SYDNEY

NEWS
DIGEST

TI.S.H.U.G GOES FULL TIME

As of Monday the 4th March, this User group will have an office hours phone number...(02)560-0926 each and ever Monday between the hours of 8am to 5pm.

This number is usually available only to the many Modem Users of TI.S.H.U.G, for their Electronic Bulletic Board Service each evening.

Over the past few years, there was only 2 ways you could contact this group... (a) Any Committee member and the Programmers Crisis line during the evenings, and (b) Shane Andersen at Computer Wave during the day.

The problem with the latter was that it sometimes became impossible for Shane to do the work he was paid for, because of the many calls received which were club related.

Shane will only be working three days a week at Computer Wave and you are asked NOT to call that number for Club matters. Because of the fast growth of this group, and the huge workload on the Committee members, it was decided to hire Shane each Monday as a consultant and to help reduce some of that load.

You can now contact this group in the following ways...
(1) ...Shane Andersen (Founder/Editor) Monday's: 8am-5pm on 02-5600926

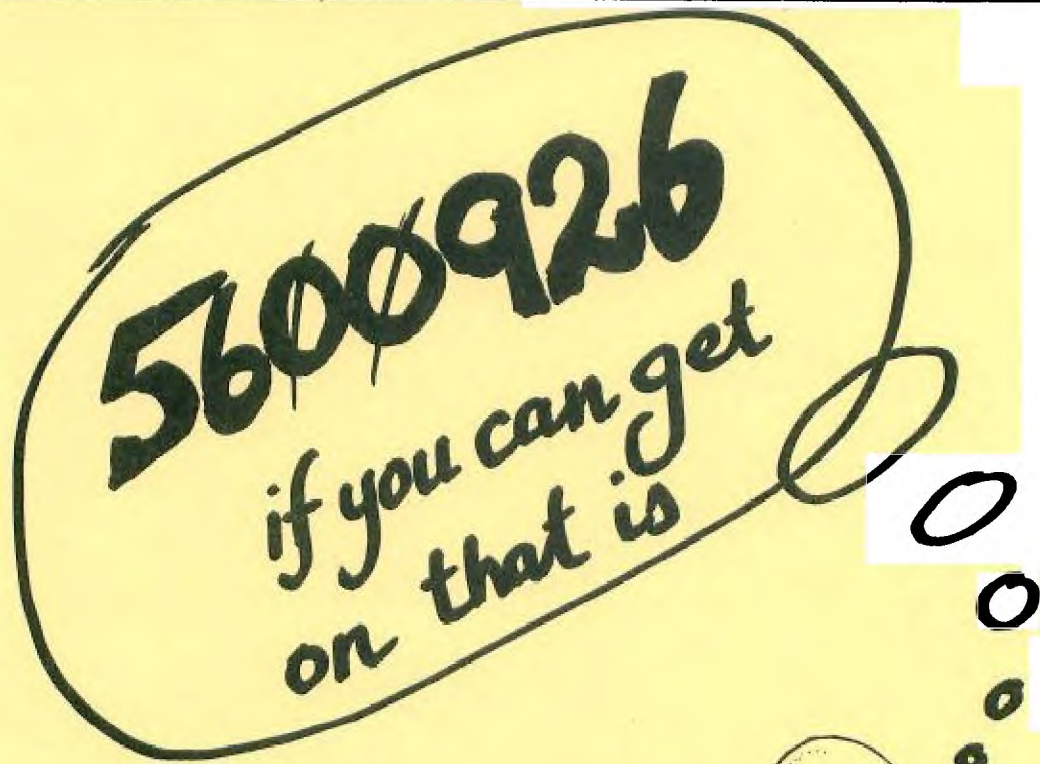(2) ...TEXPAC BBS 7pm-6:30am w/nights and 24hours on week-ends: 02-5600926

(3) ...PROGRAMMERS CRISIS LINE: 10am-4pm Monday Tuesday & Wednesdays and 10am to 9pm most other days...02-992229

(4) ...CLUB SECRETARY: JOHN ROBINSON most evenings 7pm-9pm ...(02)8480956

(5) ...TREASURER/LIBRARIAN: TERRY PHILLIPS most evenings 7:30pm-9:30pm ...(02)7976313

Other Committee members can be reached via the above numbers.

TI.S.H.U.G. (Australia) has two postal addresses...
MEMBERSHIP ADDRESS: P.O. Box 149, Pennant Hills 2120
GENERAL ADDRESS:P.O.Box 595, Marrickville, NSW 2204
Providing support to the users of the TI-99/4(A) and TI Professional through the 80's and beyond.

5600926 if you can get on that is

TEXPAC ELECTRONIC BULLETIN BOARD SERVICE so popular — it's hard to get on! ...But keep trying.

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$$  OUR NEXT  B I G  A C T I V I T Y  Club Auction  $$
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AUCTIONEER and TI.S.H.U.G
Co-Ordinator ... Peter Varga

Saturday the 2nd of March (2pm) will be the next big club activity...and a very special one at that.

Once again, conducted at the St.John's Church Hall in Victoria St, Darlinghurst (near St.Vincents Hospital)...this will be our very first AUCTION AFTERNOON.

It will be split into 3 sections...

(1)Club DISK software LUCKY-DIP.

(2)SWAP-A-THON.

(3)CLUB AUCTION.

With such an event, there has to be guidlines which we ask that you follow strictly...and they will be explained further in this article.

Now lets look at each of these areas... Many of the Club Library Disks have been backed-up, with a huge assortment of programs on each disk, and each disk will be sold for a mear $2 in the form of a LUCKY-DIP. Each sale will be final, with no exchange or return. If you find that you either have some of the programs on the disk you purchase, or you don't like the range of programs on that disk, then you can take it home and re-format it and stick your own goodies on it. But we are assured that there will be more than good value for your money with this activity.

THE SWAP-A-THON ... will be conducted during the first HALF-HOUR of this afternoon. This will be an opportunity for you to exchange Modules with others at that meeting.

CLUB AUCTION ... On the back page of this Sydney NewsDigest, you will find an AUCTION LIST. You are asked to either cut it out or photocopy it. But you must bring an AUCTION LIST along with you.

(1) Any person not supplying and Auction List, and obtaining a LOT NUMBER from the Auctioneer, will not have his/her goods Auctioned on the day.

(2) Only MODULES and PERIPHERALS will be allowed for Auction. Disk/Cassette software and TI-99/(A)computers will not be permitted for sale, swap or auction.

(3) Each and every item you bring into the hall MUST be tagged or labelled with your NAME on them. A record will be kept of all people buying and selling.

(4) ALL ITEMS SOLD:via CASH or Club BANKCARD ONLY. Regarding the Club Bankcard: This service will be available for your convenience with a service charge of 10% to cover handling costs...and AS-IS basis. The Club takes no responsibility as to the condition of goods sold.

(5) ALL SALES will be finalised at the fall of the hammer. No bid shall be retracted, and in the case of dispute, the Auctioneers decision shall be final.

(6) Each person will be allowed to Auction 5 items. If there is time at the end, then anything else you have, will be put up also...and an Auction List will then be provided.

(7) The seller does not have to sell, unless he/she is happy with the price.

(8) CHARGES: Those bringing MODULES - $2.00 (any quontity).
PERIPHERALS - $2.00 EACH ITEM.

So there you have it. It should be a fun and productive afternoon for all, and a great time to thin-out or stock-up goodies for your TI-99/4(A) Computer. As they say on TV...BRING YOUR MONEY WITH YOU ... but don't forget your Auction List.

TI forges ahead in semiconductor R&D

The world market for semiconductors grew 28% last year to $17bn and is expected to grow a further 38% this year to $23.5bn. These figures were supplied by Charlie Holland, managing director of Texas Instruments Australia, who gave an update of TI's worldwide activities during a recent product launch in Sydney.

TI is increasing its overall share of the semiconductor market as well as keeping pace with expansion, according to Holland. "We are world leaders in manufacturing of the 64 kbit dynamic RAM which is now in the high volume phase of its life cycle, a phase which will continue until 1986 when it will be overtaken by the 256 kbit DRAM chip," he said.

"TI began shipping its quarter megabit DRAM chips a few months ago and expects to gain a large share of the 400,000 billion bit market that will be occurring in 1989. We are currently building new plants in Japan and Texas that will be capable of producing 1 Mbit DRAM chips. These plants are scheduled to come into operation next year."

Holland said that TI's total capital expenditure in 1983 was $478m, an increase of 40% from 1982. "We

project a further increase in 1984 to about $700m, with the bulk of the increase for semiconductor processing equipment and facilities," he explained.

TI is the largest semiconductor supplier in the world and for a number of years has concentrated on four main areas of semiconductor investment: MOS memories, custom circuits, applications processors and CMOS technology. In 1984, the company's R&D activity is projected to grow by 19% to a record high of $625m, of which about $340m will be funded by TI (the balance comes from government and customers).

TI maintains a low profile, particularly in Australia, and generally only hits the news headlines when something goes wrong; for example the company's exit from the home computer industry and more recently the controversy in the US over allegedly untested military circuits.

"It's not that it doesn't work as a computer, it just works better as a paperweight."

OK, who erased my spinach surprise recipe?

"Gee, this 'Lost In Space' game is intense!"

Secretary's Notebook
with J.R.

Hi! I have just r· · ·· from the February tutorial. The winner of the 3D·":'·.' was Will McGovern, who was presented with the module Hen-Pecker. Joshua Velling came down from Bathurst and was presented with a $30 cheque for his excellent adventure program TROL. We goofed! Why? because we forgot to draw the door prize at the meeting. The number drawn by the computer was 1378. It is possible the person holding this ticket did not attend as the computer picks any random number to the maximum specified. So someone out there is entitled to receive a $25 gift voucher, which can be spent at the Club Shop.

The entries to my cursor problem were judged and unfortunately not one of them complied with the specification, which was to change the cursor to a shape of your choice AND eliminate the FLASHING. Shane Ferrett and Russell Welham get an Honorable Mention, and the prize jackpots to $20. Their entries follow:

```
7D00 0420   BLWP @>7D06
7D02 7D06
7D04 045B   B *R11
7D06 7DF0   DATA >7DF0,>7D0A
7D08 7D0A
7D0A 0200   LI R0,>3F0
7D0C 03F0
7D0E 0201   LI R1,>7D1C
7D10 7D1C
7D12 0202   LI R2,>8
7D14 0008
7D16 0420   BLWP @>6028
7D18 6028
7D1A 0380   RTWP
7D1C 0038   DATA >0038,>3892,>7C10,>2844
7D1E 3892
7D20 7C10
7D22 2844
7D24 0000   AORG >701E
701E 7FE8   DATA >7FE8
7020 0000   AORG >7FE8
7FE8 4355   TEXT 'CURSOR'
7FEA 5253
7FEC 4F52
7FEE 7D00   DATA >7D00
7FF0 4F4C   END
```

Return to the title screen by typing function + and then select Basic. In the command mode type "CALL LINK("CURSOR"). Note: If EDITOR/ASSEMBLER or mini-memory is used directly data at address >7D0C must reflect cursor address address in VDP RAM. For Basic this address is >3F0.

```
****************************
*  CHANGE THE CURSOR SHAPE. *
*    BY RUSSELL WELHAM.     *
*  EXTENDED BASIC  1985.    *
*      VERSION 2            *
****************************
       DEF   CURSOR
VSBW   EQU   >2020
VMBW   EQU   >2024
VSBR   EQU   >2028
VMBR   EQU   >202C
KSCAN  EQU   >201C
GPLWS  EQU   >83E0
STATUS EQU   >837C
KEYVAL EQU   >8375
BLINK  DATA  >0BA0
*DEFINE CURSOR SHAPE
SHAPE  DATA  >3C42,>99A1,>A199,>423C
       DATA  >0038,>4404,>0810,>0010
       DATA  >0010,>1010,>1010,>0010
       DATA  >0038,>5450,>3814,>5438
       DATA  >0020,>5050,>2054,>4834
       DATA  >0000,>2810,>7C10,>2800
       DATA  >0000,>1010,>7C10,>1000
       DATA  >0020,>1008,>0408,>1020
       DATA  >0000,>007C,>007C,>0000
       DATA  >3030,>3FFF,>FE7C,>180C
```

```
SAVERT DATA >0000
INC    DATA >0008
MYREG  BSS  >20
OFFSET BYTE >60
KVAL   BYTE >30
LIMIT  BYTE >3A
MESS1  TEXT 'SET SHAPE OF CURSOR'
MESS2  TEXT 'TO 1 OF 10 SHAPES'
MESS3  TEXT 'YOUR SELECTION NOW PLEASE?'
MESS4  TEXT '1)   ?'
MESS5  TEXT '2)   !'
MESS6  TEXT '3)   $'
MESS7  TEXT '4)   &'
MESS8  TEXT '5)   *'
MESS9  TEXT '6)   +'
MESSA  TEXT '7)   >'
MESSB  TEXT '8)   ='
MESSC  TEXT '9)   TEXAS'
MESSD  TEXT '0)   COPYRIGHT'
PLACE  DATA >00A6,>00C7,>010C,>012C
       DATA >014C,>016C,>018C,>01AC
       DATA >01CC,>01EC,>020C,>022C
       DATA >02E2
MESS   DATA MESS1,MESS2,MESS4,MESS5
       DATA MESS6,MESS7,MESS8,MESS9
       DATA MESSA,MESSB,MESSC,MESSD
       DATA MESS3
LEN    DATA >1311,>0505,>0505,>0505
       DATA >0505,>090D,>1A00
CURSOR MOV  R11,@SAVERT
       LWPI MYREG
       BL   @CLEAR1
       CLR  R4
       CLR  R5
LOOP   MOV  @PLACE(R4),R0
       MOV  @MESS(R4),R2
       MOVB @LEN(R5),R3
       SRL  R3,8
       BL   @SHOW
       INCT R4
       INC  R5
       CI   R5,13
       JLT  LOOP
       LI   R0,1008
       LI   R1,SHAPE+8
       LI   R2,8
       BLWP @VMBW
       LI   R0,763
       MOV  @KVAL,R5
AGAIN  MOV  R5,@KVAL
       BL   @KEY1
       LI   R1,SHAPE
CHECK  CB   @KVAL,@KEYVAL
       JEQ  DO
       A    @INC,R1
       INC  @KVAL
       CB   @KVAL,LIMIT
       JEQ  AGAIN
       JMP  CHECK
DO     LI   R0,1008
       LI   R2,8
       BLWP @VMBW
FINAL  BL   @CLEAR1
       LWPI GPLWS
       MOV  @SAVERT,R11
       CLR  @STATUS
       RT
CLEAR1 CLR  R0
       CLR  R1
CLEAR2 BLWP @VSBW
       CI   R0,767
       JEQ  CLEAR3
       INC  R0
       JMP  CLEAR2
CLEAR3 RT
SHOW   MOVB *R2+,R1
       AB   @OFFSET,R1
       BLWP @VSBW
       INC  R0
       DEC  R3
       JNE  SHOW
EXIT   RT
KEY1   CLR  R9
       CLR  @KEYVAL
       CLR  @STATUS
KEY2   CLR  R6
```

```
            LI    R1,>2000
            AB    @OFFSET,R1
            BLWP  @VSBW
     KEY3   BLWP  @KSCAN
            MOVB  @STATUS,@STATUS
            JNE   EXIT
            AI    R6,4
            C     R6,@BLINK
            JLT   KEY3
            CLR   R6
            LI    R1,>1E00
            AB    OFFSET,@R1
            BLWP  @VSBW
     KEY4   INC   R6
            C     R6,@BLINK
            JLT   KEY4
            JMP   KEY2
            END
```

As promised last month I am including an article written by Marcello Zannini, from the Italian User's Group, based in Bologna, concerning accessing sprites in Basic. Over to you Marcello :

Dear members of TISHUG, wherever you may be. Texas Instruments, in all the guides and manuals published, always repeat that it is impossible to use sprite graphics by using console Basic. If you read on you will see that this statement is incorrect. We will be playing a clever trick on the Basic Interpreter in order to manipulate sprites with the resident TI BASIC and cassette tape. But first a warning! the sprites obtained by these procedures cannot be controlled by all the commands available in Extended Basic. (I am still working on finding a complete solution). Nevertheless my sprites have some useful and interesting attributes. They are not effected by other characters which will pass under them without becoming transparent. They can be placed in each and every one of the 192 x 256 pixels on the screen, so that you can obtain a movement pixel by pixel instead of in the constraints of a 24 x 32 matrix. It is essential that those of you with more hardware than the console and tape recorder, disconnect all peripherals at this point.....and now please pay attention!!!

When a program is saved on tape, there is a header containing some bytes, which contains the information relating to the size of the program. By changing this information it is possible to pass over the lower memory and write into VDP registers. Because file recording is similar to program recording for the cassette (but not for a disk drive), we are going to use a record on file to write a false header. The program required to do this is PRG1 :

```
10  REM FILES GENERATOR
20  REM TO MODIFY THE VDP REGISTERS
30  REM COPYRIGHT IT U.G. BOLOGNA ITALY
100 CALL CLEAR
110 INPUT "REGISTER(0-7),VALUE
            (0-255)?":R,D
120 A=18429-(256*R=D)
130 X$=CHR$(0)
140 OPEN #1:"CS1",OUTPUT,FIXED
150 PRINT #1:X$&X$&X$&X$&X$&X$&CHR$(INT(A/256))&CHR$(A)
```

Remember in the INPUT on line 110, you respond with 5,15. Actually the register 5 contains the beginning of the sprite map; the default value is 6 and is poked again every time you press QUIT. If you insert 14, the map is located over the ASCII characters 128 thru 143, and if you insert 15 then over the ASCII characters 144 thru 159. Therefore always use 5,15.

To access the sprites follow these steps:

1. Record on tape the "false program" obtained with PRG1

2. Reset RAM memory and stack with QUIT or BYE.

3. Load from the tape the "false program" in the usual way i.e."OLD CS1"

4. Wait a short time and when the screen turns black with rows, press a letter on the keyboard and then <ENTER>. Now you should read the message MEMORY FULL and the screen returns to its normal mode.

5 Delete the false program with the <NEW> command.

Now you can use 32 sprites (2 required per character) in this way:

```
CALL CHAR (144,"Y1X1F1C1Y2X2F2C2")
CALL CHAR (145,"Y3X3F3C3Y4X4F4C4")
```

and so on.....where the parameters are:

Y is the row (0-191)
X is the colum (0-255)
F is the form (ASCII code + 96)
C is the colour (Basic colour -1)

Remember all the values must be Hexadecimal.(Editor-For those of you not familiar with the Hex notation you convert decimal by dividing the number by 16 and noting the remainder, which will be a number from 0 to F (decimal 0 to 15). Repeat the process with the dividend for another division by 16 until a division produces a zero quotient. The last remainder is the leftmost digit of the Hex number. To clarify this consider the number 122.
122/16 = 7   remainder 10 (>A)
7/16 = 0   remainder 7 (>7)
Therefore decimal 122 is Hex 7A)

If Y is put equal to >D0 (208) the sprite and the other characters following will not be visible!. A short demo program follows with a dec-hex convertor:

```
1   REM DEC-HEX CONVERTER
3   CALL CLEAR
10  DIM A$(15),H$(255)
20  FOR I=0 TO 15
30  A$(I)=SEG$("0123456789ABCDEF",I+1,1)
40  NEXT I
50  FOR I=0 TO 15
60  K=16*I
70  FOR J=0 TO 15
80  H$(K+J)=A$(I)&A$(J)
90  NEXT J
100 NEXT I
101 REM SPRITE MAGENTA DEMO
110 F$=H$(128)&H$(64+96)&H$(14-1)&H$(208)
120 FOR Y=0 TO 191
125 CALL HCHAR(12,12,144)
130 CALL CHAR(144,H$(Y)&F$)
140 NEXT Y
```

Macello will be back soon with.....MERGE in TI Basic!!

Now to my mail: First of all my thanks to those members who have made kind comments about the club and its activities. Unfortunately I cannot answer all of your letters personally but if you want a reply please send a stamped addressed envelope.

Brian Rutherford from Newcastle has kindly forwarded an extract from the UK Users Group newsletter, which details a method for converting PRK files, in memory image format to DISPLAY/VARIABLE 80 format used by the TI-WRITER word processing program.

Dr. Greacen from South Tamworth writes to tell me he has modified TI's mailing list program to produce DIS/VAR 80 format files. I have asked him to publish the routines in the SND so that those members with the TI program can upgrade it.

Peter Newbury has debugged the minimemory program published on page 8 of the Christmas 1984 issue of SND.
In line 370 change the 9 to read 91.Line 390 change the 5th piece of data from 23 to 2,3 .
Line 430 change 29 to read 129.
Finally line 480 insert the data 193 in front of 76.

Tony Smogurzewski writes: I would like some assistance- for myself and other TISHUG Users- in the way of a conversion chart of terms and Basic used by other popular brands of computer such as Apple, Tandy, and Spectrum. In reply I would say that although many statements used by these machines can be translated, it is usually easier to write fresh code particularly when sound and graphics are used. One of the problems often encountered is when confronted with a PEEK or POKE statement. It is essential to know what happens in the computer. We have published in the earliar issues of SND some schedules of equivalent statements in APPLESOFT and TRS-80. There was also an article on this topic in the old 99er magazine written by Regena.
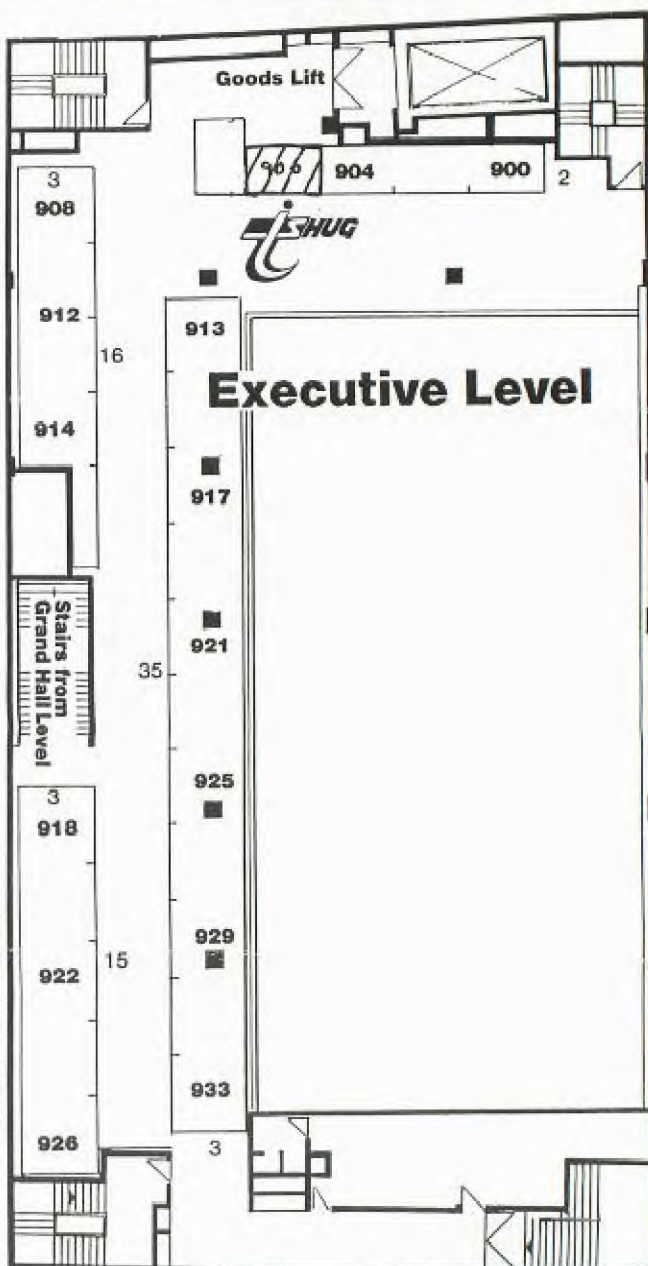
I still need help to man (the ladies are also welcome) the stand at PC85 particularly during office hours on the Thursday and Friday i.e. from 9.00 am to 5.00 pm. We will have a telephone line installed so that we can demonstrate the Club BBS and other Bulletin Boards around Sydney. A plan to help you locate our stand 906 is shown below. The space has been kindly donated to us by the Show Organisers, Australian Exhibition Services. The show runs from March 13-16th at Centrepoint. I still have a few free passes left. Hope to see you at PC85.

Next month some tips to help you get more enjoyment out of TI-WRITER especially those of you with non Epsom compatible printers like the C.ITOH. I will also review the latest Assembly Language book, which we are importing direct from the publisher in the USA. The book is entitled "Learning TI 99/4A Home Computer Assembly Language Programming " by IRA McCOMIC.

Running out of memory.......

Happy Computing.

John Robinson.
Hon. Secretary

Goods Lift

Executive Level

Stairs from Grand Hall Level

```
*****************************************************
*                                                   *
*      R E V I E W   R E V I E W   R E V I E W      *
*                                                   *
*****************************************************
```

WHAT ELSE IS NEW?

From an Anonymous Correspondent

Being an avid reader of any number of computer magazines, be they written for TI or any other brand I was slightly amused the other day to read an article in Your Commodore which was extolling the virtues of Commodores latest offering the C16. Maybe I have a warped sense of humor however read on and see if you share my sense of amusement.

The reviewer lamenting that there are no Sprites available on the C16 says " .... I feel that the world can live without sprites for at least another computer generation; the Commodore 64 and Atari were just too far ahead of their time" What !!! No mention of TI's sprites. Well I have had them via Extended Basic for about 4 years so I guess my trusty 4A must be a light year ahead of its time!

Further on in the review I am informed that finally an ELSE tag has been added to IF..THEN (Ho-Hum)- there is a PRINT USING command and wait for it a RESTORE <line number> feature.

But my friends that is not all. Mr. Ecstatic Reviewer has more on this great new machine. Would you believe it has an AUTO command which generates line numbers for you and how about this - a RENUMBER command which even renumbers GOTOs and GOSUBs. I can't expect you to believe that it also has a TRACE function that prints line numbers on the screen. No one in their right mind could comprehend such a thing!

So there you have it. If I wasn't sure that TI had stopped making a Home Computer I would swear they had gone back into production and built the C16. Hmmm! Come to think of it, I wonder ?????

Extended Tutorial

HERE IS YET ANOTHER EXTENDED TUTORIAL by TONY McGOVERN

VII. ACCEPT AT and other RAMBLINGS

TI Extended Basic is a very substantial language. The XB cartridge contains 12K of ROM and 3 and a bit (the 4th one isn't full) GROMs at 6K apiece. This is on top of the 8K of console ROM and whatever parts of the 3 console GROMS are still used in XB. The tragedy of the TI-99 is that GROMS and GPL were ever invented. I guess it was TI's way of trying to keep the software market sewn up. The end result as we all know is that they shot themselves in both feet with uncanny accuracy. Instead the TMS9900 CRU addressing to bank switch plain ordinary ROMs or even just used GROMs only as sources of code to load into RAM, they could have had a machine that did justice to its CPU, a real home minicomputer ..... that's all past history now.

I have been pondering on what TI should have done way back when the 99/4 was first designed, that could have been easily done at the time (or even when it was updated to the 99/4a). My conclusion is that the machine should have been given 4K of fast 16-bit CPU RAM instead of a measly 256 bytes. There would have been plenty of room with a little rearrangement and/or better decoding of memory-mapped devices (VDP, sound, speech, GROMs). This would have meant that Basic and XB system areas, sprite tables, full screen buffers, string buffers, value stack, and so on could have been in fast RAM, and even console Basic could have had full scope for character and sprite definitions (as in TI-LOGO for instance). Their cartridges could then have easily been a lot better, and let's face it, many of the earlier ones were pretty hopeless, and the later ones are all limited by lack of honest CPU RAM. Really good programs have only just started to appear (TENNIS for example), a year after TI laid the 99/4a to moulder in its grave. TI would then have never been dragged into that marketing war to the death (TI's that was) with that vastly inferior machine, the VIC-20. I have a suspicion that the 256 bytes happened because part of TI management wanted to protect their existing evaluation board and smaller minicomputer business.

Proposed specs for the CorComp 99/64 are floating around the User Groups now. Perhaps this is the 99/8 rising from the ashes. It reads well, but I have a few reservations. The VDP sounds just like the 99/4 VDP rather than the more advanced model that TI is working on. And only 64K RAM as standard in a new machine in this day and age ? They may be thinking of it as a way to sell high profit sole-source memory cards, and if so they haven't learned anything from the TI-99/4a's demise at the hands of Commodore. I hope that 99/4 compatibility does not mean that GPL and GROMs form any part of the normal operation of the new machine. The biggest reservation I have concerns the Enhanced, Extended Basic. This looks very powerful but has one disastrous omission, as it does not support honest procedures, sub-programs with local variables as in XB. That's not enhanced, that's just caught the Microsoft / Apple / IBM PC Basic disease (Commodore Basic is beneath contempt). Genuine procedures are a major requirement for a good Basic. TI Extended Basic (showing its engineering/instrument company heritage) has had this feature for years now. I suspect TI's programmers who obviously put enormous effort into doing the user subprograms properly were disappointed that so little good use was made of their finest feature in magazine articles and books. What was needed in XB was for user defined functions to be upgraded to the same level of performance as subprograms, and editing improved.

If CorComp has really given up this feature (enhanced ??) then I may very well pass their machine by, despite its TI-99 compatibility, when the time comes to upgrade. Other Microsoftish clutter seems to have crept in too. As it is I am waiting until the Intel 8088 has faded to an unpleasant memory. The immediate improvement really needed in XB sub-programs is a means of examining variable values in any sub-program when program execution is halted by BREAK or errors. TI should have done it in XB by retaining the EDIT command of console Basic, allowing it to access user subprograms by name. Anyone listening out there? If so add single command array operations, full syntax checking on entry, 80 column display capability with formatting power to match, bit-map screen functions, fast program execution and anything else will then be gravy. Then TI-99/4a owners will be most pleased to join in. The bad news is that TI is starting to cut back on support for the 9900 family despite its excellent qualities, and so it is becoming less attractive for new designs.

Enough ramblings and back to the tutorials ! What then is the most powerful feature in XB after SUB and CALL? A good candidate is the file system, but as this is already built into the console I will stick with commands specific to XB. The prime candidate is ACCEPT AT and its qualifying clauses. This was emphasized by the recent appearance (mid-84) in a computer magazine of a long article on machine code for adding this function to IBM PC Basic (which doesn'nt have sub-programs either). ACCEPT AT is very useful and powerful, but has some undocumented features as well as some subtle and treacherous bugs, and is well worth talking about in this series.

The simplest level of ACCEPT AT combines the INPUT routine with its access to editing features, with cursor positioning on the display screen by the AT clause. So far this is just the input version of DISPLAY AT. The difference from INPUT is that there is no provision for prompt strings, but a DISPLAY AT soon fixes that. It also accepts input to a single variable only, and not to a whole variable list. As ACCEPT AT and DISPLAY AT do not scroll the screen, their repeated use can give a much better effect than INPUT when graphics elegance is important. Construct your own examples here or work the XB manual examples. Remember that the cursor is in XB color group 0 if you are trying to dress up the graphics.

BEEP allows an audible prompt with only one program byte (we'll talk about program length later on if it keeps going long enough). Of course constant repetition of beeps can get a little wearing. The ERASE ALL clause provides an alternative to CALL CLEAR for clearing the screen. As compared with CALL CL[AR, ERASE ALL is slower to execute, (it seems to be line at a time) but takes less program space. Its effect is slightly different also. This little program which uses ERASE ALL with DISPLAY will make both speed and screen effects easy to see.

```
100 CALL CLEAR :: CALL COLOR(0,3,3)
110 FOR I=1 TO 100 :: CALL CLEAR :: NEXT I
120 FOR I=1 TO 100 :: DISPLAY ERASE ALL :: NEXT I
130 CALL SCREEN(11):: FOR I=1 TO 1000 :: NEXT I
```

That's the simple pieces of ACCEPT AT -- now it starts to get interesting. VALIDATE allows the programmer to decide what characters are acceptable in a response. The computer honks (that's the word in TI-FORTH) at unacceptable inputs. Three predefined types are available. UALPHA accepts only upper-case alphabetic characters -- very useful for filenames and suchlike. This is not quite the same as depressing the alpha-lock key as it it only accepts letters, and so is incompatible with input to a numeric variable. If you are in the habit of verifying wet paint signs by touch, try that for a change. The DIGIT type does just what its name implies, and NUMERIC allows the input of any floating point number as well as plain positive integers. As with INPUT, all numbers are acceptable to a string variable, but numeric variables are fussier.

Now what if these predefined types aren't right for what you want ? Suppose only digits 1 to 4 are acceptable, as in a menu choice of 4 items labelled 1 to 4. In console Basic extra lines of code would be needed to check the input, but ACCEPT AT handles this

Extended Tutorial
continued

with the clause VALIDATE("1234") or VALIDATE
(I_LIKE_IT$) where the string variable has previously
been set to "1234". To put it more formally, only the
characters in the string argument of VALIDATE can be
entered at the keyboard to be ACCEPTed.

The SIZE clause allows ACCEPT AT to be used with
almost no interference to screen displays. It blanks
out the specified number of characters, providing an
input window of finite length, and if the length
specified is negative, the characers already in the
window are not erased, and form an immediate input for
ACCEPTance. This is very handy for making default
choices obvious to the user. Let's enter a little
program to get at the essentials.

```
100 CALL CLEAR :: DISPLAY AT(12,1):RPT$("_",28)
200 ACCEPT AT(12,2)SIZE(3):A$
300 DISPLAY AT(15,2):A$;LEN(A$)
400 CALL KEY(0,K,S):: IF S>0 THEN 100 ELSE 400
```

You most likely have the Alpha-lock depressed. If
so let it off, and RUN our little program. Just press
ENTER the first time round, next time hit <space>
first, and finally <space> first before hitting another
key. This shows that <space>s after the last honest
character entered are ignored. Try some VALIDATEs here
too, if you wish. Now with the program as given, alter
SIZE(3) to SIZE(-3). It now ACCEPTs whatever is in the
was or is placed in that 3 character input window.

Now that's all very simple, but it brings us to
the edge of the undocumented wilderness. Alter the
CALL KEY(0,K,S) in the last line to CALL KEY(3,K,S) and
RUN the program again, this time entering letters.
Observe what happens the second time around. This
answers the question of what keyboard mapping ACCEPT AT
uses -- like CALL KEY(0,K,S) it uses the last
one, whatever that was. Try split keyboard units in
the last line. At the machine code level, a particular
byte in the CPU scratchpad RAM has to be set to the key
unit before calling the SCAN routine. I interpret the
behaviour as showing that in the XB modules of my
experience that ACCEPT AT does not alter this byte.
The XB manual however does not document this behaviour
at all. If XB weren't a dead language that would be a
caution signal. It does need to be watched in your
programs, if your last CALL KEY wasn't the key unit you
want for ACCEPT AT. On the positive side you can
control ACCEPT AT with a prior dummy CALL KEY to ease
input for the user. An example is when a program
requests input of a filename, setting the key unit to 3
makes letters come out as upper-case while still
allowing other characters. Brian Rutherford first
brought the anomalous behavior to my attention.

Now that's not too bad, but there is worse to
come. Insert a VALIDATE("123") clause in the ACCEPT
AT and RUN the program. No problems there with
SIZE(3), but SIZE(-3) is trickier. You can't enter
invalid characters from the keyboard but unaltered
"_"'s slip through. The VALIDATE appears to be
exercised as characters are entered from the keyboard,
and not as the edit buffer contents are transferred
into the target variable. The decision to ignore
trailing blanks in the input window is taken then
however. Presumably a negative SIZE pre-loads the edit
buffer with the screen window contents without doing a
VALIDATE check. Ultimately this is not a real problem
since the programmer can control what is on the screen
before ACCEPT AT is invoked. Once again, the XB manual
does not bind ACCEPT AT to work this way.

This behaviour does leave a weak spot in ACCEPT AT
which can only be considered as a bug, but not an
intractable one. Suppose you have a menu choice of
items, say 1-4 by number, with default 1 pre-loaded in
the SIZE(-1) window, and a VALIDATE("1234") clause to
ensure proper entry for a numeric variable . What can
possibly go wrong ? An evil-minded program tester
would immediately delete the default using FCTN-1. An

attempt to enter the blank will then cause the screen
to scroll with a WARNING message. This is not a fatal
error, but might as well be if your background is a
carefully composed graphics screen. The workaround for
this problem is not difficult, but the best one also
resolves an even worse bug, so I will leave it for a
little while. I do consider suppression of error
trapping or warning messages by global ON ERROR or ON
WARNING to be poor programming practice. The best
safety net is one that is never used, only tested.

Now go back to the original sample program and
change every every A$ to an array element A$(2).
Default dimensioning will do. Nothing changes. Next
alter your A$(2) in the ACCEPT AT to A$(1+1). Now it
works only if there is also a VALIDATE clause, but the
SIZE window is disabled and input can even spill over
into the next line. No, it's not useful as a multiline
ACCEPT ! The solutions to this and the previous
problem are the same --- always ACCEPT into a temporary
simple string variable, and then process the return,
and do not ACCEPT a numeric directly or ACCEPT into an
array element with computed index. Both of these
problems were turned up by my testing crew during the
writing of TEX-BOUNCE, and served as a reminder that
program testing should never be left to the author of a
program. The same holds true for writers of languages!

Might as well keep on going with the entomology
lesson. The sub-program CALL ERR fails to clear errors
when the DSR routine cannot find the external device,
as in attempts to access an empty disk drive. The
work-around this problem is to have a second bash at
CALL ERR after further trying for a file on the device
which failed to OPEN. The OPEN cannot be CLOSEd
without crashing the program or invoking this extra
step to flush out the Peripheral Access Block. The
Feb/85 Newsdigest carries a letter giving that
essential extra step. Also Ross Mudie called up
earlier with a similar approach. I had put it aside as
something to be dealt with from Assembly language,
which is the way I will do it in the next update of
COLIST.

The instruction ON BREAK NEXT is useful,
particularly in games, for disabling the FCTN-4 (BREAK)
key action. However a CALL SOUND with duration
greater than 33 over-rides that. Just why is not so
far obvious to this outside observer.

"Biggs, go see what program Jim Howard is working with!"

How's this for inspiration, Squeek? Let's junk the
novel and start designing computer software.
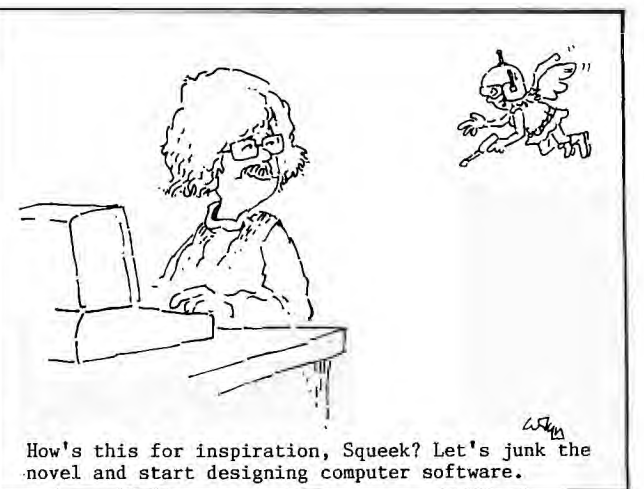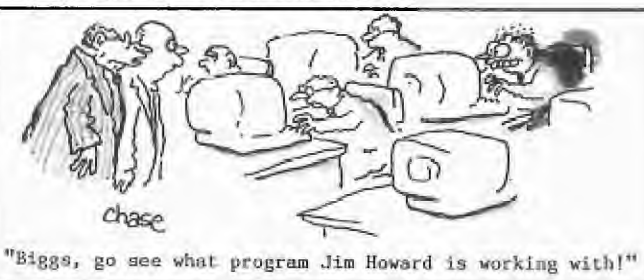
Texas Instruments Pro-Lite™ Professional Computer

Truly Portable

The Texas Instruments Data Systems Group has announced a new member of its Professional Computer Family — the TI Pro-Lite Professional Computer. A full-featured, truly portable personal computer which is software compatible with the TI Professional and Portable Professional Computers (TIPC and TIPPC), the TI Pro-Lite has been designed to help meet the needs of the mobile professional.

The TI Pro-Lite measures 2¾ inches × 11½ inches × 13 inches, weighs in at 10½ pounds, and is packed with the same horsepower as its family desktop models. It utilizes a 16-bit 80C88 microprocessor (CMOS version of the 8088 used in the TIPC and TIPPC), thereby maintaining software compatibility.

The TI Pro-Lite incorporates the latest in state-of-the-art technology. It features a page-size, Liquid Crystal Display (LCD) bit-mapped of 80 columns by 25 lines with optional one-plane LCD graphics capabilities. The system comes with a standard 720K-byte, 3.5-inch microfloppy disk drive, doubling the storage capacity of most desktop computers. A second 3.5-inch microfloppy Disk Drive/Battery Expansion Unit attaches to the back of the computer, allowing for a dual drive configuration, is also available.

The TI Pro-Lite has been designed to be a truly full-function portable PC, with the following features:

- Software compatible with the Texas Instruments Professional Computer Family
- 16-bit microprocessor (80C88) with optional 8087 coprocessor
- Single 3.5-inch drive unit (720K-byte capacity) with an optional 3.5 inch add-on drive with battery
- 25-line by 80-column with optional one-plane LCD graphics
- 256K RAM with expansion up to 768K bytes
- Two slots for optional modem, external monitors, RS-232-C interface, and Solid State Software™ Module
- Optional 300 bps internal modem
- Typewriter layout keyboard, with 79 keys, 12 function keys and an embedded numeric keypad
- Interfaces — standard parallel printer port and expansion floppy disk port
- Optional 4.7-pound thermal-transfer portable printer
- Optional battery pack

This computer, both in single- or dual-drive configurations, can be completely battery powered. The rechargeable lead-acid batteries allow the machine to run for up to eight hours, depending on the hardware and software configurations.

A PC Interface Cable is available for users who need to copy data files from a 5¼-inch to a 3.5-inch disk format. This cable connects to either a TIPC or an IBM® PC through the external floppy disk port, enabling the TI Pro-Lite 3.5-inch drive to become an external drive to the desktop machines.

Another option for the TI Pro-Lite is a portable thermal-transfer printer. The TI PORTABLE PRINTER is capable of printing on either plain (utilizing a thermal-transfer ribbon) or fanfold thermal paper. It can accept single sheet or fanfold (pin feed) paper. The printer has a 9 x 9 or 15 x 9 character dot matrix with character definitions of the TI Model 850 printer. Other features include printing in normal, compressed, expanded, emphasized and enhanced print styles; raster graphics in 60, 72, 120 and 144 dots per inch; and paper-out and ribbon-end sensing. The TI PORTABLE PRINTER, when used with the TI Pro-Lite, also can be battery powered.
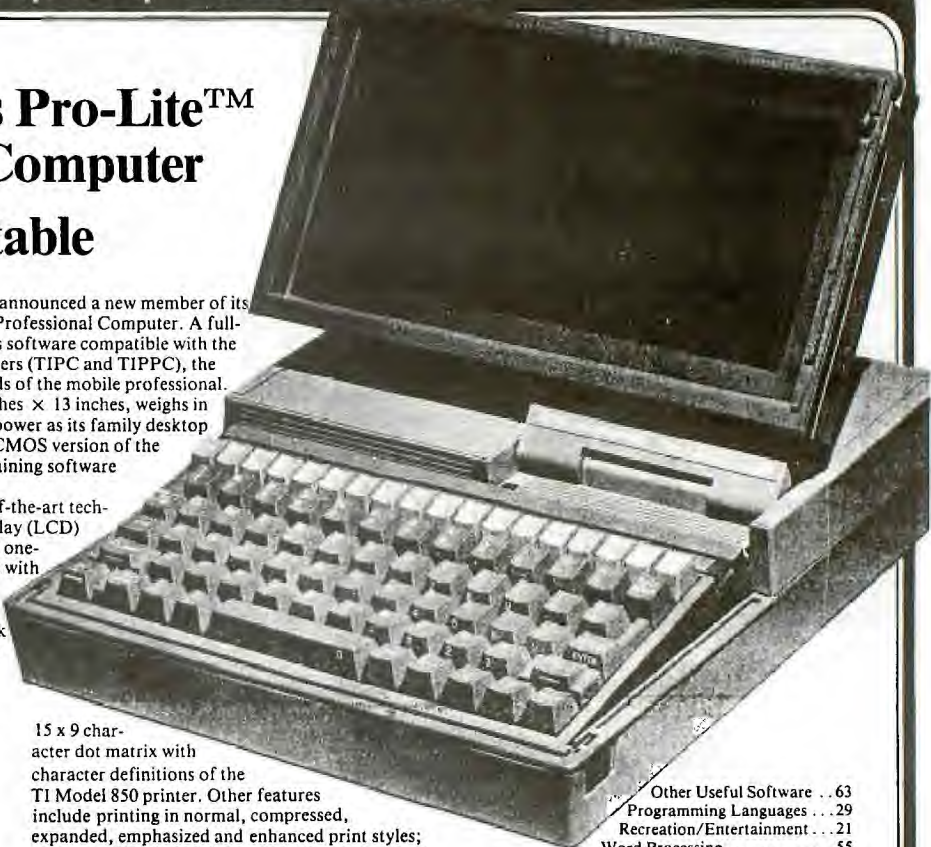
Memory on the TI Pro-Lite is expandable up to 768K bytes of memory by using 64K or state-of-the-art 256K-byte Random Access Memory (RAM) Expansion Boards. Memory expansion does not take up an option slot and is expandable directly on the motherboard. An External Monitor Interface Module will be available, allowing the user to utilize the TIPC color or black and white monitors with 3-plane graphics capability. Other option modules which fit into the option slots are: Async/Sync Communications Module (RS-232-C interface), 300 bps Internal Modem Module and a Solid State Software Module. The Solid State Software Module accepts ROM software (8 sockets for ROMs, EPROMs and PROMs) and emulates a disk drive.

The TI Professional Computer Family has a library of hundreds of software titles available covering the top-selling industry software. Many software titles will be directly available on 3.5-inch diskette media.

Following is a breakdown of titles by functional category. The approximate number of titles for each category is:

Without a doubt, the Texas Instruments Pro-Lite Professional Computer is a state-of-the-art computer, offering full PC functionality in a portable package.

IBM is a registered trademark of International Business Machines Inc.

Solid State Software, Pro-Lite, and NaturalLink are trademarks of Texas Instruments.

We Want to Hear From You!

Please send us your name and address so we may keep you informed. We also solicit your comments or suggestions concerning this issue of the Software Journal.

Please write to:

**Texas Instruments
P.O. Box 2909, MS 2013
Austin, TX 78769
Attn: Editor, Software Journal**

MICROPIX Offers More Than Standard Graphics

MICROPIX, a graphics toolkit for the Texas Instruments Professional Computer (TIPC) Family, has been released by Microsimulations Research. It includes a wide assortment of commands for producing creative art, bar and pie charts, flow charts, geometric patterns, designs and special effects.

MICROPIX, which takes advantage of the TIPC's high-quality graphics (720 by 300 pixels — 3-plane color graphics), was exclusively developed for the Texas Instruments Professional Computer Family, and is the first moderately priced program that places the creative graphics capability of the TIPC in the hands of the user.

Utilities for creating boxes, circles, ellipses, arcs, lines, rubberboxes, and rubbercircles are standard with MICROPIX, as they are with other good graphics programs. But MICROPIX also includes special commands for mirror images; for calling up a series of stored symbols and creating your own complex symbols which can be stored, called up, rotated, or scaled; for matrix drawing; and for slideshows (special effects created by sequentially changing characteristics on your screen).

One unusual set of features are the brush commands, which allow you to create a graphic effect in one area of the screen and specify that area as a brush. The brush can then be moved around the screen, laying out colors in unusual, dramatic, often startling and apparently three-dimensional patterns.

Additionally, you can include text in your design, and special expanding character sets allow you to produce poster art or covers for business reports. On-screen Help menus explain all commands and give examples which guide you through hands-on training for each command.

For beginners and for those experienced with computer graphics, MICROPIX provides an excellent collection of both standard and unusual graphic utilities using MS™-BASIC.

For more information, contact Microsimulations Research, 2110 22nd Street East, Minneapolis, Minnesota 55404.

The Company Behind TI Computers

Since solid-state electronics became a practical reality in the early 1950s, TI has been a world leader in digital electronics, from components to complete systems to applications. The company has been designing and manufacturing computers for more than 30 years and is a leading supplier of minicomputers, business system computers, computer terminals and printers. In the 1983 "Fortune 500," Texas Instruments ranked 77th in sales and ranked 31st in number of employees, with more than 80,000 worldwide. And TI believes in its products: it is now one of the world's most intensively computerized corporations, with more than 24,000 small computers and terminals currently in place worldwide — one for every 3.3 employees.

TI's success has been the result of hard work, superior research and vision. It has pioneered the lion's share of important innovations in microelectronics and has sold more integrated circuits, the basic building blocks of all computers, than any other company in the world. TI has also provided components and subsystems to other leading computer manufacturers for more than three decades. The wide range of advanced electronic systems that TI produces both benefit from and contribute to its eminence in computer technologies.

The hundreds of thousands of TI-manufactured computers, terminals and printers perform reliably year in and year out. Satisfied customers range from small businessmen to CEOs of some of the world's largest corporations. TI has surpassed all leading makers of personal computers in owner satisfaction, as measured in the 1984 Datapro survey of microcomputer owners. The TI Professional Computer (TIPC) was rated first in reliability, cost/performance ratio, technical support maintenance and overall owner satisfaction. One hundred percent of TIPC owners surveyed reported they would recommend their computer to others!

One reason for customer satisfaction is TI's

1. Texas Instruments Professional Computer
2. Texas Instruments Portable Professional Computer
3. Texas Instruments Omni 801 4/Model 850 Printer
4. Texas Instruments Omni 800 Model 855 Printer
5. Texas Instruments PORTABLE PRINTER
6. Texas Instruments Pro-Lite Professional Computer

strength in servicing its products. TI offers more than 200 service locations worldwide—120 throughout the U.S.—and more than 800 highly skilled professional service representatives, in addition to independent service dealers. These numbers reflect TI's continuing commitment to customer support.

But the company does not rest on past or current accomplishments. TI is pioneering speech technology for small computers and is leading the world in bringing voice command to reality. TI is simultaneously advancing technologies for making computers truly easy to use with such products as NaturalLink™ Commands for popular software applications — a new approach to "natural" computing through the use of simple English commands. Development of a powerful chip set for a token ring local area network will allow the interconnection of computers and peripherals within a building or campus. And TI is a world leader in artificial intelligence, with long-term R&D investments in this vital field. By continuing its major commitments to R&D, manufacturing capacity and marketing, TI intends to maintain its leading position in the field of small computers.

Texas Instruments has had a profound effect on the computer industry with a broad array of technical innovations. Hundreds of TI computer products are performing reliably all around you, and new products are continually being developed with your needs in mind. Real problem-solving capability, ease of use and productivity are the uppermost design considerations in everything TI builds. Texas Instruments knows its future success depends on satisfying the needs of its customers—your needs—today.

The Magazine for Tough Customers

To Publications and Communications, Inc. (PCI), publishers of *TI Professional Computing* magazine, the secret of success has been to pay attention to those segments of computer users that are relatively ignored by the general computer press. So far, it has made the Austin, Texas-based publishing company highly successful in the competitive field of computer publications.

One of the best examples of this type of successful publication is *TI Professional Computing*. Although at this point the magazine's sales numbers are not as large as *PC World* or *Byte* magazines, among TI Pro users the magazine is a valuable source of independent information for their machine.

"Our philosophy behind the publications is that *PC World* and *Byte* cannot afford to give the TI Pro user the attention that they give an IBM PC user," says Tom Clark, PCI publisher. "Therefore, that gives us a responsibility to respond to the information needs of the TI Pro user."

Since introducing the TI Pro magazine last June, PCI has been doing a lot of responding to their readers' inputs.

"Our editorial content is being formed by the response we have had from our subscribers," said Dean J. Whitehair, PCI assistant vice president and editor of *TI Professional Computing*. "We were surprised at the amount of suggestions, contributions, kudos and criticisms we have received from our readers. We have learned that our readers devour the magazine from cover to cover and then, more importantly, they respond to what they have read. After every issue, we have an instant assessment of how we did."

Whitehair said that it is not uncommon for some readers to respond to an article with four- or five-page, single-spaced letters. "We can't get by with producing a mediocre publication," he said. "Our readers keep us on our toes. In a sense, they are all contributors to the magazine. If we don't listen to them, then we wouldn't be in business."

Whitehair said that the average TIPC user seems to have a higher level of technical expertise than the average personal computer buyer. He added that a lot of business people are using the machine for specific and vertical types of businesses. Since starting the magazine, PCI has received subscriptions from a diverse audience, including psychologists, funeral home directors, veterinarians, architects, writers and politicians.

Probably one of the most popular features of the magazine is Bill Hansen's "Techs and Tips" column, where questions are answered about everything from placing disk drives on their sides to apparent software bugs. Hansen also has organized a "consulting editor's program" to enable specific software packages to be reviewed by those professionals who would use them. For example, an accountant would review a new accounting package and an attorney would review a legal office package.

TI Professional Computing magazine is also attracting the attention of third-party software and hardware vendors. Cindy Purinton, ad sales representative for the magazine, said that those vendors who specialize in selling TI-compatible products have been the advertising stronghold of the publication. Recently, however, as more software companies discover the TI Pro, they also are discovering the value of advertising in *TI Professional Computing*.

"Some of the large established software companies are realizing what some of the smaller vertical application software companies have known for years; that is, why should they spend their money going to a large unknown group of users, when they can reach a smaller, qualified audience with a machine-specific publication? If they're selling a product for the TI Professional Computer, we can help them," she said.

Whitehair admits that *TI Professional Computing* magazine is one of the staff's favorites even though they publish other publications. "TI Professional users realize that they have a good machine and believe me, they are tough customers. They are very loyal to the TI Professional and they are very vocal about their feelings that the TI Pro is a superior machine over the IBM PC."

"This brand of loyalty generates the kind of camaraderie among users that other computer makers can only wish for," he added. "It is also the kind of attitude that makes producing *TI Professional Computing* a joy."

TI Professional Computing is sold at TI Professional Computer Family dealerships, B. Dalton Bookstores and various newsstands throughout the nation. For more information, contact *TI Professional Computing*, Subscription Dept., 12416 Hymeadow Dr., Austin, Texas 78750 or call 512/250-9023.

MARCH SOFTWARE TAPE & DISK

This months tape - number 1985/3 - contains 8 board type games some of which should test your 'grey matter'. Programs on the tape and disk are :

Backgammon, End Chess, Hexpawn, One Check, Othello, Snakes & Ladders, TI Words (Scrabble) and Checkers.

I hope you all like this one.

Last months software offerings proved popular and as I have had no calls to the contrary I take it that all the tapes loaded for a change without difficulty. Let's hope that all the bugs we had with the recording of the tapes have been ironed out. I know that there is nothing more frustrating than to get a tape home, try to load it and no go. Anyway thanks to all for their patience and understanding with our problems.

OTHER SHOP GOODIES

It was unfortunate that the items ordered from Navarone did not arrive in time for the February meeting. As I write this (February 9th) they still have not arrived although I do have an invoice from Navarone which says they were shipped on January 29th. All being well they should be here very shortly which will give me the opportunity to have a look at the much awaited Console Writers. This item will be a real blessing for those who want to get into word processing for minimum outlay.

All members are warned that while prices should be able to be held at normal for this shipment future orders from Navarone are going to cost you more. Just have a look at what our dollars plunged to compared to the US dollar - 76c and going down!

Plenty of the latest issue of Home Computer Magazine are available - $7 at meetings - the Best of 99'er is also available again for $26. Also in stock I have a few copies of Smart Programming Guides for $8 each.
It is not intended to purchase any further copies of the book Introduction to Assembly Language however there is a similar publication available in the USA which looks to be an excellent item. Some of these will be ordered shortly and price and availability will be notifed later.

And now for the first time in this column is a short program supplied from one of my correspondents in the States - Chris Bobbitt. Called Mac Calculator I think you will find it interesting.

SPECIAL NEWS
A report of meetings and times of our Regional Home Groups around Sydney and New South Wales.

BANKSTOWN REGIONAL GROUP
********* ******** *****

The January meeting had only a small turnout, most probably a result of the holidays; however, the meeting was still an enjoyable one. Shane Ferrit's expertise on 'Assembler', 'Forth', and 'Basic' helped(as it always does) to make the meeting a success.

Anyone interested in joining in on the fun of the GRAPHX Competition and who does not have access to a copy of the program is most welcome to come along and use ours. Just 'phone first on 02. 708 4293, useable also for other queries about our group.

Just a reminder that our meetings are on the 3rd Sunday of the month at 15/479 Chapel Rd Bankstown, commencing 7.00pm until approx. 9.30pm. We would like to receive some feedback from potential and current group members regarding whether the meetings should be held on a weeknight or left on the Sunday.

The B.B.S. is the main feature with software downloading from the modem. While on the subject of software, anyone who can bring along their own

composition or new software for show would be much appreciated.

We plan some most interesting features in '85 and this will include demonstrations of the TI WRITER, how to use a printer, and many more surprises. The general aim of the meetings is to be a learning experience so everyone can get more enjoyment from their TI. That's all for now, until next time...

Yours the TI computing way, David Mayo and Paul Cohen.

TEXAS INSTRUMENTS
TI-99/4A
USERS GROUP
ILLAWARRA

REGIONAL REPORT.

The committee for the year is, Bob Montgomery as Regional Co-Ordinator, plus Rolf Schreiber, Lou Amadio and Geoff Trott.
It was decided to have the meetings on the 3rd Monday of each month. The first for the year was held on the 18th February.

The new committee has decided that each meeting night will have a special topic to demonstrate either one of the computing languages on a specific program e.i.:Spreadsheets.

A new meeting place was also recommended. It will be St.Matthews Church Hall, Philip Cres; Mangerton.

We meet at 7:30pm. All TI.S.H.U.G members are invited to attend any meeting organised. You can contact Bob Montgomery on (02)286463.

Get Acquainted!

with our
TECHNICAL CO-ORDINATOR

R O B E R T P.

Well how did everyone like the Full-Day workshop?

As was mentioned in last months Newsletter Chinon and Teac disc drives were available at quite good prices. Unfortuneatly only one person was interested in these drives. The prices for the Chinon drives were for a limited time only, and will rise to over $200 + tax. This means that those who did not act quick enough have now missed out on the special price deal.

Custom length printer cables (up to 4 metres) are available for $30 + $1.50/mtr. (add $3.50 for postage & hanling). For those having printer troubles using the "PIO" then a special cable to correct this problem will cost $40 + $1.50/mtr. (add $3.50 for postage & handling).

32K memory card kits (printed circuit board + some of the inter-face components. Kit does not include memory components.) for the expansion box are available for aprox. $50. Contact Peter Schubert (02)358-5602 a/h for any enquiries.

Technical manuals are availale for $15 at club meetings or from the club Librarian (please add $3.50 postage & handling).

If anyone has a technical problem or wishes to contribute technical articles then contact me (ROBERT) on 602-4168 between 5.00-8.30 PM or send a letter to
TECHO TIME
P.O. BOX 595
MARRACKVILLE 2204

ANYONE WISHING TO OBTAIN INFORMATION, PLEASE SEND A SELF-ADDRESSED ENVELOPE (WITH SUFFICIENT POSTAGE STAMPS) TO THE ABOVE ADDRESS.

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REGIONAL NEWS CONTINUED:
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CENTRAL COAST REPORT:
Co-Ordinator:Russell Welham (043)924000.
The next meeting will be conducted at the home of Mrs Cummins, 48 Manoa Rd, Budgewoi (049)909648 on Saturday 9th March 1.30pm-4.30pm.
TOPIC: Questions and Answers.

Visitors welcome. Club software available to members.

TI.S.L.U.G. SUTHERLAND REPORT:
For those living in and around the Southerland/Engadine area, please contact LORRAINE ASHBROOKE on (02)5204932. The get-to-gethers are held on the last Saturday of the month at 2.00pm . The next meeting will be on Saturday 30th at 163 Cooriengah Heights Rd,Engadine

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Members living in the Blaxland area can contact Robert Vines at 28 Haymet St, Blaxland for details of their Regional group meetings.

MARRICKVILLE/GLEBE REPORT:
The next meeting of this Regional group will once again be conducted at the home of Mike Slattery, 43 Boyce St, Glebe on the 2nd tuesday of each month (8pm). For more details...phone(02)6920559 after 8.30pm most nights.

LIVERPOOL REGIONAL REPORT:
The next meeting of the

See you at the TI.S.H.U.G stand at PC85. If you can help, call John Robinson NOW.

This is your invitation to attend Australia's largest and most exciting personal computer exhibition.

13 – 16 March 1985 Centrepoint Sydney

Wednesday 13 March 9.00am – 7.00pm
Thursday 14 March 9.00am – 7.00pm
Friday 15 March 9.00am – 7.00pm
Saturday 16 March 9.00am – 5.00pm

With the Compliments of the Organisers

THE FOURTH AUSTRALIAN

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CENTREPOINT

PC
85

SYDNEY 13-16 MARCH 1985

(SAMPLE TICKET ONLY)

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** TI.S.H.U.G. CLASSIFIEDS **
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There are only three things to remember, when you wish to use this service...

(1) Deadline for SND is the Thursday prior to the Second Saturday of the month.

(2) TI-99/4(A) computers will not be sold in this publication. Only Peripherals and software are permitted.

(3) Please PRINT your name on the Classified Ads card on the inside cover of this Newsletter...where names are not supplied with the adverts listed below, the names were unreadable.

WANTED: TI Perpheral Expansion Box with or without cards. Phone 4513032.

TO SELL:Peripheral Box, RS232, 32k card, TI Disk drive, and 3 other carts. All manuals,Tapes, Disks and Magazines. 34cm CTV. Replacement value over $1900. asking $1500 will separate some items. Ring (045)765291.

HELP REQUIRED: Programs to use Minimem to simulate RS232 through Tape or Joystick port. Two-way communication required, draw with lightpen on Screen.
Please call Bruce Harris on 661-2627.

FOR SALE: Touch Typing Tutor, Munchman, Return to Pirates Isle. $18 each. Phone Robert on 94-7477 after 5pm.

Liverpool Regional group will be on Friday 8th March (7:30pm) at the home of C.BOLISEN, 4 Madeline Ave. Nortmead. We had a very good turnout at the last one, with visiting members from all over. Hope to see you at our next one. See you there.

NEPEAN REGIONAL REPORT:
Meetings are held on every 1st and 3rd Monday at the Penrith Police Citizens Boys Club. For more details...contact:
Malcolm Tutor (047)333671 or Mel Copeland (047)351340.

FOR DETAILS OF OTHER REGIONAL GROUPS, CONTACT JOHN ROBINSON (TI.S.H.U.G SECRETARY) ON (02)8480956.

```
100 ! *********************
110 ! *                   *
120 ! * THE MAC TI        *
130 ! * CALCULATOR        *
140 ! * FOR MOUSE LOVERS  *
150 ! * EVERYWHERE        *
160 ! * BY CHRIS BOBBITT  *
170 ! * MID ATLANTIC 99ER *
180 ! * USERS GROUP       *
190 ! * INSPIRED BY THE   *
200 ! * APPLE MACINTOSH   *
210 ! *       1984        *
220 ! *                   *
230 ! *********************
240 ON WARNING NEXT :: ON ER
ROR 250 :: CALL MAGNIFY(3)::
 A$="" :: T,A,ONN=0 :: C
ALL SETUP
250 CALL INKEY :: CALL CHECK
(A$,A,T,ONN):: GOTO 250
260 SUB INKEY
270 CALL JOYST(1,X,Y):: CALL
 KEY(1,K,S):: IF K=18 THEN S
UBEXIT ELSE CALL MOTION(
#1,-Y*4,X*4)
280 GOTO 270 :: SUBEND
290 SUB CHECK(A$,A,T,ONN)::
CALL MOTION(#1,0,0,#3,0,0)
300 CALL POSITION(#1,X,Y)::
CALL GCHAR((X+7)/8,(Y+7)/8,C
H):: CALL COINC(#1,#3,10
,CO):: IF CO<>-1 AND CH<64 O
R CH>127 THEN SUBEXIT
310 IF CO=-1 THEN CALL ONNI(
ONN,A,T,A$):: GOTO 570
320 IF ONN=0 THEN SUBEXIT
330 C=INT((CH-63)/4):: IF C<
(CH-63)/4 THEN C=C+1
340 IF C>10 THEN 370
350 IF LEN(A$)=9 THEN SUBEXI
T ELSE A$=A$&CHR$(47+C)
360 A=VAL(A$):: CALL DISPL(A
$):: CALL SOUND(-100,900,3):
: SUBEXIT
370 IF C=15 AND LEN(A$)<9 TH
EN 540 ELSE IF C=16 THEN 490
 ELSE CALL SOUND(-100,70
0,5)
380 IF OP=0 THEN T=A :: OP=C
-10 :: A$="" :: CALL DISPL(A
$):: GOTO 570
390 OP1=C-10 :: IF OP1<>OP T
HEN ON OP GOTO 400,410,420,4
30 ELSE 440
400 OP=OP1 :: T=T+A :: A$=""
 :: CALL DISPL(A$):: SUBEXIT
410 OP=OP1 :: T=T-A :: A$=""
 :: CALL DISPL(A$):: SUBEXIT
420 OP=OP1 :: T=T*A :: A$=""
 :: CALL DISPL(A$):: SUBEXIT
430 OP=OP1 :: T=T/A :: A$=""
 :: CALL DISPL(A$):: SUBEXIT
440 IF OP<>0 THEN ON OP GOTO
 450,460,470,480
450 T=T+A :: A$="" :: CALL D
ISPL(A$):: SUBEXIT
460 T=T-A :: A$="" :: CALL D
ISPL(A$):: SUBEXIT
470 T=T*A :: A$="" :: CALL D
ISPL(A$):: SUBEXIT
480 T=T/A :: A$="" :: CALL D
ISPL(A$):: SUBEXIT
490 CALL SOUND(-100,800,5)::
 IF OP=0 THEN SUBEXIT ELSE O
N OP GOTO 500,510,520,53
0
500 T=T+A :: A$=STR$(T):: CA
LL DISPL(A$):: A$="" :: T,A,
OP=0 :: SUBEXIT
510 T=T-A :: A$=STR$(T):: CA
LL DISPL(A$):: A$="" :: T,A,
OP=0 :: SUBEXIT
520 T=T*A :: A$=STR$(T):: CA
LL DISPL(A$):: A$="" :: T,A,
OP=0 :: SUBEXIT
```

```
530 T=T/A :: A$=STR$(T):: CA
LL DISPL(A$):: A$="" :: T,A,
OP=0 :: SUBEXIT
540 XX=POS(A$,".",1):: IF XX
=1 THEN SUBEXIT ELSE A$=A$&"
."
550 IF LEN(A$)=1 THEN CALL D
ISPL(A$):: CALL SOUND(-100,9
00,5):: SUBEXIT
560 A=VAL(A$):: CALL DISPL(A
$):: CALL SOUND(-100,900,5):
: SUBEXIT
570 SUBEND
580 SUB ONNI(ONN,A,T,A$):: I
F ONN=0 THEN 590 ELSE 610
590 ONN=1 :: CALL LOCATE(#3,
41,65):: CALL SOUND(50,-5,20
,1100,27,110,28):: FOR K
=1 TO 50 :: NEXT K :: CALL S
OUND(100,1200,11)
600 FOR I=1 TO 3 :: A$="....
....." :: CALL DISPL(A$):: A
$="" :: CALL DISPL(A$)::
NEXT I :: A$="" :: T=0 :: S
UBEXIT
610 ONN=0 :: CALL LOCATE(#3,
57,65):: CALL SOUND(50,-5,20
,1100,27,110,28):: DISPL
AY AT(6,11)SIZE(9):":::::::::
:"
620 FOR I=1 TO 3 :: CALL SOU
ND(-1000,1100,1):: FOR K=1 T
O 20 :: NEXT K :: NEXT I
 :: A$="" :: T,A=0 :: SUBEND
630 SUB DISPL(A$)
631 IF LEN(A$)<=9 THEN DISPL
AY AT(6,11)SIZE(9):RPT$(":",
9-LEN(A$))&SEG$(A$,1,9)E
LSE IF VAL(A$)>999999999 THE
N DISPLAY AT(6,11)SIZE(9):RP
T$(".",9)ELSE DISPLAY AT
(6,11)SIZE(9):SEG$(A$,1,9)
640 SUBEND
650 SUB SETUP :: CALL CLEAR
:: CALL SCREEN(2)
660 CALL CHAR(36,RPT$("0",48
)&"03070F1F3E7C7830")
670 CALL CHAR(64,"C080030404
04040505050606030080C00301C0
6060A0A0A020202020C00001
03")
680 CALL CHAR(68,"C080010301
0101010101010101030080C0030180
8080808080808080C00001
03")
690 CALL CHAR(72,"C080030400
00000102040404070080C00301C0
2020408000000000000E00001
03")
700 CALL CHAR(76,"C080030400
0000000000004030080C00301C0
20202020C020202020C00001
03")
710 CALL CHAR(80,"C080040404
04040700000000000080C0030140
40404040E040404040400001
03")
720 CALL CHAR(84,"C080070404
04040700000000004030080C00301E0
00000000C020202020C00001
03")
730 CALL CHAR(88,"C080030404
0404070404040403080C00301C0
20000000C020202020C00001
03")
740 CALL CHAR(92,"C080070000
00000000010102020080C00301E0
20204040808000000000001
03")
750 CALL CHAR(96,"C080030404
04040304040404030080C00301C0
20202020C020202020C00001
03")
```

```
760 CALL CHAR(100,"C08003040
4040403000000004030080C00301C
020202020E020202020C0000
103")
770 CALL CHAR(104,"C08000000
101010F0F010101000080C003010
000808080F0F080808000000
103")
780 CALL CHAR(108,"C08000000
0000000F0F00000000080C003010
00000000F0F000000000000
103")
790 CALL CHAR(112,"C08000000
80402010102040800080C003010
0001020408080402010000000
103")
800 CALL CHAR(116,"C08000000
101000F0F000101000080C003010
000808000F0F000808000000
103")
810 CALL CHAR(120,"C08000000
00000010100000000080C003010
0000000000808000000000000
103")
820 CALL CHAR(124,"C08000000
00F0F00000F0F00000080C003010
00000F0F00000F0F00000000
103")
830 CALL CHAR(128,"C0E0733D1
F0F070707070F3F7F70000000006
CFCFCFCFEFEFEFEFFFFFF7E1
C08")
840 CALL CHAR(132,"000000000
00000000000000000000003F1F3
F1F3F1F3F1F3F1F3F1F3F1F3
F1F")
850 CALL CHAR(58,"",59,"0000
000000003030")
860 FOR I=1 TO 14 :: CALL CO
LOR(I,2,2):: NEXT I :: CALL
CHAR(136,RPT$("F",16))
870 CALL CHAR(137,"3F7FFFFFF
FFFFFFF",138,"FEFEFFFFFFFFFF
FF",139,"FFFFFFFFFFFFF7F3
F",140,"FFFFFFFFFFFFFEFC")
880 CALL VCHAR(5,11,136,14):
: CALL VCHAR(5,23,136,14)::
DISPLAY AT(4,9):CHR$(137
)&RPT$(CHR$(136),11)&CHR$(13
8)
890 FOR I=5 TO 7 :: CALL HCH
AR(I,12,58,11):: NEXT I :: D
ISPLAY AT(9,10):"DF HJ L
N hj ":TAB(10);"EG IK MO ik
": :TAB(10);"PR TV XZ ln ":T
AB(9);" QS UW Y[ mo "
900 DISPLAY AT(15,10):"\^ `b
df pr ":TAB(10);"]_ ac e[ q
s ": :TAB(10);"xz @B |
tv "
910 DISPLAY AT(19,10):"y[ AC
}"&CHR$(127)&" uw ":TAB(9);
CHR$(139)&RPT$(CHR$(136)
,11)&CHR$(140)
920 FOR I=1 TO 4 :: CALL HCH
AR(I*3+5,12,136,11):: NEXT I
 :: FOR I=11 TO 23 STEP
3 :: CALL VCHAR(8,I,136,12):
: NEXT I
930 CALL VCHAR(5,11,136,12):
: CALL VCHAR(5,23,136,14)::
CALL COLOR(2,2,15,3,2,15
,4,2,15,14,16,2):: FOR I=5 T
O 13 :: CALL COLOR(I,16,5)
940 NEXT I :: CALL SPRITE(#1
,128,11,100,200,#3,132,12,57
,65):: SUBEND
```

Jenny's YOUNGER SET under 18's page

Hi! Kids, well, this month we have a smaller area within the SND, because of the lack of mail from you. Come on gang, lets hear from you with your programs you have written, or high scores for the HALL OF FAME.

I have received three letters, one of them was sent to me on the Club's BBS. As I mentioned last month, Younger Set is now available for you under 18's in both this NewsDigest and, for those with a modem connected to their computer...on our TEXPAC Bulletin Board Service. I'll tell you a little bit more about that in a moment. Now to these letters...

Dear Jenny,
My name is Ben Chambers and I am 7 years old. My highest score for Alligator Mix is 51.
　　　　　Yours Faithfully,
　　　　　　Ben Chambers.

The other letter I received was as follows...

Dear Jenny,
Thanks for solving my problem. Here is some more scores for the Hall of Fame...
DECATHLON - 11398
SNOW TREK - 10
CAR WARS - 4560, 4200
　　　　　Yours Sincerly,
　　　　　　Justin Chambers.

Thank you Ben and Justin. It seems that we have a buisy house-hold. I am interested to know if you both use the same computer, or do you set aside time for both of you to use it? I hope that you don't fight over its use? Its nice to hear from both of you again.

Each Sunday, I call over to Shane's place to make myself available for any Younger Set members to CHAT to me via the BBS. So if you either have a modem, or know of someone who has one, why not call the BBS and have a chat.
And now that letter...

Hi Jenny,
My name is Brian Grinter, and I have had my computer for about a year. I have the computer, TI Peripheral Box with Disk Drive, RS232 card, Plus Modem and Speech Synthesizer...I hope to get my 32k card soon.
I would like to leave some high scores for the Hall of Fame (though my PARSEC score should be in the Hall of Shame!!...324800. Star Trek:1665325 Dig Dug:94680 Miner 2049'er:12410 and Microsurgeon:531200. I have finished Adventureland, Pirate's Isle, Mystery Fun House and Return to Pirate's Isle. All of these High Scores can be verified by my mum or dad.
　Bye for now.
　　Brian.

Brian is 13 years of age, and his USERNAME on the BBS is INDIANA. He is indeed a very lucky boy to have all of that equipment. Thank you Brian, and I look forward to chatting to you one Sunday on the BBS.

Before I sign off for yet another Sunday, I thought that I would mention a new contest... The prize will be proballly the ONLY module of its kind in Australia...POLE POSITION. This module was made by Atari for the TI-99/4(A) computer (however, it will not work on the V2.2 version). Its a 3D Car race, and a lot of fun.

THE CONTEST: I want you to draw a cartoon (by hand), like those printed in this issue of the SND, computer related. You can submit as many entries as you wish, however you are asked to use a fine BLACK felt-tipped pen to create your picture.
This competition will not be judged unless 10 or more entries are received.
So please, start working.

The contest will be run over a period of 2 months, and the deadline for entries will be Saturday 4th May with the winner being announced in this column within the June issue of the SND.

Here is a program to type in, if you have both Speech Synthesizer and a Terminal Emulator #2 module...

```
                TIMES TABLE
                ===========
ENTER TIMES TABLE:> 9


          9 TIMES TABLE.
               12 * 9
              =108
THAT IS CORRECT
        1 FOR SAME TIMES
        2-FOR NEW TIMES
```

```
100 REM   TIMES TABLE
110 REM   BY DAVID STOREY
120 REM   TERMINAL EMULATER II
130 CALL CLEAR
140 PRINT TAB(8);"TIMES TABLE."
150 PRINT TAB(8);"============"
160 OPEN #1:"SPEECH",OUTPUT
170 PRINT #1:"//145 75"
180 PRINT #1:"TIMES TABLE"
190 INPUT "ENTER TABLE TO VIEW ":N2
200 N1=0
210 N3=0
220 FOR PRIN=1 TO 12
230 N1=N1+1
240 N3=N1*N2
250 PRINT TAB(7);N1;"X";N2;"=";N3
260 PRINT #1:N1;"TIMES";N2;"=";N3
270 NEXT PRIN
280 PRINT "1-SAME TABLE"::"2-NEW TABLE":
:"3-END"
290 CALL KEY(0,K,S)
300 IF S=0 THEN 290
310 ON K-48 GOTO 200,180,320
320 CALL CLEAR
330 END
```

```
100 REM   TIMES TABLE
110 REM   DAVID STOREY
120 REM   TI BASIC
130 CALL CLEAR
140 PRINT TAB(8);"TIMES TABLE"
150 PRINT TAB(8);"==========="
160 INPUT "ENTER TIMES TABLE:> ":TT
170 RANDOMIZE
180 N=INT(RND*12)+1
190 ATT=1
200 CALL CLEAR
210 PRINT TAB(6);TT;"TIMES TABLE."
220 PRINT TAB(11);N;"*";TT
230 INPUT "         =":ANS
240 TOT=N*TT
250 IF ANS=TOT THEN 340
260 PRINT "THAT IS INCORRECT"
270 PRINT "TRY AGIAN"
280 ATT=ATT+1
290 IF ATT=4 THEN 400
300 FOR D=1 TO 300
310 NEXT D
320 CALL CLEAR
330 GOTO 220
340 PRINT "THAT IS CORRECT"
350 PRINT TAB(7);"1 FOR SAME TIMES"
360 PRINT TAB(7);"2-FOR NEW TIMES"
370 CALL KEY(0,K,S)
380 IF K=49 THEN 180
390 IF K=50 THEN 130 ELSE 370
400 PRINT "THE CORRECT ANSWER IS ";TOT
410 FOR D=1 TO 1000
420 NEXT D
430 CALL CLEAR
440 GOTO 350
```

Bye for now.
Hope to hear from you.

Jenny

```
o==================================o
| SUPER  COMPETITION ...           |
| ----   ------------------------  |
|                                  |
| all the latest news about the    |
|                                  |
|   G R A P H X   Contest.         |
o==================================o
```

Here is the very latest news concerning the new GRAPHX contest: This event will consist of 3 areas for Jugding by RON DAVIS (Author) & SHANE ANDERSEN...

(1)....* BEST CLIPBOARD ANIMATION,
(2)....* BEST SCREEN PICTURE, and
(3)....* BEST PRINTABLE PICTURE.

The contest will commence from Saturday 2nd February and will go through to 1st of June. So there is plenty of time for you to buy your copy of GRAPHX and get to work and create a masterpiece.

You can submit as many entries as you like ON DISK, however, when those disks are submitted, they will become property of TI.S.H.U.G. instead of an Entry Fee.

THE PRIZES: If you are a lucky winner of one of the 3 sections...you will WIN

(1)....* A complete collection of all entries submitted, and

(2)....* The very latest GRAPHX UTILITY disk to be marketed by June'85. This GRAPHX UTILITY will feature BANNER PRINTING & EXTRA HUGE PICTURES etc from your GRAPHX program. A sample of this will be show at the FULL DAY TUTORIAL WORKSHOP on Saturday 2nd February. This is one program you will want to get for your GRAPHX program.

Join in the fun...and get your entries in A.S.A.P. to

            TI.S.H.U.G. GRAPHX CONTEST.
              P.O. BOX 595. MARRICKVILLE.
              N.S.W. 2204.

This competition is for any Australian member of TI.S.H.U.G...and the Judges decision of winners will be final.

If you still haven't obtained your GRAPHX program...it is available from either RON DAVIS (02)7139506 or COMPUTER WAVE P/LTD. 325 George St. Sydney N.S.W. 2000 at a charge of only $50.00.

There are three versions...*EXTENDED BASIC. *EDITOR/ASSEMBLER and *MINI MEMORY. The latter has a few more Clipboards. You'll require 32k of memory...Disk system. If you wish to submit the SCREEN/PRINTER entry...you will also require RS232/PIO and DOT MATRIX PRINTER.

Good Luck.
Lets see how creative you can be.

THE JUDGES !!!

```
:::::::::::::::::::::::::::::::::::::::::::::
::                                       ::
::  HIGH QUALITY MODEM FOR P.E.BOX       ::
::                                       ::
:::::::::::::::::::::::::::::::::::::::::::::
```

Now you can talk to the World with this new Modem ON A CARD. A Direct connect Modem that fits neatly out-of-sight in your Peripheral Expansion Box.

Built for extra-long life and reliable performance.
This Modem uses SPECIAL QUALITY COMPONENTS
(I.E.Metal Oxide film resistors and Tantalum Capacitors used through-out). Commercially built modems costing much more, do not use these quality companants unless built to Government specs.

By using the latest technology Modem Chip(I believe this is the ONLY Modem on the market using this chip) and simple design which has now been well proven by our own TI.S.H.U.G. TEXPAC-BBS Communicators.

I have been able to keep the price to well that of most others.

So before you buy, compare the quality and price. These modems are built entirely by me, so supplies are very limited.

PHONE:(Username:PETESAKE) on
[02]3585602 a/h,
TI Users in Queensland, contact
HUMPHREY LINDLEY (07)2636161.

----- UNBEATABLE PRICE & QUALITY -----

****> C O M M I N G S O O N <****
Stand-a-lone MODEM which does not need RS232 for under $200. Don't miss your next SND for further details.
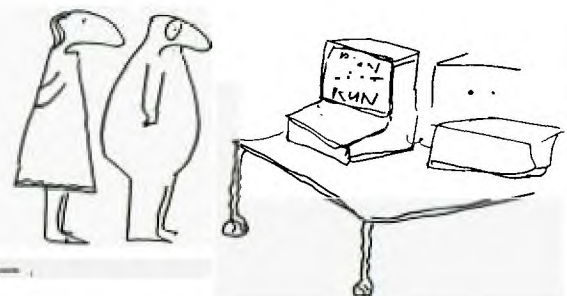
```
o-------------------------------------o
|                                     |
|   REVIEWS REVIEWS REVIEWS REVIEWS   |
|   REVIEWS REVIEWS REVIEWS REVIEWS   |
|                                     |
o-------------------------------------o
```

The following pages of this SND are dedicated to some new software either soon to be, or have just been released.

The first one is by a young member of our group, Darren Bellia. He has created a space game entitled STAR FIGHTER in Extended Basic and sells at selected computer retail outlets for only $19.95.

STAR FIGHTER presents a galactic war game with two action packed screens. The first is a computer simulation in which you control a computer rader device. The object of the first pattern is to steer the rader onto one of the attacking ten alien ships and press the fire button. The rader will flash colours and if the alien is in your sights, you will score points on the value of the alien destroyed. You must destroy all ten aliens within the time limit, otherwise your game is over and yu don't get a chance to defend your planet.

The second pattern is by far the most challenging pattern, you control a gunner ship above your planets surface, and can only move it horizontally cross the mountains below you. Aliens will fly down to the mountains in order to destroy you. You must dodge the alien ships and the programmed misiles that they fire at you, in an effort to distroy you. The alien move rapidly and often dodge your bullets that you can rapidly fire. A bonus ship is awarded at 12,000. Every so often, a bonas ship will fly over the top of the screen mearly for you to shoot, If you can destroy that alien, you will score double points.

The game play is very fast and optional speech makes this game interesting. Both high res graphics and good sound effects are two more points with this game.

This is the first Commercial cassette program that Darren has created. Darren is a member of the Under 18's YOUNGER SET and must be congratulated for his attempt to get his computer to pay for itself in this way. We wish him every success.

The other commercial cassette game now available is called STAR LORD by John Smart.

STAR LORD is also by a very enterprising young man, who calls his game THE ULTIMATE SPACE GRAPHICS ADVENTURE. With STAR LORD, you join the ranks of the elite mercenary starfighter corps and search the galaxy for the enemy of the Empire of Trygonia. Hunt down the Trygonians and destroy them in order to rise through the ranks of the Galactic Empire from 'NEW PILOT' to the ultimate rank of 'STARLORD' the supreme military leader of the empire. You must use all of your skills to destroy as many enemy craft as you can, returning to one of the two Starbases to recharge and refuel your craft, and to receive bouty for ships you destroy as you play.

Full use of graphics have been used in this space adventure. Imagination has been taxed to its very best with this Extended Basic program with the introduction of BLUE STAR RAIDERS, STELLER PIRATES, SPHERE GUNNERS, UFO SAUCERS, STAR CROSS, DIAMOND STAR CRAFT, and STAR DESTROYERS.

Another good example of a young mind with fast brainwork and creativity.

The third program we want to share with you this month, is available on Disk only, and you'll need Extra memory, and will sell for around $25.95. It's called TI99-OPOLY.

TI99-OPOLY: Is supurb! Based on the much loved, and very popular board game of MONOPOLY, this game has a good on-screen full board with each section numbered and fast ease-of-reference sections. TI99-OPOLY is also produced by a member of TI.S.H.U.G, ROSS MUDIE. As you play this game of skill, you will instantly notice just how much time and efford Ross has put into preparing it. It comes with a 21 page book of instructions which has been set out so that the rules of the game can be read with little effort. It is interesting to notice that the pictures created within the rule book, have been designed with the use of that other smash hit program called GRAPHX.

This game is a real MUST when it comes to ACTION and FUN. By the way, the computer is the banker, and pays out when it should, but also takes away when it must. So with this game, you won't get the chance to cheat. This is one game I personally recommend, if you are just a little tired of shoot-em up games, and just want to have fun with between 2 and 3 players from ages 8 to 80. It will be money well invested.
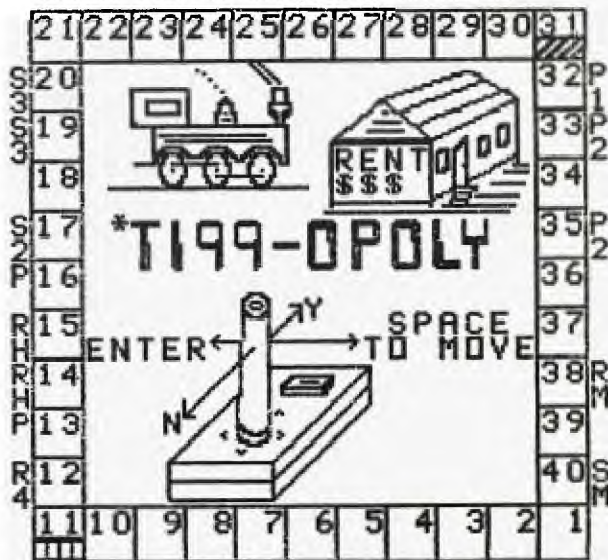
HAVE YOU STARTED TO DESIGN THAT PICTURE IN THE BIG "GRAPHX" CONTEST YET? Don't leave it to late, remember, your pictures will be published, and you will win some great prizes.
Read elsewhere in this publication for details on the BIG GRAPHX CONTEST.

THE TEXAS INSTRUMENTS HOME COMPUTER LETS CHILDREN AND ADULTS DO MORE THINGS WITH MORE EASY-TO-USE PLUG-IN CARTRIDGES THAN ANY OTHER COMPUTER IN THE WORLD.

PROGRAMS FOR THE TI 99/4A from LINDLEY and ASSOC.

QUICK-COPYer II

Backup your disks, including Proprietory disks, in 3 passes or less! (2 passes or less with Mini Memory!) full or selective backup. Initialize the copy disk in any format (including double density). transfer single sided disk to double density, or vice versa. Reorganizes the copy disk for faster access, and less wear and tear on your drives! automatically checks every byte written on the disk, so you know your copies are good! Save time, save work! **$59.95**

Req: 32k, and Ex.Basic/or Ed-Assy/ or Mini Mem

DISK MANAGER III

A resident disk manager program! No more swapping modules! Save time! Save wear and tear on your console! Contains all the most frequently used functions of the Disk Manager module. Always in memory, ready for instant use, at any time! Get a disk catalog on the screen or printer, initialize a disk in any format (including double density), change a disk name, change a file name, delete a filename, change file protection. All from command mode, without disturbing your program in memory, and without using the Disk Manager module! Each function can also be used in your Ex-Basic program! **$59.95**

Req: 32k, Ex-Basic

DATA BASE 99

At last! A fast flexible, friendly, full featured data base! Create your own Mail Lists, Cricket scores, List of collectibles, etc. Define your own input format of up to 28 fields of up to 28 characters each (maximun 245 chars. per record). 700 records on double sided disk, 350 on single sided. Multiple key sort. Select subfiles, based on any criteria. Define your own output format: Print any field, in any column, on any line.

Req: Disk, 32k, Ex-Basic **$59.95**

RS-WRITER

Now you can load and run TI-Writer (not included) with Ex.Basic, or Ed/Assm, or Mini Mem. Much more convenient and faster too. No need to swap Modules, Saves Time, Save wear and tear on your console. **$59.95**

Req: Ex.Basic/ or Ed-Assy/ or Mini Mem.

THE ULTIMATE CATALOGUE

Find the location of any program, fast. Automatically produces a alphabetical catalogue of all your disks, plus a report of the space available on each disk. Included also is Alphamaint this allows you to add/delete programs to your Catalogue without resubmitting you Disk collection **$19.95**

Req: Ex.Basic, Printer

DISK LABELLER

Shows you instantly which programs are on a disk. Produces a disk catalog, in condensed or mini print on a mailing label (or printer paper) which may be attached to the disk or disk cover. Shows how filenames are spelt and space remaining on the disk. Capable of printing up to 45 filenames per disk **$19.95**

Req: Ex.Basic, Printer

GRAPHX

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Req: 32k, J/Stick, Printer and or Ex.Basic, Ed/Essy, Mini Mem.

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This 2 disk package is a single step approch to editor assistance. the program checks your text file against a 20,000 word set of dictionaries, incorporates idenfied corrections into your text and provides for update of user-developed dictionaries. It will check all Dis/Var 80 files which follow TI-WRITER and ED/ASSY editor character conventions. Each diskette is identified to a specific purchaser by Serial #.

Req: 32k TI-Writer or Ed/Assy. **$59.95**

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THE CUT-UP PAGE

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ITEM	: COST
	: _____
	: _____
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I enclose:-
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Use this form for the following...

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Account
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Expiry Date:[_][_]/[_][_]/[8][5].
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o-------------------o
|                   |
|    LOT NUMBER     |
|                   |
o-------------------o
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SELLING NAME:_____.

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ITEM (LIMIT of 5): (1)_____ NAME OF BUYER_____
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