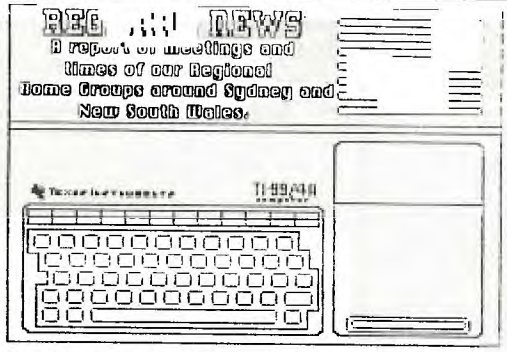


FIGURE 2
CONNECTIONS TO TOP OF TI99/4 "MOTHER BOARD"







The October meeting of the Glebe Regional Group was held on Tuesday October 8. It was encouraging to see a number of new faces there. A special visitor was Greg Oakes from Canberra who brought along an IBM keyboard he had converted to a TI keyboard. During the evening there was a demonstration of MICROSOFT'S MULTIPLAN and Shane Ferrett showed off a FORTH program he had written to convert FORTH screens to Display/Variable format. At the next meeting to be held on November 5 at 8 PM. at 43 Boyce ST Glebe, I will give a demonstration of VIATEL. See you there.
. Mike Slattery.

LIVERPOOL REGIONAL MEETING.

DATE:- 14TH SEPTEMBER
PLACE:-GRANVILLE
HOST:- ROSS HARDY

THE THEME FOR THIS MEETING WAS "FILES". THIS WAS VERY PROFESSIONALLY PRESENTED BY RICHARD SANFORD OF CAMDEN. IT WAS AN OVERVIEW OF FILE HANDLING WITH PARTICULAR ATTENTION TO DEFAULTS FOR CASSETTE AND DISK SYSTEMS. AREAS SUCH AS DATA STORAGE AND COMMANDS FOR AMENDING AND RETRIEVAL WERE STUDIED.
THE PRESENTATOIN WAS SUPPORTED BY PHOTOSTATED NOTES PREPARED BY RICHARD, I BELIEVE ANYBODY INTERESTED IN FILES AND FILE HANDLING, WOULD DO WELL TO ACQUIRE A COPY OF THESE NOTES. OUR THANKS TO RICHARD FOR HIS EFFORTS.
WE WERE FORTUNATE ENOUGH TO HAVE RECIEVED PRIOR TO THIS MEETING THE LATEST ISSUE OF THE "MILLERS GRAPHICS" NEWSLETTER COMPLETE WITH THEIR SUMMER CATALOGUE. OH WHAT EXCITING PROSPECTS FOR THE OLD 99/4A, THIS IS OLD NEWS NOW SINCE TERRY PHILLIPS COVERED THE NEW PRODUCTS IN HIS "SHOP" COLUMN IN THE OCTOBER SND, FOR THOSE WHO MAY HAVE OVERLOOKED THESE ITEMS IN HIS COLUMN I WOULD STRONGLY SUGGEST THEY ACQUIRE A COPY OF THE MILLERS CATALOGUE AND READ UP ON THESE GOODIES.

OUR THANKS TO ROSS AND HIS GOOD WIFE FOR PROVIDING ALL THOSE IN ATTENDANCE WITH THE GOODIES AND SUSTENANCE NEEDED ON A COOL AFTERNOON, HOT SOUP, TEA, COFFEE AND SNACKS APPRECIATED BY ALL.

FORTH COMING MEETINGS.

NOVEMBER, SAT.9TH	PHIL ROSSO	CAMPBELLTOWN. 52 GOULBURN ST RUSE (046) 259443
DECEMBER, FRI.13TH	MARCEL ZAIA	TONGABBIE. 35 FEARN ST 631 1534

```
100 CALL CLEAR
110 PRINT TAB(11);"WELCOME"
120 PRINT TAB(11);"=======":::::
130 PRINT TAB(6);"1=NAME TEACHER ":::
140 PRINT TAB(6);"2=DRAW ME ":::
150 PRINT TAB(6);"3=END ":::::
160 CALL KEY(1,K,S)
170 IF K=19 THEN 540
180 IF K=8 THEN 680
190 IF K<>7 THEN 160
200 CALL CHAR(42,"FFFFC3C3C3C3FFFF")
210 ROW=12
220 COL=16
230 CALL COLOR(2,11,7)
240 CALL CLEAR
250 INPUT "RELEASE ALPHA LOCK           T
HEN PRESS ENTER ":L$
260 CALL CLEAR
270 CALL HCHAR(ROW,COL,32)
280 CALL JOYST(1,Y,X)
290 CALL KEY(1,K,S)
300 CALL SOUND(1,500,2)
310 IF K=9 THEN 700
320 IF K=10 THEN 100
330 IF X<>-4 THEN 370
340 ROW=ROW+1
350 IF ROW<24 THEN 370
360 ROW=24
370 IF X<>4 THEN 410
380 ROW=ROW-1
390 IF ROW>1 THEN 410
400 ROW=1
410 IF Y<>4 THEN 450
420 COL=COL+1
430 IF COL<32 THEN 450
440 COL=32
450 IF Y<>-4 THEN 490
460 COL=COL-1
470 IF COL>1 THEN 490
480 COL=1
490 IF K<>18 THEN 520
500 CALL HCHAR(ROW,COL,42)
510 GOTO 280
520 CALL HCHAR(ROW,COL,42)
530 GOTO 270
540 CALL CLEAR
550 PRINT TAB(5);"PRESS ALPHA LOCK DOWN
":::
560 INPUT "ENTER NAME ":B$
570 CALL CLEAR
580 PRINT TAB(4);"ENTER 5 TO BEGIN AGIAN
 ":::::
590 PRINT "  ";B$
600 INPUT A$
610 IF A$="5" THEN 100
620 IF A$=B$ THEN 630 ELSE 570
630 PRINT "THAT IS CORRECT ";A$
640 CALL SOUND(1000,375,0,970,0,254,0)
650 FOR D=1 TO 1000
660 NEXT D
670 GOTO 570
680 CALL CLEAR
690 END
700 OPEN #1:"PIO"
710 PRINT #1:CHR$(27);CHR$(177)
720 FOR I=1 TO 24
730 FOR J=1 TO 32
740 CALL GCHAR(I,J,A)
750 PRINT #1:CHR$(A);
760 NEXT J
770 PRINT #1:""
780 NEXT I
790 CLOSE #1
800 GOTO 280                              END
```

SPRITE DEMO
by Rick Lilley

This is an interesting little motion program that I obtained from my friend and neighbour Alan Charron who picked it up from one of the T.I.B.B.S. systems.
I hope you can make use of the logic involved for your own programs.

```
100 CALL CLEAR :: CALL CHAR(96,"3C7EFFFF
FFFF7E3C"):: J=-1
110 FOR L=1 TO 28 :: CALL SPRITE(#L,96,5
,L*4,10,0,L*1):: NEXT L
120 FOR L=1 TO 28 :: CALL MOTION(#L,0,L*
J):: NEXT L
130 J=J*-1 :: GOTO 120
```

X-BASIC PROGRAMMING

By - Mike Dodd

I have two X-BASIC programs that work together to compact your BASIC or X-BASIC program - they require a disk drive to operate. The first program - PROGRAM ANALYSER will analyse your program for all the numeric and string variables: To operate it: >OLD the program you want to analyse. >SAVE DSKn.filename,MERGE Now, run the analyser. It will ask you for an input filename and an output filename. For the input filename, type in the filename you saved your program under in MERGE format. The analyser will take from one to several minutes, depending on how big a program you have. As it is running, it will tell you what line it is analysing. After it is done:- >RUN the PROGRAM COMPACTER. The computer will ask for a merge filename,a CREF filename, and an output filename. For the merge filename, type in the name of your program you saved in MERGE format. For the CREF filename, type in the name of the output file you specified in the analyser. The program will then tell you it is reading the CREF file. Then, it will it will tell you what line number it is compacting. What the compacter does is change every variable to one character in length (or two if there are more than 27 variables). When the program is through compacting, it will tell you how many bytes it cut, and ask you if you want the changes printed out. You can print them out to the screen or any external device. One final note: The analyser generates a file compatible with TI's cross reference program. (contained in Programming Aids 3) The compacter was originally set up to use the output from the cross reference program, but I wrote my own analyser, because TI's CREF program checked for subprograms and basic commands, as well as variables. My analyser checks for variables only. The compacter will run using the output from the cross reference program, because if it find a reference to anything other than a variable, it will skip it. To run your compacted program, after the program is done, type: >NEW <enter> >MERGE DSKn.filename <enter> >SAVE DSKn.filename <enter> The program is now saved to disk in PROGRAM format. When you RUN it, you may notice a small improvement of speed, depending on how large the program was, and how many characters the variable used to take up.

```
100 !******************
110 !*PROGRAM ANALYZER*
120 !******************
130 !BY MIKE DODD
140 !VERSION 85.0205.01XB
150 !REQUIRES DISK DRIVE
160 !ANALYSES MERGE TYPE
     FILE FOR ALL USER
     VARIABLES & FUNCTIONS.
170 OPTION BASE 1
180 DIM V$(200,2)
190 DISPLAY AT(11,6)ERASE AL
L:"PROGRAM ANALYZER" :: DISP
LAY AT(13,8):"BY MIKE DO DD"
 :: DISPLAY AT(24,2)BEEP:"PR
ESS ANY KEY TO CONTINUE"
200 CALL KEY(3,K,S):: IF S<1
 THEN 200
210 INPUT "INPUT FILE:":I$ :
: INPUT "OUTPUT FILE:":O$ ::
 OPEN #1:I$,INPUT ,VARIABLE
163
220 OPEN #2:O$,VARIABLE 254,
INTERNAL,OUTPUT :: CLOSE #2
:: SUBNM$="<MAIN>"
230 GOSUB 420
240 GOSUB 460
250 LINPUT #1:A$ :: L=ASC(A$
)*256+ASC(SEG$(A$,2,1)):: IF
 L=65535 THEN GOSUB 380 :: E
ND ELSE DISPLAY AT(24,16):US
ING "#####":L
260 FOR X=3 TO LEN(A$)-1 ::
C=ASC(SEG$(A$,X,1)):: IF C>1
 28 THEN 340 ELSE IF C=0 THE
N 370 ELSE Y=X+1
270 J=ASC(SEG$(A$,Y,1)):: IF
 J>31 AND J<129 THEN Y=Y+1 :
: GOTO 270 ELSE X$=SEG$( A$,
X, Y-X)
280 T=2-2*(J<>183)+(SEG$(X$,
LEN(X$),1)="$"):: X$=CHR$(T)
&X$&SEG$("()",1,-2*(T<3) )::
 X=Y-1
290 FOR Y=1 TO VAR :: IF V$(
Y,1)=X$ THEN 310
300 NEXT Y :: VAR=Y :: V$(Y,
1)=X$
310 Y$=SEG$(A$,1,2):: IF V$(
Y,2)="" THEN V$(Y,2)=Y$ :: G
OTO 370
320 IF SEG$(V$(Y,2),LEN(V$(Y
,2))-1,2)<>Y$ THEN V$(Y,2)=V
$(Y,2)&Y$
330 GOTO 370
340 IF C=131 OR C=147 OR C=1
54 THEN 250 ELSE IF C=161 TH
EN GOSUB 380 :: GOSUB 42 0 :
: SUBFLG=1 :: GOTO 370 ELSE
IF C=201 THEN X=X+2 :: GOTO
370
350 IF C<>199 AND C<>200 THE
N 370 ELSE X=X+1 :: Y=ASC(SE
G$(A$,X,1)):: IF C=200 AND S
UBFLG THEN SUBNM$=SEG$(A$,X+
1,Y):: GOSUB 460
360 X=X+Y
370 NEXT X :: GOTO 250
380 PRINT : :"SAVING... PLEA
SE WAIT"
390 OPEN #2:O$,VARIABLE 254,
INTERNAL,APPEND :: PRINT #2:
SUBNM$ :: PRINT #2:VAR : FOR
Z=1 TO VAR :: PRINT #2:V$(Z,
1)
400 PRINT #2:V$(Z,2):: NEXT
Z :: CLOSE #2 :: DISPLAY AT(
23,1):"SAVED" :: RETURN
410 REM INITIALIZER
420 PRINT "INITIALIZING... P
LEASE WAIT"
430 FOR Z=1 TO 200
440 V$(Z,1),V$(Z,2)="" :: NE
XT Z :: DISPLAY AT(23,1):"IN
ITIALIZED" :: RETURN
450 REM PRINT PROGRAM UNIT
460 SUBFLG,VAR=0 :: PRINT "P
ROGRAM UNIT:"&SUBNM$:"ANALYZ
ING LINE";:: RETURN
```

```
100 !******************
110 !*PROGRAM COMPACTER*
120 !******************
130 !BY MIKE DODD
140 !VERSION 85.0205.01XB
150 !REQUIRES DISK DRIVE
160 !REQUIRES THAT YOU
     FIRST RUN THE PROGRAM
     ANALYSER. CHANGES ALL
     VARIABLES TO 1 OR 2
     CHARACTERS IN LENGTH.
170 EOF$=RPT$(CHR$(255),2)::
OPTION BASE 1
180 DIM V$(200,3)
190 DISPLAY AT(11,6)ERASE AL
L:"PROGRAM COMPACTER" :: DIS
PLAY AT(13,8):"BY MIKE ODD"
200 DISPLAY AT(24,2)BEEP:"PR
ESS ANY KEY TO CONTINUE"
210 CALL KEY(3,K,S):: IF S<1
 THEN 210
220 INPUT "MERGE NAME?":UF$
:: INPUT "CREF NAME?":IF$ ::
 INPUT "OUTPUT FILE?":OF $
230 OPEN #1:IF$,INPUT ,VARIA
BLE 254,INTERNAL
240 BYS,VAR=0 :: CALL CLEAR
250 PRINT "READING CREF FILE
... PLEASE WAIT"
260 INPUT #1:A$ :: INPUT #1:
LINES :: NSV$="@$" :: NNV$="
@"
270 FOR LINE=1 TO LINES :: I
NPUT #1:A$ :: INPUT #1:B$ ::
 ON ASC(A$)GOSUB 430,450 ,47
0,490,560,560,560,510,560
280 NEXT LINE :: IF EOF(1)=0
 THEN GOTO 260 ELSE CLOSE #1
 :: OPEN #1:OF$,VARIABLE 163
,OUTPUT :: OPEN #2:UF$,VARIA
BLE 163,INPUT
290 LINPUT #2:X$ :: IF X$=EO
F$ THEN PRINT #1:X$ :: CLOSE
 #1 :: CLOSE #2 :: GOTO 350
300 DISPLAY AT(22,1):USING "
COMPACTING LINE #####...":AS
C(X$)*256+ASC(SEG$(X$,2, 1))
310 FOR LINE=1 TO VAR :: X=P
OS(V$(LINE,3),SEG$(X$,1,2),1
)-1 :: IF X/2<>INT(X/2)THEN
330 ELSE A$=V$(LINE,1):: W=3
320 GOSUB 530 :: IF B THEN X
$=SEG$(X$,1,B-1)&V$(LINE,2)&
SEG$(X$,W,255):: X=LEN(V $(L
INE,1))-LEN(V$(LINE,2)):: W=
W-X :: BYS=BYS+X :: GOTO 320
330 NEXT LINE :: PRINT #1:X$
 :: GOTO 290
340 REM PRINT CHANGES?
350 PRINT USING "I'M DONE. I
'VE CUT ###### BYTES OFF YOU
R PROGRAM, OR #.## K":BYS,BY
S/1024
360 INPUT "SHALL I PRINT THE
CHANGES    I'VE MADE TO YOUR
 PROGRAM?  (Y/N) ":X$ :: IF
SEG$(X$,1,1)<>"Y" THEN END
370 PRINT "SHALL I PRINT THE
 CHANGES TO1. THE SCREEN" ::
 INPUT "2. AN EXTERNAL DEVIC
E":X :: IF X=1 THEN F=0 :: G
OTO 390
380 INPUT "FILENAME OF THE D
EVICE ? ":X$ :: OPEN #1:X$ :
: F=1
390 CALL CLEAR :: PRINT #F:"
OLD NAME","NEW NAME" :: FOR
X=1 TO VAR :: PRINT #F:V $(X
,1),V$(X,2):: CALL KEY(3,K,S
):: IF S<1 THEN 410
```

```
400 CALL KEY(3,K,S):: IF S<1
 THEN 400
410 NEXT X :: IF F THEN CLOS
E #1 :: END ELSE END
420 REM STRING ARRAYS
430 A$=SEG$(A$,1,POS(A$,"(",
1)-1):: GOTO 470
440 REM NUMERIC ARRAYS
450 A$=SEG$(A$,1,POS(A$,"(",
1,-1):: GOTO 490
460 REM STRING VARIABLES
470 VAR=VAR+1 :: V$(VAR,1)=S
EG$(A$,2,255):: V$(VAR,2)=NS
V$ :: V$(VAR,3)=B$ :: CALL I
NC(NSV$):: RETURN
480 REM NUMERIC VARIABLES
490 VAR=VAR+1 :: V$(VAR,1)=S
EG$(A$,2,255):: V$(VAR,2)=NN
V$ :: V$(VAR,3)=B$ :: CALL I
NC(NNV$):: RETURN
500 REM USER FUNCTIONS
510 IF SEG$(A$,LEN(A$),1)=")
" THEN A$=SEG$(A$,1,LEN(A$)-
2)
520 IF SEG$(A$,LEN(A$),1)="$
" THEN 470 ELSE 490
530 B=POS(X$,A$,W):: IF B=0
THEN RETURN ELSE Y=POS(X$,CH
R$(199),W):: Z=POS(X$,CH R$(
200),W):: IF Y AND Z THEN Y=
MIN(Y,Z)ELSE IF Z THEN Y=Z
540 IF Y AND B>Y THEN W=2+Y+
ASC(SEG$(X$,Y+1,1)):: GOTO 5
30 ELSE W=B+LEN(A$)
550 Y=ASC(SEG$(X$,W,1)):: Z=
ASC(SEG$(X$,B-1,1)):: IF (Y>
127 OR Y=0)AND(Z>127 OR Z<12
7 OR B-1=2)THEN RETURN ELSE
530
560 RETURN
570 SUB INC(A$):: A=LEN(A$):
: B$="" :: IF SEG$(A$,A,1)="
$" THEN A=A-1 :: B$="$"
580 IF SEG$(A$,A,1)="Z" THEN
 A=A-1 :: A$=SEG$(A$,1,A)::
B$="@"&B$ :: IF A THEN 80 EL
SE 600
590 A$=SEG$(A$,1,A-1)&CHR$(A
SC(SEG$(A$,A,1))+1)&B$ :: GO
TO 610
600 A$="@"&B$
610 SUBEND
```

```
100 REM Younger Set Code
110 REM     program.
120 REM
130 REM in Extended Basic
140 REM
150 REM  by Brian Grinter
160 REM
170 REM   October 1985
180 REM
190 DISPLAY AT(12,2)ERASE AL
L BEEP:"DO YOU WISH TO CONVE
RT ":"1)PHRASE TO CODE OR
      2)CODE TO PHRASE?"
200 CALL KEY(0,K,S):: IF S=0
 THEN 200 ELSE IF K=49 THEN
CALL CODE ELSE IF K=50 THEN
CALL PHRASE ELSE 200
210 GOTO 190
220 DATA "A","12","B","7","C
","20","D","3","E","24","F",
"9","G","15","H","11","I","1
7","J","1","K","5"," "," "
230 DATA "L","13","M","6","N
","23","O","8","P","14","Q",
"2","R","16","S","21","T","2
6","U","18","V","27","W","19
","X","10","Y","4","Z","22"
240 SUB CODE
250 DISPLAY AT(12,1)ERASE AL
L BEEP:"ENTER PHRASE PLEASE
:" :: ACCEPT AT(13,1)SIZE(28
)VALIDATE(UALPHA):A$
```

```
260 FOR T=1 TO LEN(A$):: X$=
SEG$(A$,T,1)
270 RESTORE 220 :: FOR TD=1
TO 52 :: READ B$ :: IF B$=X$
 THEN 290 ELSE 280
280 NEXT TD
290 READ C$ :: PRINT C$;:: P
RINT ",";
300 NEXT T
310 DISPLAY AT(12,1)BEEP:"PR
ESS ANY KEY TO RETURN      ":
" "
320 CALL KEY(0,K,S):: IF S=0
 THEN 320 ELSE 330
330 SUBEND
340 SUB PHRASE :: CALL CLEAR
350 DISPLAY AT(12,1)BEEP:"EN
TER NUMBER PLEASE:":"(NOTE,0
 TO END)" :: ACCEPT AT(14,1)
VALIDATE(DIGIT):A
360 IF A=25 OR A>28 THEN 350
 :: IF A=0 THEN 420
370 DATA 12,"A",7,"B",20,"C"
,3,"D",24,"E",9,"F",15,"G",1
1,"H",17,"I",1,"J",5,"K"
380 DATA 13,"L",6,"M",23,"N"
,8,"O",14,"P",2,"Q",16,"R",2
1,"S",26,"T",18,"U",27,"V",1
9,"W",10,"X",4,"Y",22,"Z"
390 RESTORE 370 :: FOR L=1 T
O 51 STEP 2 :: READ Q :: REA
D B$ :: IF Q=A THEN GOTO 410
 ELSE 400
400 NEXT L
410 PRINT B$;:: GOTO 350
420 DISPLAY AT(12,1):"PRESS
ANY KEY TO RETURN":" ":" "
430 CALL KEY(0,K,S):: IF S=0
 THEN 430 ELSE 440
440 SUBEND
```

```
100 REM CODE ENCODER
110 REM BY KEVIN WATTS
120 REM TISHUG MEMBER
130 REM  4/10/85
140 DATA 9,3,16,26,8,19,21,1
3,23,2,14,7,24,10,20,12,4,1,
11,17,6,22,15,5,25,18
150 A=1
160 CALL CLEAR
170 PRINT "DO YOU NEED INSTR
UCTIONS ?"
180 CALL KEY(3,K,S)
190 IF S=0 THEN 180
200 IF K=89 THEN 230
210 IF K=78 THEN 380
220 GOTO 180
230 PRINT : : :"  SECRET COD
E PROGRAM !": :" This progra
m redefines the":"standard k
eyboard, so that"
240 PRINT "instead of typing
 letters":"you type numbers.
":" This can be used to send
":"secret messages to your "
250 PRINT "friends. Only peo
ple who ":"know the code can
 read the":"message. ":" you
 can change the code as"
260 PRINT "often as you like
, simply":"by changing the n
umbers in":"line 140. The fi
rst number"
270 PRINT "will be the lette
r A, the":"second number is
the letter":"B, etc."
280 PRINT " After typing one
 letter":"wait until after t
he noise":"before typing the
 next":"letter."
290 CALL KEY(3,K,S)
300 IF S=0 THEN 290
310 PRINT : : : : : :" You w
ill have to wait":"longer if
 the letter is":"closer to Z
.":" If you have a printer y
ou":
320 PRINT "can have the mess
age ":"printed as it is crea
ted.":" The only keys you ca
n use "
330 PRINT "are the letter ke
ys, the":"space bar and the
ENTER key.":" Any other keys
":"have no effect. To return
 to"
340 PRINT "the start of the
next line,":"press ENTER onc
e. To ":"exit the program or
 start"
350 PRINT "another message,
press":"ENTER twice.": : :
360 CALL KEY(3,K,S)
370 IF S=0 THEN 360
380 CALL CLEAR
390 PRINT "DO YOU HAVE A PRI
NTER"
400 CALL KEY(3,X,S)
410 IF S=0 THEN 400
420 IF X=89 THEN 450
430 IF X=78 THEN 480
440 GOTO 400
450 INPUT "WHAT IS THE PRINT
ER NAME ?   ":Z$
460 OPEN #1:Z$,OUTPUT
470 PRINT #1:" CODED MESSAGE
 PROGRAM"
480 CALL CLEAR
490 PRINT "TYPE MESSAGE NOW"
: :
500 CALL SOUND(100,3500,0)
510 CALL KEY(3,K,S)
520 IF S=0 THEN 510
530 IF K=13 THEN 750
540 IF K=32 THEN 810
550 IF K>90 THEN 510
560 IF K<65 THEN 510
570 GOTO 660
580 IF A=3 THEN 600
590 GOTO 510
600 PRINT : :" USE AGAIN ?"
610 CALL KEY(3,K,S)
620 IF S=0 THEN 610
630 IF K=89 THEN 150
640 IF K=78 THEN 850
650 GOTO 610
660 FOR N=1 TO K-64
670 READ P
680 NEXT N
690 PRINT P;
700 IF X<>89 THEN 720
710 PRINT #1:P;
720 RESTORE
730 A=1
740 GOTO 500
750 CALL SOUND(100,5000,0)
760 PRINT
770 IF X<>89 THEN 790
780 PRINT #1
790 A=A+1
```

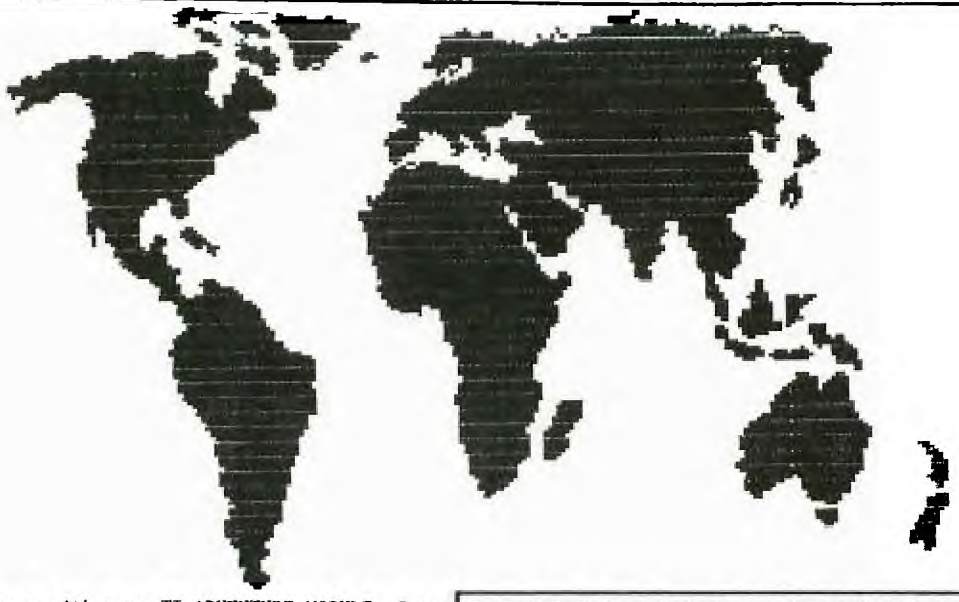
```
800 GOTO 580
810 PRINT " 32 ";
820 IF X<>89 THEN 840
830 PRINT #1:" 32 ";
840 GOTO 500
850 IF X<>89 THEN 870
860 CLOSE #1
870 END
```

```
100 REM CODE DECODER
110 REM BY KEVIN WATTS
120 REM TISHUG YOUNGERSET
130 REM 7/10/85
140 CALL CLEAR
150 DATA 9,3,16,26,8,19,21,1
3,23,2,14,7,24,10,20,12,4,1,
11,17,6,22,15,5,25,18
160 PRINT "DO YOU NEED INSTR
UCTIONS ?"
170 CALL KEY(3,K,S)
180 IF S=0 THEN 170
190 IF K=89 THEN 220
200 IF K=78 THEN 340
210 GOTO 170
220 PRINT : : :"  DECODER FO
R SECRET CODE":"          PRO
GRAM !": :" This program acc
epts":"numbers, and then cha
nges"
230 PRINT "the numbers to le
tters, to":"be printed on th
e screen or":"to a printer.
To change the"
240 PRINT "code change the n
umbers in":"line 150. The fi
rst number":"is the letter A
, the second"
250 PRINT "is the letter B,
etc.":" If used with the cod
er ":"program the two data":
"statements must be the same
"
260 PRINT "otherwise, the co
de will not":"make sense.":"
 The numbers allowed are":"f
rom 1-26, 32(space),and"
270 PRINT "instead of enter
the number":"50 is used. "
280 CALL KEY(3,K,S)
290 IF S=0 THEN 280
300 PRINT : : : : : : : : : :
: :" To exit the program o
r":"start another message, t
ype"
310 PRINT "the number 50 two
 times in":"a row, otherwise
 a new line":"will start.":
: : : : : :
320 CALL KEY(3,K,S)
330 IF S=0 THEN 320
340 PRINT "DO YOU HAVE A PRI
NTER"
350 CALL CLEAR
360 CALL KEY(3,X,S)
370 IF S=0 THEN 360
380 IF X=89 THEN 410
390 IF X=78 THEN 440
400 GOTO 360
410 INPUT "WHAT IS THE PRINT
ER NAME ?  ":Z$
420 OPEN #1:Z$,OUTPUT
430 PRINT #1:"MESSAGE DECODE
R PROGRAM"
440 PRINT :"TYPE THE CODE FO
R ONE LETTER AT A TIME."
450 C=1
460 B=1
470 RESTORE
480 INPUT "NUMBER ":A
490 IF A=50 THEN 670
500 IF A=32 THEN 620
510 IF A<1 THEN 480
520 IF A>26 THEN 480
530 READ P
540 B=B+1
550 IF P=A THEN 570
560 GOTO 530
570 PRINT TAB(10);CHR$(B+63)
580 IF X<>89 THEN 600
590 PRINT #1:CHR$(B+63);
600 C=1
610 GOTO 460
620 PRINT TAB(10);"SPACE"
630 IF X<>89 THEN 650
640 PRINT #1:" ";
650 C=1
660 GOTO 460
670 PRINT
680 IF X<>89 THEN 700
690 PRINT #1
700 C=C+1
710 IF C=3 THEN 730
720 GOTO 460
730 PRINT "DO YOU WANT TO US
E AGAIN ?  "
740 CALL KEY(3,K,S)
750 IF S=0 THEN 740
760 IF K=89 THEN 440
770 IF K=78 THEN 790
780 GOTO 740
790 IF X<>89 THEN 810
800 CLOSE #1
810 END
```

```
100 ! ***************
110 ! ***X.B. TRON***
120 !       BY
130 ! MATHEW  BRYSON
140 ! FROM  A.T.I.C.C
150 ! ***************
160 !
170 CALL CLEAR :: SCORE=0 ::
 SHIP=3 :: TM=500 :: RANDOMI
ZE
180 CALL SCREEN(12):: CALL C
HAR(42,"003C66FF5A424266")
190 DISPLAY AT(8,8):"*    TR
ON    *"
200 DISPLAY AT(14,7):"BY MAT
HEW BRYSON"
210 FOR I=1 TO 400 :: NEXT I
220 CALL SOUND(500,-3,2):: C
ALL SOUND(500,-5,2):: CALL S
OUND(1000,-7,2)
230 CALL CHAR(42,"204C0264FF
5A4156")
240 FOR X=1 TO 1000 :: NEXT
X
250 PRINT "YOU ARE TRON AND
YOU MUST FIGHT THE SPACE PAR
ANOIDS. IF YOU LOSE, THE EAR
TH IS    LOST !!!!!!!!!!!!!"
260 PRINT "IF YOU WIN, THE M
CP IS DEAD!          GOOD LUC
K!!!!!!!!!!"
270 PRINT :: INPUT "PRESS EN
TER";E$
280 CALL CLEAR :: CALL MAGNI
FY(2)
290 CALL CHAR(33,"1818181818
181818")
300 CALL CHAR(35,"8040201008
040201")
310 CALL CHAR(42,"204C0264FF
5A4156")
320 CALL CHAR(43,"0102040810
204080")
330 CALL CHAR(46,"0000000000
0000FF")
340 CALL CHAR(96,"0808")
350 CALL CHAR(100,"181818181
8187EFF")
360 CALL CHAR(104,"204C0264F
F5A4156")
370 CALL CHAR(108,"AA55AA55A
A55AA55")
380 PRINT "          .........
...."
390 PRINT "          !      +#
   !"
400 PRINT "          !     +  #
   !"
410 PRINT "          !   +     #
   !"
420 PRINT "          !  +
#  !"
430 PRINT "          ! +
 #  !"
440 PRINT "          !+
  #!"
450 PRINT "          .......+
   #......."
460 DISPLAY AT(1,1):"DEAD PA
RANOICS=";0 :: DISPLAY AT(2,
1):"SHIPS REMAINING=";3
470 DISPLAY AT(3,1):"TIME=";
TM
480 CALL SPRITE(#1,100,16,17
2,128)
490 CALL CHAR(42,"003C66FF5A
424266"):: CALL SPRITE(#4,42
,7,127,128):: CALL MOTION(#4
,4,4)
500 CALL JOYST(1,X,Y)
510 TM=TM-1 :: DISPLAY AT(3,
1):"TIME=";TM :: IF TM<=0 TH
EN 700
520 CALL KEY(1,K,S):: IF K=1
8 THEN GOSUB 580
530 CALL MOTION(#1,0,5*X)
540 CALL COINC(#1,#4,8,XX)::
 IF XX<>-1 THEN 560
550 CALL PATTERN(#1,108,#4,1
04):: SHIP=SHIP-1 :: DISPLAY
 AT(2,1):"SHIPS REMAINING=";
SHIP :: IF SHIP=0 THEN GOSUB
 700 ELSE GOSUB 580
560 GOTO 500
570 STOP
580 CALL MOTION(#1,0,0)
590 CALL POSITION(#1,YY,XX)
600 CALL SPRITE(#2,96,2,YY+8
,XX,-35,0)
610 CALL COINC(#2,#4,5,ZZ)::
 IF ZZ=-1 THEN 640
620 CALL POSITION(#2,YYY,XXX
):: IF YYY<20 THEN CALL DELS
PRITE(#2):: GOTO 690
630 GOTO 610
640 CALL DELSPRITE(#2):: CAL
L PATTERN(#4,104):: SCORE=SC
ORE+1 :: DISPLAY AT(1,1):"DE
AD PARANOICS=";SCORE
650 FOR DEL=1 TO 250 :: NEXT
 DEL :: CALL DELSPRITE(#4)::
 FOR DEL=1 TO 500 :: NEXT DE
L
660 C=RND :: IF C<.5 THEN A=
-7 ELSE A=7
670 D=RND :: IF D>.5 THEN B=
-9 ELSE B=9
680 CALL SPRITE(#4,42,7,INT(
RND*150+10),INT(RND*230+10),
A,B)
690 CALL PATTERN(#1,100,#4,4
2):: RETURN
700 FOR DEL=1 TO 250 :: NEXT
 DEL
710 CALL DELSPRITE(ALL):: DI
SPLAY AT(10,2):"DO YOU WANT
TO PLAY AGAIN?" :: DISPLAY A
T(12,2):"Y/N"
720 CALL KEY(0,K,S):: CALL S
OUND(-1,880,10):: IF S=0 THE
N 720
730 IF K=89 THEN 170
740 IF K=78 THEN CALL CLEAR
:: STOP
750 GOTO 720
760 END
```

```
100 REM **********
110 REM *PIRANHAS*
120 REM **********
130 REM TI BASIC
140 RANDOMIZE
150 DIM X(20),Y(20),T(8)
160 DATA 0,0,1,-1,1,-1,0,0
170 FOR I=1 TO 8
180 READ T(I)
190 NEXT I
200 CALL SCREEN(6)
210 CALL CHAR(128,"3838BA92F
E3838FE")
220 CALL CHAR(129,"FFFFFFFFF
FFFFFFF")
230 CALL COLOR(13,2,6)
240 DATA 00395DFF7D390000,00
9CBAFFBE9C0000,7C10387C5C381
0,081C3A3E3E1C083E
250 FOR I=1 TO 4
260 READ G$
270 CALL CHAR(135+I,G$)
280 NEXT I
290 CALL CLEAR
300 CALL VCHAR(3,2,129,20)
310 CALL VCHAR(3,31,129,20)
320 CALL HCHAR(2,2,129,30)
330 CALL HCHAR(23,2,129,30)
340 CALL COLOR(14,16,6)
350 P=INT(RND*11)+10
360 G=0
370 FOR I=1 TO P
380 X(I)=INT(RND*28)+3
390 Y(I)=INT(RND*20)+3
400 CALL HCHAR(Y(I),X(I),136
+RND*3)
410 NEXT I
420 V=INT(RND*28)+3
430 W=INT(RND*20)+3
440 CALL GCHAR(W,V,C)
450 IF C<>32 THEN 420
460 CALL HCHAR(W,V,128)
470 REM ----------------
480 REM JEU
490 FOR I=1 TO P
500 IF Y(I)=0 THEN 970
510 CALL HCHAR(Y(I),X(I),32)
520 CALL SOUND(500,-8,0)
530 FOR J=1 TO 4
540 CALL GCHAR(Y(I)+T(J),X(I
)+T(J+4),C)
550 IF C=128 THEN 1010
560 IF (C>135)*(C<140)THEN 5
90
570 NEXT J
580 GOTO 660
590 Y(I)=0
600 CALL SOUND(500,-5,0)
610 G=G+1
620 IF G=P-1 THEN 1030
630 GOTO 970
640 REM ----------------
650 REM DEPLAC,PIRANHAS
660 IF Y(I)-W>0 THEN 780
670 IF Y(I)-W<0 THEN 750
680 IF X(I)-V>0 THEN 720
690 X(I)=X(I)+1
700 CALL HCHAR(Y(I),X(I),137
)
710 GOTO 820
720 X(I)=X(I)-1
730 CALL HCHAR(Y(I),X(I),136
)
740 GOTO 820
750 Y(I)=Y(I)+1
760 CALL HCHAR(Y(I),X(I),138
)
770 GOTO 820
780 Y(I)=Y(I)-1
790 CALL HCHAR(Y(I),X(I),139
)
800 REM ----------------
810 REM DEPLAC,EXPLORATEUR
820 CALL JOYST(1,DX,DY)
830 IF (DX=0)*(DY=0)THEN 970
840 CALL HCHAR(W,V,32)
850 DX=DX/4
860 DY=-DY/4
870 IF DY<>0 THEN 920
880 IF DX=0 THEN 940
890 IF (V+DX<3)+(V+DX>30)THE
N 940
900 V=V+DX
910 GOTO 940
920 IF (W+DY<3)+(W+DY>22)THE
N 940
930 W=W+DY
940 CALL GCHAR(W,V,C)
950 IF C<>32 THEN 1010
960 CALL HCHAR(W,V,128)
970 NEXT I
980 GOTO 490
990 REM ----------------
1000 REM FIN DE PARTIE
1010 RESTORE 1040
1020 GOTO 1060
1030 RESTORE 1050
1040 DATA 11,2,262,2,262,1,2
47,2,262,2,311,1,294,2,294,1
,262,2,262,1,247,3,262
1050 DATA 11,1,262,1,220,1,1
75,1,175,2,175,1,196,1,220,1
,247,1,262,1,262,3,262
1060 READ N
1070 FOR I=1 TO N
1080 READ D,F
1090 CALL SOUND(250*D,F,0,F*
2,5,F*4,5)
1100 FOR J=1 TO 25
1110 NEXT J
1120 NEXT I
1130 CALL KEY(1,A,B)
1140 IF B=0 THEN 1130
1150 GOTO 290
```

```
100 REM ***************
110 REM *KAMIKAZE PILOT*
120 REM ***************
130 REM TI BASIC
140 GOTO 170
150 SIDE=SIDE-1
160 GOTO 440
170 CALL CLEAR
180 PRINT "ENTER A NUMBER FR
OM 1 TO 9"
190 PRINT :"1 IS EASIEST, 9
IS HARDEST"
200 CALL KEY(3,KY,KK)
210 IF KK=0 THEN 200
220 GOTO 480
230 Y=10*Y
240 CALL CLEAR
250 SC=0
260 GOSUB 600
270 SIDE=16
280 DOWN=16
290 CALL GCHAR(17,SIDE,X)
300 IF X=65 THEN 740
310 CALL HCHAR(DOWN,SIDE,66)
320 FOR T=1 TO Y
330 NEXT T
340 D=INT(D+RND*3-RND*3)
350 IF D<3 THEN 660
360 IF D>29 THEN 680
370 CALL HCHAR(DOWN,SIDE,32)
380 PRINT TAB(D);"A        A"
390 PRINT TAB(D);"A        A"
400 SC=SC+27
410 CALL KEY(3,KY,KK)
420 IF KK=0 THEN 150
430 SIDE=SIDE+2
440 IF SIDE<4 THEN 700
450 IF SIDE>28 THEN 720
460 GOTO 290
470 END
480 Y=-(KY=131)
490 Y=-2*(KY=132)
500 Y=-3*(KY=135)
510 Y=-4*(KY=130)
520 Y=-5*(KY=142)
530 Y=-6*(KY=140)
540 Y=-7*(KY=129)
550 Y=-8*(KY=134)
560 Y=-9*(KY=143)
570 CALL CLEAR
580 CALL SCREEN(5)
590 GOTO 230
600 A$="49221C08493E1C08"
610 B$="0810202018040810"
620 CALL CHAR(66,A$)
630 CALL CHAR(65,B$)
640 D=10
650 RETURN
660 D=3
670 GOTO 380
680 D=29
690 GOTO 380
700 SIDE=4
710 GOTO 440
720 SIDE=28
730 GOTO 460
740 PRINT : :"THE END!!"
750 CALL HCHAR(DOWN,SIDE,66)
760 CALL SOUND(2000,440,2,65
9,2,880,2)
770 CALL SOUND(2000,-2,2)
780 PRINT : :
790 PRINT "YOU SCORED";SC
800 FOR T=1 TO 1000
810 NEXT T
```



I N T E R N A T I O N A L S H O P P I N G

-World map designed with GRAPHX by M. Cummins- of Younger Set

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OUTPUT CHANNELS . . 2 or 4
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ENVOLOPE CONTROL. . Amplitude upasdated 60 times/second in a range of 0-15
VISUAL FEEDBACK . . Amplitude and Pitch of all voices dynamically displayed. Current measure number may also be displayed
EDITOR DISLAY . . . 64 column(monitor recommended)by 16 rows

PRICE: $199.95 (u.s) from TEXAS PERIPHERALS INC. 624 Sorita. Rockwell. Texas. U.S.A. 75087

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This example is made in Extended basic...

```
100 CALL SOUND(110,262,1) :: CALL SOUND(110,330,1) :: CALL SOUND(110,392,1) :: CALL SOUND(298,528,1) :: CALL SOUND(95,392,1) :: CALL SOUND(350,523,1)
```

This SOUND ADVICE comes from the Deleware Valley Users Group. Wilmington. U.S.A.

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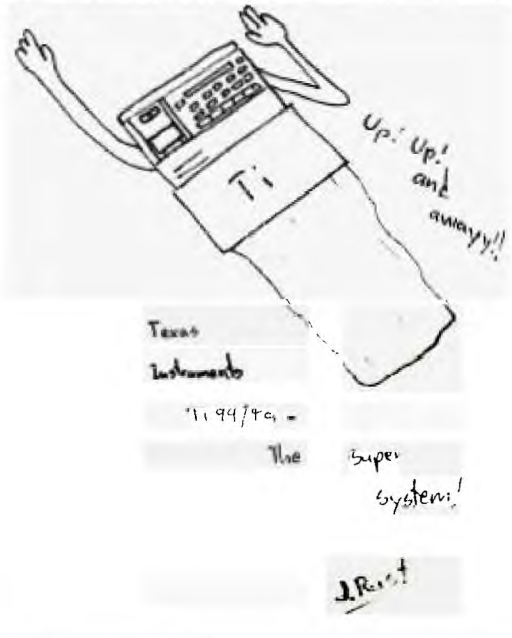
==========
=MYARC CARDS FOR THE TI=
==========

Review by Michael Black - TISHUG Younger Set

Two great new cards are now available for the TI 99/4A.

The first is a ram disk memory expansion card,availabe in two formats,and the second is a lightning fast triple format disk controller. The ram disk ---------- Available in 32/128K for US$229.95, or 32/512K for US$329.95. Both these cards sport the following commands and features. CALL ABPS/1 OR /2 - Print spooler command allows print spool (buffer) operation to RS232 serial printer. CALL SPPIO - Same as above only for parallel printer. CALL RDDIR - Catalogue RAM disk files (similar to cataloging a disk drive). CALL EMDKI(1) - Instructs RAM disk to emulate disk drive 1 for auto booting of program stored in memory like TI-Writer. CALL EMDKI(0) - Turns off EMDKI(1) command. CALL VOL("small volume name") - Allows directories and sub-directories to file on the RAM disk. Also obtains all directories in the RAM disk. * The only TRUE RAM disk avialable for the TI 99/4A computer, offering high speed load and execution, mass data and file storage. Complete high speed file manipulation plus 100% compatability, make this unit the most sought after peripheral ever offered. * May be purchased as a normal 32K memory expansion card and upgraded to a RAM disk at a later time. * The card includes 32K of memory expansion RAM that is 100% compatiable to all TI software. The Disk Controller ---------- Availabe for US$174.95. * Read or write in three formats. -Standard single density -Standard double density -Non-standard double density * Much faster than original equipment. Faster than competitive units. * New commands greatly enhance the operating system. CALL DIR (X) - allows cataloging any of four drives without overwriting memory CALL LR - Emulates call load command CALL LLR - Emulates call link command CALL ILR - Emulates call init command * Track access time can be set for any of the four drives. This allows the user to take advantage of the new 6ms units for speed. * Includes cabling,manual and disk manager. * Myarcs Level III disk manager allows flexability and features that are unsurpassed!F * Single key operation * Fast copy for high speed duplicating. * Single stroke file handling. * Editor/Assembler load and run screen. * Formats in single sided and double sided, single and double density, and non-standard formats. WHERE CAN YOU GET THESE TWO GREAT CARDS I HEAR YOU ASK? SIMPLE: COMPUTRONICS of St. Petersburg. 6975 17th Street North St. Petersburg Florida 33702 NOTE: All prices do NOT include shipping and handling and are in US dollars.



DATA BASE MANAGEMENT (NAVARONE)

A review by Chris Buttner -TI.SHUG.

REQUIREMENTS:

Disk System; Printer (Optional but recommended).

The dictionary defines a data base as a store of a large amount of information especially in a form that can be handled by a computer. When assessing any data base it is important to consider 3 aspects:-

.Speed
.Ease of use, and
.Versatility.

SPEED:

Is DBM fast? Yes - no ifs, no buts.

It is the fastest integrated data base I have seen for the 99/4A. Depending on the size of your data file, the sort will be done in either RAM or on disk using temporary files which are automatically deleted by the module.

Adding to, deleting or editing individual data entries is likewise fast. One point worth remembering - always leave sufficient space on your disk for the module to create temporary sort files.

The sort routine is very powerful. You are allowed one selection mask (to accept or reject entries equal to or not equal to data in the field) and up to 6 nested sorts.

EASE OF USE:

It is impossible to consider these aspects in isolation because this is the "trade-off" area of the programme. Encounters of the first kind can be a little daunting so PLEASE read the manual (the revised one is well indexed and easy to read so don't be put off by anyone who has seen the preliminary manual).

True to name, the programme has no preconceived ideas of how your data should be recorded or printed. You design the input screen, identify fields and determine printing format. The only stipulations are each screen of data must not exceed 255 bytes and secondly no two key-fields can contain the same data (beware, the module recognises "" as data so you can't have two similar key-fields blank).

A very useful feature is the AID function. At setup time (or later) you can add 4 lines of text to each input field. It is completely free text and really customises your data base. Anyone pressing AID while the cursor is on an input field will see your free text message displayed at the bottom of the screen. Used in combination with input labels, it is an extremely powerful feature.

Have you ever wanted separate data bases containing a lot of common information? If so, this programme is for you. You have the ability to link a data file to more than one setup file. This also lets you "protect" parts of your data file from others who will not see it and therefore cannot modify or delete it.

Because you design the print format, you can print all or part of your data record. If you don't like the look of your report first time round, you can alter the layout by moving fields with the cursor much as you would with a mouse. The programme will print text messages in addition to what is contained in your data file even to writing form letters with leading and trailing spaces removed, and will also total numeric fields on printout.

The report screen also accepts control codes for sending to your printer. (Don't confuse these with other printer commands.)

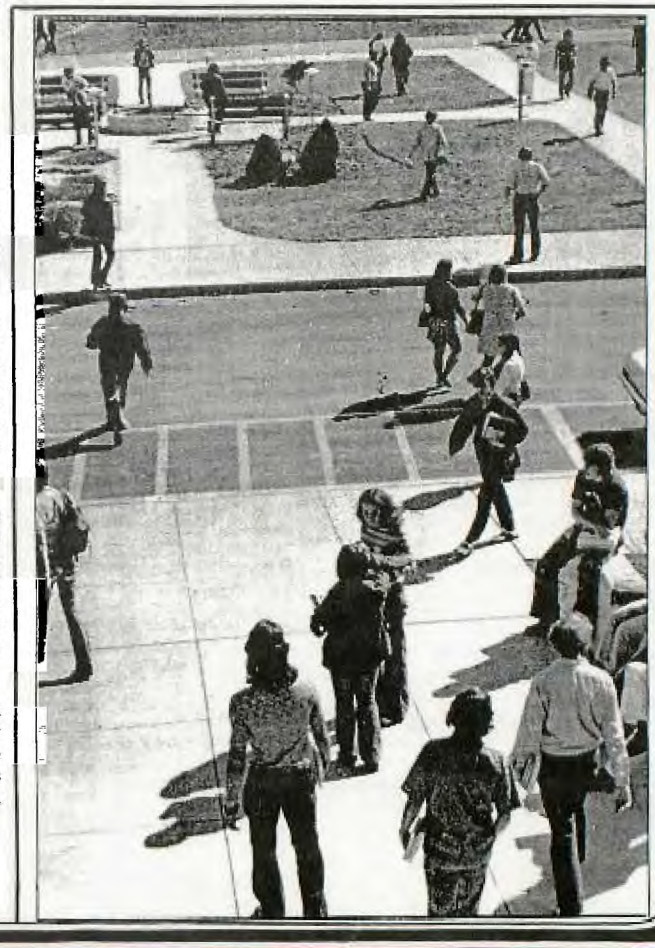
VERSATILITY:

Is it versatile? Yes. Is it easy to use? Once set up, yes, especially when explanatory messages are incorporated with the AID key.

With a little patience and the aid of the manual, you will master the setup procedures. You will then become painfully aware of the many shortcomings in so many other data bases for the TI. As with most things, plan what you want on paper before going near the computer and record the starting byte number and record length for each input field. You will have fewer setup errors and also have on tap all the information necessary to design your report format.

If it's that good, what won't it do? You can't do math calculations such as modifying the value in one field by the value in another. If this is what you require, then either stay with TI's Personal Record Keeping Module or write your own programme to manipulate parts of your original data file.

If you are after an efficient, versatile pure data base, wait no longer; it has arrived. If you get stuck, don't assume the programme can't do what you want - ask someone who has used it. Price in America is currently US$59.95 so you are well advised to try to purchase locally.



****
REVIEW COLUMN by Keir Wells (KEIRLALOR)
****

Before commencing on this month's reviews, I would like to apologize for not having a column prepared for last month's issue of the SND.

Therefore, succumbing to overwhelming waves of guilt and shame I will review three programmes this month that I hope will be of interest to all.

D-PATCH

D-Patch is a 'Disk Fixer' programme that was released by Texas Instruments as Public Domain Software and distributed to Users Groups.

It is a disk based Assembly Language programme but unfortunately comes with no documentation. In lieu of the missing documentation I suggest that if you intend using a 'Disk Fixer' programme, the article `DISK TALK', published in the August `85 edition SND is an excellent fill-in.

The programme itself is compact and effective and even if you are not seriously into Disk Fixing, can be used to provide some interesting effects.

Loaded with option 3 of the Editor Assembler module, enter START as the Programme Name. You will find yourself presented with a six (6) option menu:-

1. Disk Sector Editor
2. Search for Existing File
3. Transfer Between Disks
4. Burn out DSR ROM
5. Download Doulouge File
6. Resign/Go to Black Beach.

The first thing to do is completely forget about options 3, 4, 5 and 6. They are totally non-existent. I have been informed (whether accurately or not) that these options were placed there to provide evidence in the case of piracy! Can anyone verify that?

I will deal firstly with the Search for Existing File option as this will provide the information necessary to proceed with option 1.

After selecting option 2 from the main menu the programme will prompt for a Disk Drive number, the default being '1'. At the next prompt the File Name is required. After this information has been entered you will be given;

a. Location sector of file header,
b. File type,
c. Record type,
d. Write protection (Y/N),
e. Start sector,
f. End sector, and
g. File offset.

After the command has been carried out press FCTN 9 to return to the main menu or ENTER to search for another file.

If you have entered option 2 by mistake and wish to return to the main menu then press ENTER at the Drive prompt and again at the File Name prompt. The programme will then search Drive 1 for a non-existent file and return with 'FILE NOT FOUND'. Then press FCTN 9 for the main menu.

Armed now with all the relevant information, select option 1 from the menu for the Sector Editor. As before a prompt for a Drive number is required with a default of '1', and then a Sector Number, with default >000.

After entering the required information the programme will search the disk and display the sector contents, in HEX, on the screen. A single line cursor is positioned under the first character (top left) for editing the screen and sector.

In the Editor mode the following functions are available;

FCTN 1 - display HEX code.
FCTN 2 - display ASCII code.
FCTN 3 - exit the programme.
FCTN 4 - step back to previous sector.
FCTN 5 - return to Sector Editor option screen.
FCTN 6 - step forward to next sector.
FCTN 8 - rewrite sector.
FCTN 9 - return to main menu.

In order to rewrite a sector you must first alter the screen and THEN press FCTN 8. You will then be asked if you wish to rewrite the sector - (Y/N). The arrow keys, (FCTN E, S, D & X), can be used to move the cursor about the screen.

My one main criticism about D-PATCH is that it has no option for printing the screen, something available on most other 'Disk Fixer' programmes.

As I mentioned before I strongly suggest that this programme be used in conjunction with the article 'DISK TALK'.

HUNT THE WUMPUS

Bats, slime pits, caverns, twisting tunnels and... the WUMPUS!!

Those are the dangers confronting the brave and intrepid person who dares to HUNT THE WUMPUS! This cartridge based game is one of the ol' faithfuls in TI gaming. The idea of the game is to locate the Wumpus' lair and destroy him with your single arrow.

To find the Wumpus, an obvious prerequisite is to navigate through a maze of caverns that are linked together by a series of tunnels. When you start the game, all that is shown on the screen is a single cavern, circular in shape with exit directions also shown, and the hunter, being you, in the centre.

Using either the Joysticks or the arrow keys on the keyboard you commence your hunt through the dark and dismal depths.

As you proceed, each section of tunnel or cavern that you enter is displayed on the screen, providing you with a map of covered ground. Along the way you will be bound to eventually come across various clues, warnings and dangers.

You may find yourself in a cavern that has a large red spot in it. Beware, it is the blood of one of the Wumpus's previous victims. (Will you be the next?) This spot of blood signifies to the ever vigilant hunter that he is within two caverns of the Wumpus. The Wumpus' lair is surrounded on all sides by caverns also containing blood so it is best to `back off' and try to circumnavigate the suspected lair.

Blood stains aren't the only things that you could find in a cavern. Don't be surprised if you come across a sleeping bat. The first time that you enter the bat's domain it will continue sleeping undisturbed. Enter it a second time and you risk incurring its wrath. When awakened, the bat picks you up and drops you in a cavern of its choice. It may be the cavern of another bat, a slime pit or even the Wumpus's lair.

The slime pits are the other dangers that constantly confront the heroic hunter. Fortunately there are only two pits and they are flanked on two sides by caverns with what appear to be hollow walls. These serve as warnings that should indeed be heeded.

In order to destroy the Wumpus you will need to position yourself in a section of tunnel or a cavern that is directly adjacent to the Wumpus's lair. To fire your arrow, press the fire button or the Q key and then indicate, with the joystick or arrow keys the intended path of flight for the arrow.

Remember, you have only one arrow, and the penalty for missing the Wumpus is toO horrible to consider. Likewise, entering the cavern containing the Wumpus is equally as forbidding.

In order to make the game either more or less demanding you are able to make selections from two difficulty option menus. The first of these menus allows you to choose from:

1. Easy maze,
2. Hard maze, or
3. Pro maze,

The second menu then follows with:

1. Normal,
2. Blindfold,
3. Express, or
4. Blindfold & Express.

Selecting the type of maze required, you could find yourself confronted with either a simple maze with mostly short and straight tunnels or caverns that are linked together by tunnels that twist and weave and quite often lead back to the cavern that you just left.

The options on the second menu can really make a difference to the decisions that need to be made. Hunting under the Normal option, reflects on the descriptions already mentioned about the game. Blindfold and Express though, are two totally different matters.

If you decide to pursue the Wumpus in a blindfolded state, then you will only be shown the cavern or section of tunnel that you are presently occupying.

With the Express option you will be placed in the cavern adjacent to your positon depending on the direction indicated. Tunnels will not be indicated and you could well find yourself on the other side of the screen.

After the end of each hunt, a Tally Board is displayed, which shows the number of wins for the Hunter, the Wumpus and the Slime Pits. It also allows you to view the map of the last hunt, start again with the same options, change the options or leave the hunt.

* The graphics are hardly outstanding but I have found HUNT THE WUMPUS to be a well thought out and interesting game.

MUSIC MAKER (PART 1)

For all those who have always wanted to compose their own music but have never been bothered to do it by the numbers, then this is for you.

Music Maker is one of TI's many hitherto underrated modules. All any one will need is a copy of some sheet music, Music Maker, and a little patience.

After selecting Music Maker from the main menu the would-be maestro is presented with a delightful tune to set the mood and then the main menu is displayed.

1. Traditional Mode.
2. Sound Graphs.
3. Load Music.

If Traditional Mode is selected the programme will ask for several pieces of information, being, Flats (b), Sharps (#), Time signature (eg. 4/4) and Speed (1-30). All this information can be gained from your hard copy music.

After you have replied to these questions the first measure is displayed, ready for composition. The screen will display everything needed for novices and professionals alike. Two musical staffs are displayed, one for the treble and one for the bass. Any sharps or flats that were entered before will be shown in the correct positions on these staffs.

In the top right hand corner of the screen is displayed the current measure and underneath that are the various note and rest values. Further down from the notes and rests are several options which are available within the Traditional Edit Mode - DRAW, PLAY, COPY and ERASE.

To actually compose (or transpose) music to the measure, simply place the cursor, using Joystick No. 2 or the arrow and ENTER keys, over the '1' in the DRAW box. Then select the value of the note or rest required by once again using the arrows or joystick and press ENTER or FIRE. The selected note will appear in the middle C positon in the treble staff. Move the note to the required position and press FIRE. Continue like this until the first voice has been completed then move the cursor back to the DRAW box and position it over number 2 (only if there is more than 1 voice of course).

Repeat the procedure for voices 2 and 3 and you will have completed your first measure of music.

If at any time you wish to hear what you have composed so far within a measure, move the cursor to the PLAY box and select the voice you wish to have played. You will be able to select either voices 1, 2, 3 or A(ll).

Likewise, if you find that you have entered an incorrect voice then simply move the cursor to the ERASE box and select the voice that you wish to delete. Any other voice within that measure will remain unaffected.

A single note is just as easily removed or altered. By placing the cursor over the offending note, press the FIRE button or ENTER key until a cross (X) appears. This will erase the note and permit you to either select another position or move to the note selection area and select a different value.

When you wish to hear your complete composition or just a few of the measure, press FCTN 9 and the following menu will be displayed:

1. Edit
2. Play
3. Save
4. Print

Select option 2 and you will find that the programme's insatiable appetite for information has not been satisfied. You will need to input the speed, voice(s), transposition, start measure and end measure. If you wish to hear the music played a little higher than as composed then place a number from 1 to 11 at the transpose up prompt. Likewise transpose down for replaying at a lower level.

To return to the Edit mode, press 1 and then select the measure required for editing.

As with all data, it is advisable to Save it as you progress. Selecting option 3 will allow you to Save to either Disk or Cassette.

As will have been noticed, this is Part 1 of a review of this excellent module, so next month I will attempt to extoll the virtues of Sound Graphs.

BACK TO BASIC

by
Jane LaFlamme

While learning basic from the handy, dandy little books enclosed with my brand new beautiful toy some years back, I found ONE of the things that completely baffled me, was cassette files. No matter how I tried, it continued to elude me. With a shout of joy, I discovered that there was a user group, joined, and toddled off to an intermediate tutorial. Oh happy days, now I'll find out how to "file".

It had been running for some time; I had missed quite a bit; I sat there with my mouth hanging open; a whole new world opening up to me ; I didn't understand a word !

So I joined the beginners tutorial.... And thus it went for several weeks, two tutorials, more confusion, late, late, late nigths, trying to get a handle on this strange, new, exciting world that was unfolding before me.

Maybe you didn't get as hooked as I did but I just wanted to let you know that most of us have 'been there' at one time and we would like to help you now. We are finding that we are not receiving any feed-back from the beginners, or the cassette only users. We have heard only the negative... "You are becomming an elitist group." This is not our intention, talk to us, phone us; we need to hear from you!

Now here is a rock-bottom demostration on those 'dran' files:

Type in the following program, and save to cassette. Do not "RUN" it yet.

```
100 REM ****************
110 REM *CASSETTE FILES*
120 REM ****************
130 A$="CASSETTE FILE"
140 B$="WRITING DEMO #"
150 C=1
160 OPEN #1:"CS1",INTERNAL,O
UTPUT,FIXED
170 PRINT #1:A$,B$,C
180 CLOSE #1
190 END
```

Lines 100 to 120, self-explanatory.

Lines 130 to 150, establish a variable in memory that we can save in a file.

Line 160, tell the computer to open a file called #1 (This can be any number - from 1 to 255. "0" is the screen - try it sometime) and where to save it - CS1. We also want Tex to save it in internal format. Only Tex can "read" internal format, but who cares, we don't need to, yet. And finally we would like the computer to "OUTPUT" it from memory. You can only use FIXED format files. There is a number that can come after this but you can explore that later in the users manual.

Line 170, we have told the computer to open the file, now we want the it to write it on tape. This line does that.

Line 180, that is all we want to write out so now we tell the computer we're finished, close the link with file #1.

Line 190 optional.

Change the tape in your recorder. Its good practice to have one tape for your programs and another for your files. RUN the program and follow the prompts. Sounds a little different doesn't it?

So now we have some information only Tex can read on tape. Great ! But what the heck do we do with it. READ it of course. But how? We need another program.... Type in the following and save to your program tape:

```
100 *****************
110 *CASSETTE FILES *
120 *READ THE FILE *
130 *****************
140 OPEN #255:"CS1",INTERNAL
,INPUT,FIXED
150 INPUT #255:X$,Y$,Z
160 PRINT X$:Y$:Z
170 CLOSE #255
180 END
```

Lines 100 to 130, self explanatory.

Line 140, notice I have changed the file number. Tex doesn't remember that it was #1 the last time nor does he care. Internal format because only he is reading it at the moment, and input because we want him to put it into the console memory. Fixed for the same reason as before.

Line 150, ah, the variable names are changed .. for the same reason as above, he doesn't remember or care, just as long as they have the same attributes as they were written. X,Y$,Z$ would not work as you wrote two strings variables and then a numeric variable.

Line 160 so Tex now has it in memory but we need to read it; put it on the screen! This line does that. Of course, you could use different print separators. Try a ";" or "," inbetween the variables.

Lines 170, 180, shut down, we're finished.

Change from your program tape to the file tape and RUN the program. Voila! There's your information.

Play around with these two programs and experiment. You could combine them. Delete line 190 in the first program, renumber the second program starting with line 190 and add the following lines:

```
70 INPUT "WRITE THE FILE? Y/N":L$
80 IF L$="N" THEN 190
90 IF L$<"Y" THEN 70
```

Now if you feel adventurous, try your own programs. INPUT your own variables; put them into a FOR/NEXT loop, or an infinite loop that you can only get out of by inputing "END". If you do this, before you close, print END (or whatever you choose) to the file so the computer will know the end of the file when it is reading it. E.G.:

```
INPUT A$,B$,C
PRINT #1:A$,B$,C
IF A$="END" THEN (Close file line)
GOTO (Input line)
CLOSE #1
```

Don't forget to verify this in your read program. E.G.:

```
INPUT #255:X$,Y$,Z
IF X$="END" THEN (Close file line)
PRINT X$,Y$,Z
GOTO (Input line)
CLOSE #255
```

HAVE FUN FILING...

** I hope that this month's edition of Review Column has provided something of interest for all of our club members but please don't forget that if there is a particular programme or book that you wish to see reviewed in this column then either leave a message on our BBS to KEIRLALOR, write to:- REVIEW COLUMN, PO BOX 595, MARRICKVILLE, NSW, 2204, or call me on (02)816-3113.

** D-PATCH is available from the club shop on disk for $5. HUNT THE WUMPUS and MUSIC MAKER are, I believe, still available from COMPUTERWAVE.

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The security held against the loan of a publication to a member. The amount of the deposit will be set from time to time by the committee of TI-SHUG. The deposit is presently $20 - (Twenty Dollars).

Loan Period:

The loan period starts on the day of issue of the publication by the librarian and extends for twenty one (21) days thereafter. Note, that publications must be returned WITHIN the loan period.

Service Fee:

The costs incurred by the TI-PUBLIB librarian in packaging, posting, recovering and repairing any damage associated with lending a publication to a member. The service fee WILL be deducted from the deposit before its return to the member.

GENERAL:

I am sure that this facility has been long over due! Much information is available to members in the quest for knowledge about their TI.99/4A - now it will be possible for you to develop a greater understanding of the power of the TI!

I sincerely hope that some of the more punitive provisions of this set of rules never need to be used and that all members will participate in the spirit of friendship and common interest which will allow for the on going circulation of the available literature.

So, USE IT! DON'T ABUSE IT! OK?

Now, as promised, I have listed the currently held publications. At this point I would like to thank all who have already made donations to the library and to ask for more! Your support will be vital to the success of this new venture. The listing follows:-

PROCESSORS.

UNDERSTANDING MICROPROCESSORS. by Don L. Cannon and Gerald Lueke, Texas Instruments Learning Centre. 1979.

oooooo

For the newcomer to microprocessors - an in depth look at the magic of the solid state chips that are impacting our lives. Written in everyday language, ideal for self paced indiviual learning.

TMS 9900 MICROPROCESSOR. Microprocessor Series, Texas Instruments. 1978 reprinted 1982.

A data manual dealing with the TMS 9900 microprocessor. Covers the Architecture, Instruction set, Electrical and mechanical specifications, Prototyping system, Support circuits. Illustrated with tables.

TMS9918A/TMS9928A/TMS9929A VIDEO DISPLAY PROCESSORS. Microprocessor series, Texas Instruments. 1982.

A data manual. Covering the Architecture, VDP interfaces and operation, Device applications and Electrical specifications. Illustrations and tables.

TMS9901 PROGRAMMABLE SYSTEMS INTERFACE. Microprocessor series, Texas Instruments. 1978.

A data manual. Contents include Architecture, Applications, Electrical specifications and mechanical data. Illustrated with tables.

TMS9902A ASYNCHRONOUS COMMUNICATIONS CONTROLLER. Microprocessor series, Texas Instruments 1981.

A data manual. Contents include Description, Features and Typical applications. Illustrated with tables.

TMS5220A VOICE SYNTHESIS PROCESSOR. Microprocessor series (preliminary), Texas Instruments.

A data manual. Contents include Description, System interface, Theory of operation, Applications, Electrical and mechanical specifications. Illustrated with tables.

TMS32010 DIGITAL SIGNAL PROCESSOR. Development support, Texas Instruments. 1984.

A reference guide. Contents include Description, Evaluation module, Software support, Emulator, Analog interfacing, Documentation support, Applications workshops, Development support/part order information. Includes illustrations and tables.

REFERENCE GUIDES.

TI.99/4A USER'S REFERENCE GUIDE.

TI.99/4A EDITOR ASSEMBLER MANUAL.

TI.99/4A TERMINAL EMULATOR PROTOCOL MANUAL.

VIDEO DISPLAY PROCESSORS. A programmer's guide, Texas Instruments 1984.

Covers the TMS9918A/28A/29A and TMS9118/28/29 video display processors.

TECHNICAL MANUALS.

TI.99/4A TECHNICAL DATA MANUAL.

TI.PROFESSIONAL TECHNICAL DATA MANUAL.

GENERAL/PROGRAMMING/ENTERTAINMENT.

TANTALIZING GAMES FOR YOUR TI.99/4A. by Hal Renko and Sam Edwards, Addison-Wesly Publishing Co. 1983.

Contents: Short listings of games devised to give interesting and worthwhile results. Action, puzzles and board games.

SCHOOL DAYS for the TI.99/4A Computer. by Claire Bailey Passantino, Reston Publishing Company Inc. 1984.

Contents: Computer activities appealing to young/beginner programmers. Games, contests, races, pictures, designs, songs, riddles, charts, tests. Designed for fun, reinforces beginner computer concepts.

ENTERTAINMENT GAMES IN TI BASIC AND EXTENDED BASIC. by Khoa Ton and Quyen Ton, Howard W. Sams and Co., Inc. 1984.

Contents: Aims to provide an inexpensive way of obtaining arcade-type games and allows for learning both Basics whilst keying in the games.

GAMES FOR YOUR TI.99/4A. by Andrew Nelson, Virgin Books Ltd. 1984.

Contents: General description as above.

CREATIVE PROGRAMMING FOR YOUNG MINDS VOL 111. by Leonard Storm, CREATIVE programming Inc. 1982.

Contents: Learning to program. Covers random numbers(RND),INT, IF-THEN, INPUT, relational operators, math, CHAR etc. A basic lesson.

CREATIVE PROGRAMMING FOR YOUNG MINDS - YELLOW ALL STARS. CREATIVE programming Inc. 1981.

Contents: Exercises and problems after reading volume 111. Projects will require research. Beginner level.

UNDERSTANDING COBOL. by Richard G. Peddicord, Alfred Publishing Co., Inc.1981.

A short step by step instruction in the most widely used business programming language.

BEGINNERS BASIC. Texas Instruments, 1981.

Step by step hands on approach to learning the fun and power of programming in the TI Basic language.

In addition to the above I am holding all of the exchange newsletters which, committee willing will also become available for borrowing. Naturally, a few of the books referred to above are REFERENCE manuals and, as is the practice in the BIG libraries, these wil not be available for borrowing.

My next report will detail some of the costs you will incur when borrowing publications and a suitable publications order form which is to used. Till next time - happy computing.

Regards, Fred Morris.

FOR SALE FOR SALE FOR SALE

8x Editor/Assembler manuals	$20.00ea.
7x TI.99/4A User's Reference Guides	$ 7.50ea.
3x Beginner's Basic Guides	$ 7.50ea.

Orders to TI-PUBLIB, P.O.Box 149, Pennant Hills. 2120. include $2.00 for postage and packing.

MULTI PROGRAMMED BASIC

I bet you didn't know that in TI BASIC (with E/A plugged in) you can have numerous programs in memmory at the same time.

By now you are probably asking "How?". Well its all to do with TI BASIC Operating System's use of the Free Memory pointer, how it decides where to load a program and how it knows if a program is in memeory.

After we learn all these titbits, we'll learn how to trick the computer to hold three programs on our demand AND save all three to one single disk file ready to run again.

Where Do We Start?

If we were a computer we would probably start at the first free space in memory. And thats just where we will begin our study of the TI.

In TI-BASIC the first free address in VDP RAM is 14295. The space from 14296 to 16383 is taken up by the disk operating system (DOS). This free memory marker is stored in the CPU RAM pad at address -31952 and at -31950. Why in both places? It has to do with how the TI can tell if a program is already in memory.

The TI stores the entire line number set in one place. It keeps track of the start of the Line Number Table (-31952) and the end of it (-31950). Whenever the user types RUN, LIST or SAVE the Operating System checks those two addresses. If they are equal then the Line Number Table is empty- there is no program present! Or at least thats what TI-BASIC thinks and gives you a honk and a "CAN'T DO THAT".

So What Does NEW Do

Now this might come as a shock to you but when you type NEW the Operating System simply (and only) blanks out the Line Number Table. It checks for the highest available memory (usually 14295) and places that at the bginning marker(-31952) and ending marker (-31950). The system does NOT erase your program from memory! So with the right values you can restore your program after NEW.

An Unforgetable Experience

As an illustration of how the Line Number Table pointers works, lets type in the following in TI-BASIC (with E/A plugged in):

First, in Command Mode type:

```
NEW
CALL INIT
CALL PEEK(-31952,A,B,C,D)
PRINT A;B;C;D
```

You should get the values:
55,215,55,215

This shows the Line Number Table is empty. If you LIST TI will honk and say CAN'T DO THAT.

Now enter the following short program:

(NOTE PLEASE: for all these programs EVERY byte counts so do not take short cuts such as skipping REMs as this will put the Line Number Table pointers off.)

```
100 CALL CLEAR
110 CALL SOUND(150,1400,0)
120 PRINT "I'M HERE!"
130 PRINT
140 STOP
```

Now lets check out the Line Number Table markers. In Command Mode type:

```
CALL PEEK(-31952,A,B,C,D)
PRINT A;B;C;D
```

You should get the values:
55,138,55,157

Now the computer knows that there is a program present and that its Line Number Table starts at 14218 and runs to 14237. If you type RUN the program will beep and announce its presence.

Now type NEW (don't worry). If you try to RUN or LIST your program you are told CAN'T DO THAT and chilled with TI's infamous honk.

But don't fret, just type:

```
CALL LOAD(-31952,55,138,55,157)
```

and then type RUN. See...
Now TI thinks there's a program again!

Just Put It Anywhere

There's nothing sacred about putting the program high up in the memory. In fact, you can put it anywhere you wish as long as you tell the TI where to find it. Lets try another short example:

1) Type NEW
2) In Command Mode type:

```
CALL LOAD(-31952,27,215,27,215)
```

3) Enter a short program:

```
100 CALL CLEAR
110 PRINT "I'M SHORT"
120 STOP
```

Now try saving this extremely short program to disk. Catalog it. What happens?

How Big Is It?

The TI SAVE command saves your program in "memory image" format. As the name suggest it saves your program byte for byte, exactly as it appears in the VDP, straight to disk. Also, the SAVE command ALWAYS starts at the top available memory no matter where the Line Number Table Starts.

This means in the above example the TI saved every byte from 16383 to 7100! Quite a few bytes for such a small prgram.

This may seem like an annoying flaw, but it is a great opportunity for TI-Hacking.

Stuffing The TI

Since the computer doesn't really care where you start the Line Number Table and since the system never really erases memory, just changes the table markers and since the TI can only keep its "eyes" on one program at a time we can use a few tricks to stick more than one program into VDP RAM at the same time. In fact, thats what we'll do:

1) Enter two programs into the VDP RAM area at two different locations.
2) Enter a third "Master" program at a third location.
3) Use the "Master" program to move to and from each of the other two programs on demand.
4) Save the entire mess to disk under one file name.

Example Programs

REMEMBER: every byte counts.

1) Turn the power off/on.
2) Select TI-BASIC with E/A in place.
3) Type NEW and CALL INIT.
4) Enter the following program:

```
100 REM *PROGRAM ONE*
110 REM
120 CALL CLEAR
130 CALL SCREEN(15)
140 CALL SOUND(150,1400,0)
150 PRINT TAB(9):"PROGRAM ONE"
160 FOR L=1 TO 10
170 PRINT
180 NEXT L
190 CALL LOAD(-31952,44,55,44,130)
200 STOP
```

5) Now, lets find the start and end of the Line Number Table for this program. Type in Command Mode:

```
CALL PEEK(-31952,A,B,C,D)
PRINT A;B;C;D
```

You should get these values:

```
55 9 55 52
```

If you didn't, check your listing carefully- there's probably and extra or missing character (like a space), etc. Just go back and edit the offending line, you don't have to retype the whole program.

6) Now lets trick the TI into thinking the program does not exist. Let's also set up a new area in VDP RAM for the second program. In command mode type:

```
CALL LOAD(-31931,50,215,50,215)
```

Just for kicks, type LIST...

Be sure you type these values and not some other ones! If you are not sure you typed the right ones use CALL PEEK at the same address to check those four important values.

If its OK, then we are ready to type our second program.

7) Now enter the following program (yes, start with line 100 again):

```
100 REM *PROGRAM TWO*
110 REM
120 CALL CLEAR
130 CALL SOUND(150,700,0)
140 PRINT TAB(9):"PROGRAM TWO"
150 FOR L=1 TO 10
160 PRINT
170 NEXT L
180 CALL LOAD(-31952,44,55,44,130)
190 STOP
```

8) After you have entered program #2, check for the current location of the Line Number Table:

```
CALL PEEK(-31952,A,B,C,D)
PRINT A;B;C;D
```

If there are no errors, you should get these values:

```
50 31 50 70
```

9) We are now ready to write the master program that will allow us to move from one program to the other.

First lets set up a new Line Number Table area:

```
CALL LOAD(-31952,45,215,45,215)
```

10) Enter our master program:

```
100 REM *MASTER PROGRAM*
110 REM
120 CALL CLEAR
130 CALL SOUND(150,110,0)
140 CALL SOUND(150,440,0)
150 CALL SOUND(150,220,0)
160 CALL SOUND(150,110,0)
170 REM
180 PRINT "MASTER PROGRAM"
190 PRINT "=============="
200 PRINT
210 PRINT
220 PRINT
230 INPUT "WHICH PROGRAM (1 OR 2)? ":P
240 IF (P<>1)*(P<>2) THEN 230 250 IF P=2 THEN 270
260 CALL LOAD(-31952,55,9,55,52)
270 CALL LOAD(-31952,50,31,50,70)
280 STOP
```

11) Check the location of the Line Number Table:

```
CALL PEEK(-31952,A,B,C,D)
PRINT A;B;C;D
```

You should see:

```
44,55,44,130
```

12) To save all this together as one file just type SAVE DSK1.MASTER (or whatever). All three programs will be saved to disk and will be available when you load this file next time.

The Critical Test

Now lets see if your programs run. Make sure your line number table is set to the MASTER program- CALL LOAD(-31952,44,55,44,130). Now type RUN.

You will be asked to select prgram one or two. Select program one.

When the master program signals it is *DONE* , type LIST. You should now be looking at a listing of PROGRAM ONE- not the MASTER!

Now type run again. After PROGRAM ONE is finished immediately type RUN. Yes you just ran the MASTER PROGRAM again!

If you are getting screen lockup, weird error messages like SYNTAX ERROR IN LINE 0, etc. then there is a mistake in the loads. The computer will blindly accept ANY values placed into address -31952 as valid Line Number Table markers. When you type LIST, your TI will try its best to "list" whatever the table points to.

So What Now?

There are quite a few possibilities for use of this TI quirk. If someone could figure out how to get these various programs to AUTO-RUN we'd have a TI-BASIC "CHAIN" command similar to the X-BASIC statement RUN "DSK1.FRED". Of course, you can store more meaningful programs than we have here. And it works in X-BASIC too!.

Retyped by Steven Shraibman from The Computer Voice, the official news letter of the Southern California Computer Group.

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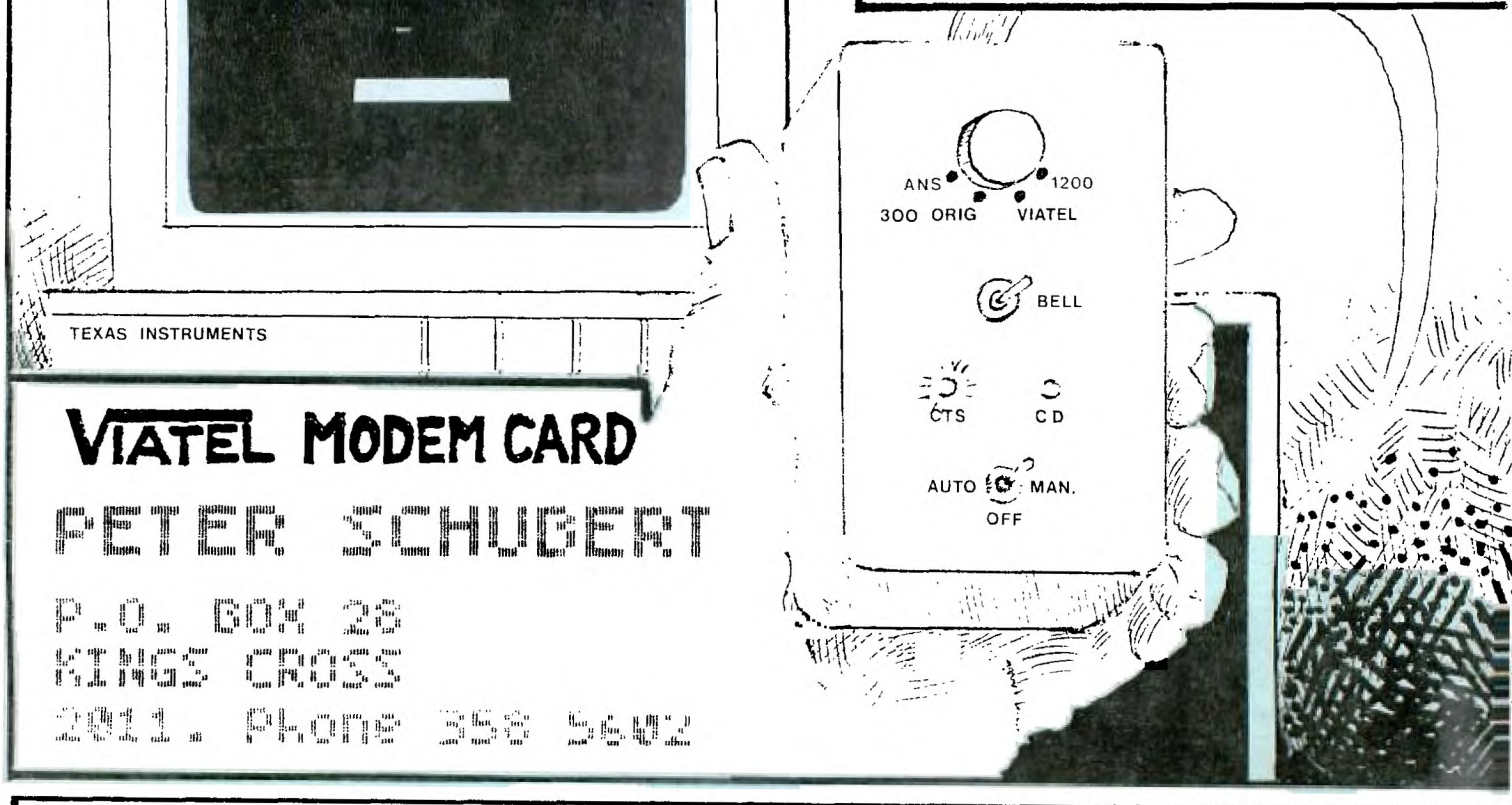

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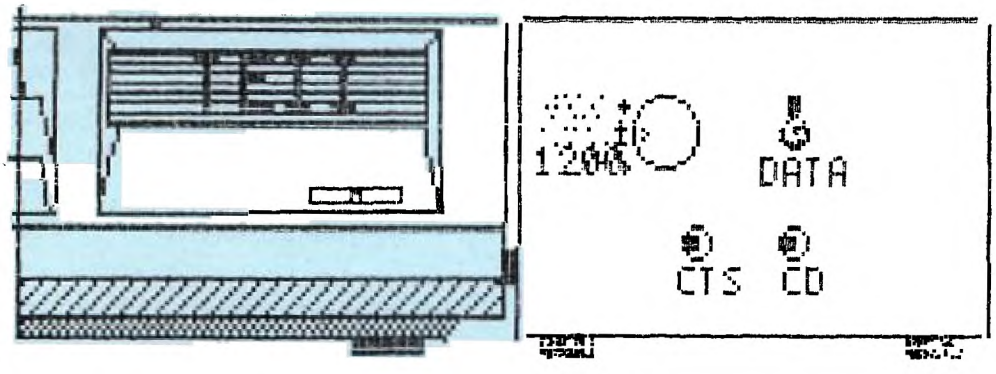

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