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Noël

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PUBLICATION NO. 885833

December
1984

Sydney News Digest

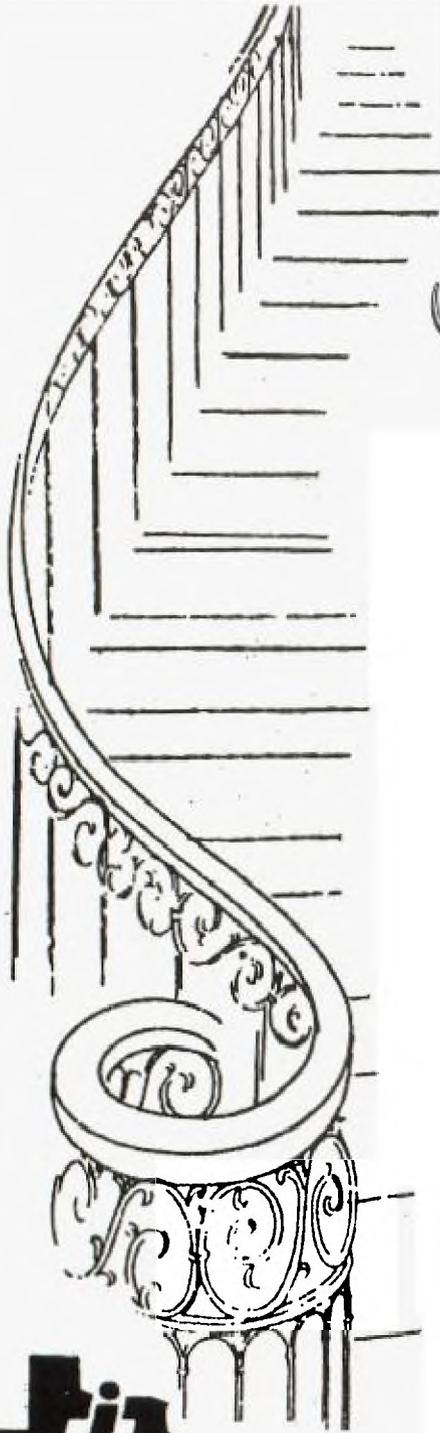


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SECRETARY'S NOTEBOOK with J.R.

Hi! As I sit down to write this column for the Christmas Edition of the SND it is a good time to reflect on the past year. The 99/4A is alive and well and appears to be going from strength to strength. In any one week my mail contains information of new support for this computer from around the world.

As an example I received a complimentary copy of a new newsletter entitled 4A TODAY. The format of this new source of information is along the lines of Craig Miller's "THE SMART PROGRAMMER". In the second issue dated September 1984 you will find a wide range of topics covering new software and hardware reviews, and programming tips. There is a very interesting article on the new Corcomp 9900 Disk Controller card Disk Manager. Most of the disk drives sold by TI as single density drives are in fact double density. With the Corcomp card you can immediately double the capacity of your drives from 90K to 180K fully formatted. It is reported by Mark Chance, the Editor of 4A TODAY, that the disk drives will operate more quickly with the new controller. Mark must be one of the first owners of this new card, and he goes on to report that the Corcomp Disk Manager disk supplied comes with 91 pages of documentation. The Manager program is 95 sectors long, and loads in around 12 seconds. Included are a number of demo programs using some new sub-routines, which can be used from either BASIC or XBASIC. MPEEK and MPOKE are almost the same as XBASIC's PEEK and LOAD commands, but they also let you give a bias (offset) for the data. VPEEK and VPOKE allow you to read or write VDP RAM, also with a bias. Mark continues "Using these two commands, you can, for example, obtain information on sprites or change the screen table. WRTRG lets you place values into the 7 VDP write only register. Using this command enables you to change into different graphics modes (ie. Bit-map, multicolor, or text), or relocate the different VDP tables (ie. screen and pattern descriptor). MOVEM is used for moving blocks of memory between CPU or VDP RAM. This command can move 30-40 screens of data in a second. EXEC will begin executing an assembly language subprogram at the address you give. All these commands may be either be CALLED or loaded into memory using the command DELETE "LD-CMDS", and then LINKed". For those of you able to get to the next General meeting, you will be able to examine the contents of 4A TODAY. I for one will buy this card when it becomes available locally. However some bad news has been received about the financial problems currently being faced by Corcomp. We understand the company has filed for Chapter 11, which can be the first step on the road to bankruptcy. To be positive, however, we believe Corcomp's creditors will give the company the opportunity to trade out of their present difficulties.

Now to the mailbox... P.Cosgove from Parramatta writes: "Being a slow typist I find it most frustrating when typing in a program in which the line numbers are not in steps of ten". The Editor does try and remember to do the appropriate resequencing of the line numbers before printing the listings, but it is one of those things which can be overlooked in the rush to meet deadlines.

Allan Cause from Cundletown writes: "As a newcomer to computing and TI I find the SND both helpful and interesting. I would appreciate if you could detail the uses for items such as: modem, expansion box, floppy disk, and disk drive". A modem is a device for converting the digital signals generated by your computer to audio frequencies which can be transmitted

over the telephone system. The modem reconverts the signal at the other end of the line so that a remote computer can communicate with you. The Expansion Box or PEB, enables you to add disk drives, printers, modems, extra memory etc. to your main console. A disk is a thin flexible piece of mylar coated with a special magnetic film, enclosed in a card jacket, which is used for magnetic storage of data. The TI99/4A computer, like most micros, uses a 5-1/4 inch diameter disk. A disk drive is a device which spins the disk at 300 rpm, similar to a record player, and positions a special read/write head at a specific point, which is defined by the DOS or Disk Operating System. The DOS is actually a program which can control several disk drives.

The last committee meeting before the AGM was held on October 23rd. It was decided to investigate a new venue for the main monthly General Meetings. We are looking at Strathfield Girls High School, Burwood RSL, Woodstock Centre, Masonic Hall Burwood, and a Police Boys Club. All of these are located within walking distance to a railway station, and have adequate parking facilities.

The monthly software was judged as follows:

NOUGHTS and CROSSES.....	17
CHALLENGER.....	24
COGGLE.....	15
GRAPHIC.....	20
HANGMAN.....	19
JEDI PILOT.....	11
ROCKET DESTROYER.....	21
SCREEN.....	17
SHOOTING GALAXY.....	12
SIAM.....	24
TRAVERSE CLOSURE.....	9
NO FRILLS SPREADSHEET.....	27

It was agreed that it would not be practical to demonstrate the top program at the meeting. In view of this and the excellent documentation supplied, NO FRILLS SPREADSHEET was declared the winner for the month. A special tape will be produced complete with printed documentation. Marcel Zaia was awarded the \$20 Rookie award for his program NOUGHT and CROSSES.

I need a volunteer to type in programs, which were originally written in a foreign language, and have been translated into English. We also want members with expertise in, German, Italian and French to contact Terry, who will give them copies of programs sent to us by our overseas contacts.

27 new members were admitted.

The minutes of this, and any other meeting are available for inspection at any General Meeting. If you want to attend a committee meeting contact any committee member. We usually hold meetings on the third Tuesday or Wednesday in the month.

I have finally started to receive solutions to my cursor problem. For the benefit of our new members the problem is to write an assembly language routine to create a non flashing cursor, with a shape of your own choice. The closing date is December 31st. A \$15 voucher which can be spent at the Club Shop will be awarded to the winner.

I attended a meeting during November during which a commitment was made to organise a User's Groups Fair, which will be held during the long weekend next June at Strathfield. 21 Groups will be represented. We will be looking for volunteers to man the stand over the continuous 72 hour period.

Running out of memory.....

Compliments of the Season and God bless you.

Happy Computing,

John Robinson
John Robinson,
Hon. Secretary.

YOUNGER SET

with Jenny

The under 18's column

Merry Christmas

Hi gang, well once again Christmas is just ahead, and Santa should be bringing you some goodies this Christmas. What have you got planned for your Christmas holidays? Have you set any goals? like reaching your hishest score on a particular game, or even write a game like 13 year old Chris Develin. I have received this letter and program from him...

DEAR JENNY, I HAVE ENCLOSED A TYPED PROGRAM THAT I WROTE ON THE WEEKEND. IT TOOK ME A FEW HOURS TO WRITE WITH A FAIR BIT OF ENQUIRING INTO BOOKS. IT IS THE SECOND MAJOR PROGRAM I HAVE WRITTEN BUT THE FIRST ONE WAS TERRIBLY BORING. EVEN THOUGH THIS IS NOT VERY 'ACTION PACKED', I THINK IT IS ENJOYABLE FOR A WHILE. I HAVE INCLUDED INSTRUCTIONS SO I NEEDN'T EXPLAIN IT, BUT IT IS A PROGRAM WITH TARGET LINES IN THE CENTRE OF THE SCREEN AND A SPRITE MOVING RANDOMLY AROUND THE SCREEN. YOU MUST SHOOT DOWN THE SPRITE (with the Q key) WHEN IT REACHES THE CENTRE. IT TESTS PERCEPTION AND FINGER QUICKNESS. I HOPE YOU ENJOY IT.

YOURS SINCERELY,
C DEVELIN.

P.S. MY HIGHEST SCORE(EVEN THOUGH NOT RECORDED) IS 1,874,60 ON PARSEC.

Thank you Chris, yes I enjoyed typing it in and running it. Very clever, and keep those programs coming in. For sending me this program, I will be sending you a cassette of assorted programs. Regarding your high score, you still have a lot to go to beat the HALL OF FAME score of 3,870,000 by Craig, but keep trying.

```

2 REM *****
3 REM *
4 REM *
5 REM * TARGET BLAST
6 REM *
7 REM * by Chris Develin
8 REM * (13years)TISHUG
9 REM * Younger Set
10 REM * member
11 REM *
12 REM * December '84
13 REM *
14 REM *****
15 CALL CLEAR
    
```

```

20 PRINT "-->TARGET BLAST<--"
30 PRINT "The object of the
game is to:"shoot down the
enemy fighter":"when it
is in range.It is":"in range
when it nears the"
40 PRINT "vertical crossline
or it is in the centre.":"U
se the fire button to":"
launch laser torpedoes."
50 PRINT "You have 5 ships w
ith which":"to attack.Each m
iss costs":"a ship, so f
ire carefully.":"The fighter
s are crafty":"and will swer
ve"
60 PRINT "in a different dir
ection":"when you fire.Your
score":"will be displaye
d at the end"
70 PRINT "-->GOOD LUCK<---"
80 PRINT "PRESS ANY KEY"
90 CALL KEY(O,K,S)
100 IF S=0 THEN 90
110 CALL CLEAR
120 RANDOMIZE :: SC=0 :: MN=
5
130 CALL MAGNIFY(2):: CALL C
OLOR(9,6,1):: CALL SCREEN(2)
140 CALL CHAR(96,"3C3C3C3C3C
3C3C3C")
150 CALL CHAR(97,"0000FFFFF
FF0000")
160 CALL CHAR(42,"181818183C
7EE781")
170 CALL CHAR(64,"000000C3C3
000000")
180 CALL VCHAR(2,16,96,9)
190 CALL VCHAR(14,16,96,9)
200 CALL HCHAR(12,6,97,9)
210 CALL HCHAR(12,18,97,9)
220 CALL SPRITE(#1,42,9,100,
100)
230 X=INT(RND*8)-4
240 Y=INT(RND*-8)+4
250 CALL MOTION(#1,Y*10,X*10
)
260 CALL KEY(1,K,S)
270 IF K<>18 THEN 230
280 CALL SPRITE(#2,64,11,180
,117,-50,0)
290 CALL COINC(#1,#2,10,A)
300 IF A=-1 THEN 350 ELSE 31
0
310 CALL POSITION(#2,G,H)
320 IF G<20 THEN 340
330 GOTO 290
340 CALL DELSPRITE(#2):: MN=
MN-1 :: IF MN=0 THEN 370 ::
GOTO 230
350 CALL DELSPRITE(ALL):: CA
LL SOUND(1000,-7,10):: FOR A
=1 TO 50 :: CALL SCREEN(
11):: CALL SCREEN(10):: NEAT
A :: SC=SC+10
360 GOTO 130
370 CALL CLEAR :: CALL SCREE
N(8):: CALL DELSPRITE(ALL)
380 DISPLAY AT(8,12):"SCORE
=";SC
390 PRINT "PLAY AGAIN(Y/N)?"
400 CALL KEY(O,K,S)
410 IF S=0 THEN 400
420 IF K=89 THEN 110
430 IF K=78 THEN 440 ELSE 40
0
440 PRINT "OK. BYE FOR NOW !
"
450 END
    
```



Here's a letter from Steven Sullivan another Youger Set member also aged 13, he wrote the following...

DEAR JENNY, THESE ARE MY HIGH SCORES...PARSEC 10,950, POKER \$22000, ALPINE SKIING 20-20, TOUCH TYPING TUTOR(Now this is a new one)52 WORDS PER MINUTE.

WHEN I GET SOME OTHER GAMES I WILL SEND THEM TO YOU. STEVEN.

P.S.I KNOW THIS WOULD BE HARD, BUT HOW ABOUT A "PEN-FRIEND" SYSTEM, SO WE CAN WRITE TO EACH OTHER, SWAP GAMES SO WE CAN SEND IN MORE SCORES.

Hi Steven, I had never thought of adding TOUCH TYPING TUTOR to the HALL OF FAME, but you have just made it with the very first with that one, and \$22000 with POKER from the Blackjack Poker Module?

Regarding Pen-Friends...I see no problems at all with that. Shane has got a lot of friends in both the U.S.A. and England so it you would like a Pen-Friend either overseas or any where in Australia, drop me a line, and I'll have a chat to our Editor and arrange it for you. That goes for all Younger Set members. Simply send me your NAME & ADDRESS, AGE, THE COUNTRY YOU WANT TO EXCHANGE WITH, PLUS...A SELF STAMPED ADDRESSED ENVELOPE.



Here's one a letter from Justin Chambers...He writes DEAR JENNY, I WAS PROGRAMMING LAST SUNDAY AND I COULDN'T GET THE COMPUTER TO ACCEPT ONE NUMBER AS THE ANSWER TO A PROBLEM (AS BELOW)

```

10 INPUT "2 x 3 ";A
15 LET A=6
20 IF A<>6 THEN 10
    
```

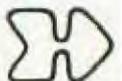
COULD YOU TELL ME WHAT I'VE DONE WRONG.

BELOW IS SOME MORE GAME TOTALS FOR THE HALL OF FAME...

MUNCHER 32000 , CATERPILLER 300 , and MUSHROOMS 602.

THANKS FOR THE COLUMN,
JUSTIN.

Thanks Justin once again, great to hear from you. Remove line 15, you don't need it at all, then it will work. You create the answer in line 20.



Younger's Younger Set (CONTINUED)

Dear Jenny,
So far I have only seen two
SND's because I am a new
member.

I have read your column of
both the October and November
SND, I think they are great.

In the October SND you say if
enough Younger Set Members of
Tishug wrote to you with high
scores and programs your
column would turn into a
dedicated page.

Well at the end of this letter
is a program. I hope the
program will put you on your
way to a full page in future.
I hope you enjoy my program.

Yours Faithfully,
Darren Watkins.

THANK YOU DARREN, WITH YOUR
ASSISTANCE, WE HAVE FINALLY
BEEN ABLE TO MAKE IT ALMOST
TWO PAGES IN THIS ISSUE OF
SND.

I LOOK FORWARD TO HEARING FROM
YOU AGAIN IN THE NEW YEAR.
HAVE A HAPPY CHRISTMAS.

LOVE...JENNY

100 REM *****
110 REM **GO AUSTRALIA**
120 REM *****
130 REM BY DARREN WATKINS
140 REM TI BASIC
150 REM
160 CALL CLEAR
170 CALL SCREEN(13)
180 CALL HCHAR(14,12,42,2)
190 CALL HCHAR(17,12,42,2)
200 CALL HCHAR(16,13,42)
210 CALL VCHAR(15,11,42,2)
220 CALL VCHAR(15,15,42,2)
230 CALL VCHAR(15,18,42,2)
240 CALL HCHAR(14,16,42,2)
250 CALL HCHAR(17,16,42,2)
260 CALL HCHAR(22,1,42,3)
270 CALL HCHAR(20,2,42)
280 CALL VCHAR(21,1,42,3)
290 CALL VCHAR(21,3,42,3)
300 CALL VCHAR(20,5,42,3)
310 CALL VCHAR(20,7,42,3)
320 CALL VCHAR(23,6,42)
330 CALL VCHAR(20,9,42,2)
340 CALL VCHAR(22,10,42,2)
350 CALL VCHAR(20,10,42)
360 CALL VCHAR(23,9,42)
370 CALL VCHAR(21,13,42,3)
380 CALL HCHAR(20,12,42,3)
390 CALL HCHAR(20,16,42,2)
400 CALL HCHAR(22,16,42,2)
410 CALL HCHAR(21,18,42)
420 CALL HCHAR(23,18,42)
430 CALL VCHAR(21,16,42,3)
440 CALL VCHAR(21,20,42,3)
450 CALL VCHAR(21,22,42,3)
460 CALL VCHAR(20,21,42)
470 CALL VCHAR(22,21,42)
480 CALL VCHAR(20,24,42,4)
490 CALL VCHAR(23,25,42)
500 CALL VCHAR(21,28,42,2)
510 CALL HCHAR(20,27,42,3)
520 CALL HCHAR(23,27,42,3)
530 CALL HCHAR(22,30,42,3)
540 CALL HCHAR(20,31,42)
550 CALL VCHAR(21,30,42,3)

560 CALL VCHAR(21,32,42,3)
570 CALL COLOR(2,11,11)
580 REM ***DRAWING KOALA***
590 CALL HCHAR(4,15,64,2)
600 CALL HCHAR(4,18,64,2)
610 CALL HCHAR(6,17,64)
620 CALL HCHAR(9,16,64,3)
630 CALL HCHAR(8,15,64)
640 CALL HCHAR(8,19,64)
650 CALL COLOR(5,2,2)
660 CALL HCHAR(2,10,79)
670 CALL HCHAR(2,23,79)
680 CALL HCHAR(2,13,79,8)
690 CALL HCHAR(3,9,79,16)
700 CALL HCHAR(4,9,79,6)
710 CALL HCHAR(4,17,79)
720 CALL HCHAR(4,20,79,5)
730 CALL HCHAR(5,10,79,14)
740 CALL HCHAR(6,11,79,6)
750 CALL HCHAR(6,18,79,5)
760 CALL HCHAR(7,11,79,12)
770 CALL HCHAR(8,12,79,3)
780 CALL HCHAR(8,16,79,3)
790 CALL HCHAR(8,20,79,2)
800 CALL HCHAR(9,13,79,3)
810 CALL HCHAR(9,19,79,2)
820 CALL HCHAR(10,14,79,6)
830 CALL HCHAR(11,14,79,6)
840 CALL COLOR(6,15,15)
850 CALL SOUND(1000,220,2)
860 CALL SOUND(1000,311,2)
870 FOR DELAY=1 TO 1000
880 NEXT DELAY
890 CALL SOUND(1000,220,2)
900 CALL SOUND(1000,311,2)
910 FOR DELAY=1 TO 1000
920 NEXT DELAY
930 CALL SOUND(1000,220,2)
940 CALL SOUND(1000,311,2)
950 CALL SOUND(500,311,2)
960 CALL SOUND(500,311,2)
970 CALL SOUND(500,311,2)
980 CALL SOUND(500,440,2)
990 CALL SOUND(500,440,2)
1000 CALL SOUND(500,440,2)
1010 CALL SOUND(1000,311,2)
1020 FOR I=1 TO 1000
1030 NEXT I
1040 GOTO 850

REGIONAL NEWS

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

BLAXLAND REGIONAL GROUP
The highlight of the October
meeting was a demonstration of
a spreadsheet program in
Extended Basic.

As a stranger to anything
connected with accounting
applications I was surprised
to find how much more useful
and "friendly" such
spreadsheets appear when one
can see them in action rather
than simply in print.

This long program (about 8K)
was from the August edition of
HCM, a magazine that seems to
have successfully managed to
broaden its market without
ditching TI.

Apart from the now obligatory
discussion on printers and
interfaces we also attempted to
run some recent club software
but without success.

I hope the gremlins in the new
duplicating unit are worked
out before the programs from
members, shown at the Sydney
meeting, are recorded as I
found the standard impressive.

Robert Vines.

LIVERPOOL REGIONAL GROUP
Liverpool regional group met
at Bill Kirkpatrick's place at
Smithfield on 13th October 84
with 20 members attending.

A report was given on the
Sydney October meeting
followed by a tutorial on Disk
Drive Systems given by Ross
Hardy. Ross extended his
tutorial to include Plato
Educational Programs.

The tutorials were appreciated
by all in attendance and Ross
has to be thanked particularly
in view of the short notice
given.

On a technical note John
Sutherland has made a
prototype board which will
provide a facility for tone
control for those cassette
recorders without it.

Interested members were
provided with a copy of a
circuit diagram of this handy
board.

In addition it was reported
that John is investigating
into the new VDP chip and the
possibility of having 64K RAM
Memory - In Consol.

John is willing to give a talk
on this as soon as he has
further information available.

Please note that the December
Regional meeting has been
changed owing to the Sydney
meeting now being held on the
2nd Saturday in December.

There will be no meeting in
January 1985. Please make
note of the following dates
and venue for the next two
meetings:-

FRIDAY 7TH DECEMBER 84 7.30PM
Stan Puckle 15 Richmond Cr,
CAMPBELLTOWN
PH:- 046 25-6157

FRIDAY 8TH FEBRUARY 85 7.30PM
Hans Zecevic 33 Malinya Cr,
MOOREBANK
PH:- 6008716

The theme for these meetings
will be further advised.

May I take this opportunity in
wishing all members and their
families a very Merry Xmas and
a prosperous 1985.





NEPEAN REGIONAL GROUP
Meetings:- Every first and third Monday at Penrith Police-Citizens Boy's Club.

Contacts:-
Malcolm Tutor (047) 333-673
Mel Copeland (047) 351-340

HIGHLIGHTS OF NOVEMBER ACTIVITIES FOR INCLUSION IN THE DECEMBER ISSUE OF TISHUG(SND).

1. Education continues to hold the Member's interest as each week a floor member gives a lesson on programming in BASIC. Junior members as well as seniors have been brave enough to "Have A Go" and stand up before the group.

Even simple commands give rise to discussion leading to snippets of information which even the experienced guys haven't come across before.

2. The group is providing Polarity Reversers for those people whose cassette players require the REMOTE reversed.

3. Modems have provided an interesting topic of conversation and demonstrations showing the TISHUG Bulletin Board have been well received.

4. Popular discussion topics have ranged from lightning strikes accessing computers VIA Modems to Static Electricity and position of the Console to care of modules.

5. A TI99/4A was completely dismantled at a Meeting and the parts explained to the group then the Module Port socket and pins cleaned to remove the problem of "lock-up" and electronic hygiene was advised.

6. An attempt is now under way to convert some "Apple" public domain software for use by High School Students but more listings from whatever Language would be welcome if any reader could phone info through.

KIND REGARDS TO ALL.

ILLAWARRA REGIONAL GROUP

December's meeting has been put back one week to 10/12/84. It will remain the Monday evening following the TISHUG meeting.

As it is the last get together for the year, it is intended that it be more of a fun night. If members could bring along a small plate of goodies it would be appreciated.

Assembly Language tutorials given by Geoff Trott have been keenly attended. Basic Language tutorials should finish at the December meeting.

TIME: 7:30 PM for Basic tutorials
8:00 PM for break up meeting

VENUE: The Shop 4
Home Computers
Waters Walkway
Corrimal

CONTACT: Bob Montgomery
286463



MARRICKVILLE REGIONAL

We conducted our final group meeting for 1984 a few weeks ago, and discussed Club Software, SND and new products both hardware and software now on sale including the new range of Book/Cassettes available from JARCAR ELECTRONICS. (See Chris Exton's review with Mark's in his publication). The next meeting for this group is planned for February next year at a new venue.

TI.S.R.U.G REPORT.

For members in the SUTHERLAND AREA, the new Regional group has been formed...called the TI SUTHERLAND REGIONAL User Group. For more information, phone Lorraine Ashbrooke on (02)5204932 at Engadine.

REGIONAL GROUPS: WHAT ARE THEY?

TI.S.H.U.G (Australia) is such a large group, of just over 1,000 members, that even though members come from miles around to attend the Big MONTHLY GET-TO-GETHER, for many this is impossible. So, over a year ago, Shane decided that we should conduct local HOME GROUPS, so that members, could socially meet each other, in the comfort of members homes around this vast city of ours.

This would add a personal touch to the group, and provide an outlet for distribution of Club software,

and the passing on of the latest news to those who couldn't attend the main meeting.

After a while, some of these groups became so large, that Regional leaders asked their members to help them out. We later saw new Regional Committees being formed to help share the work-load. And for those home groups which had become too large, they looked around for a HALL.

The TI.S.H.U.G Executive Committee decided, that they would help these larger Regional groups, with special funds, to assist with the HALL hire costs etc.

If you are living in an area which has no Regional group, why not offer your home for these meetings. You don't need any special skills, other than just being yourself, and collecting Club software tapes at the Big meeting and making them available at your home group.

POINTERS FOR HOME GROUP LEADERS:

- (1) Start the meeting off with a warm welcome and introduce each other.
- (2) Find out what each member does with their computer, and what they hope to get out of having one.
- (3) Chat together about any problems they may have with programs they may be writing, or converting from another brand of Basic etc.
- (4) Provide one or two demonstrations of new modules, or other software.
- (5) If a member of that group is Technically minded, talk about things you would like to have as peripherals, and channel that information back to the Technical Co-Ordinator.
- (6) Share with each other. This is what Regional groups can do, that can't be done at a BIG MONTHLY MEETING. Learn from each other, and encourage the talented potential program authors.
- (7) If you hear of a particular talented individual in another Regional Group, or a representative of a company that may support goodies usable on your TI, invite that person to speak at your group.

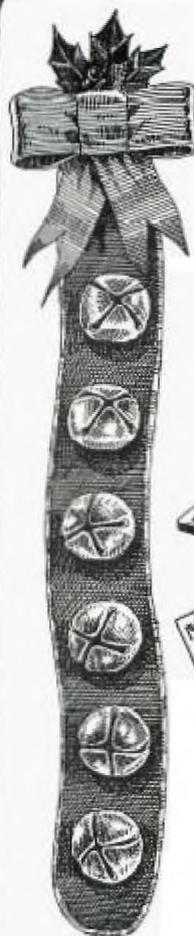
Regional Groups are fun. Contact a committee member about getting one going in your local area, you'll find they'll be supportive, and will offer assistance in getting your group underway.

Best Wishes,
Jim.



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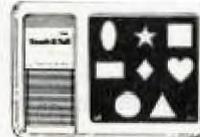
FLUKE

- 75 \$160.00
- 77 \$201.40

Analog/Digital Handheld Multimeters



HITACHI — Oscilloscopes.



Prices quoted include tax. We reserve the right to alter prices quoted without notice.

YES! WE HAVE MAIL AND PHONE ORDERS (PAULA JENKINS) AND USE BANKCARD, MASTERCARD AND AGC FINANCE. OR VISIT OUR STORE.



Radio Despatch Service

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Merry Christmas

MINI MEM LINK

Anyone using my routine for multi colour mode may have come to the same conclusion that I did, very pretty but not much practical use, so here's a program to enhance TI basic screen handling capabilities that far outstrip any other popular micro, so if you have a MIMEMEM and want to work wonders with your screen, this program is a must.

INSTRUCTIONS FOR USE

The program gives the user 4 new subprograms to scroll any amount of lines on the screen (ie, the whole screen, or say only line 7 to 15). In any direction (up, down, left, and right) for any specified amount of times to scroll distant objects slower than near objects to give perspective to your picture. Lastly you may also specify the mode of scrolling. Either wrap around screen mode or the vacated screen positions can be filled with blanks.

THE COMMANDS ARE:-

- 1 CALL LINK("UP",R,T,B)
- 2 CALL LINK("DOWN",R,T,B)
- 3 CALL LINK("LEFT",R,T,B)
- 4 CALL LINK("RIGHT",R,T,B)

The parameters R,T, & B can be variables or constants and operate as follows.

R-REPETITION. The number of times you want the specified part of the screen to scroll. If R is a negative number the screen will scroll that number of times in "wrap around mode", if R is a positive number the screen will scroll leaving blanks behind it.

T-TOPLINE. As I said, you don't have to scroll the whole screen. You may scroll only a few lines, TOPLINE is the lowest line number to be included in the scroll.

B-BOTTOMLINE. This is the highest number to be included in the scroll.

EXAMPLE -- CALL LINK("DOWN",10,3,16) will scroll lines 3 to 16 down 10 times leaving the vacated 10 lines blank.

EXAMPLE -- CALL LINK("LEFT",-12,10,24) will scroll lines 10 to 24 left 12 times filling the right hand side of the screen with what was on the left.

WARNING

Due to blatant bad programming there are no error traps, so do not specify an R value of zero, or a screen line number less than 1 or greater than 24

OK TO LOAD THE MACHINE CODE TYPE IN FOLLOWING PROGRAM SAVE CS1. RUN PROGRAM. IF THE CHECKSUM IS CORRECT, THE CORRECT CODE WILL HAVE BEEN ENTERED INTO THE MINIMEM. YOU CAN THEN "NEW" OR "QUIT". YOU ARE NOW READY TO USE THE SUBPROGRAMS AS DESCRIBED ABOVE. TRY THE SAMPLE PROGRAM ITS A GOOD DEMONSTRATION OF ONE WAY TO USE THE SUBPROGRAMS.

```

100 REM*****
110 REM SCREEN SCROLLING
120 REM ROUTINES IN MACHINE
130 REM CODE, FOR MINIMEMORY
140 REM ONLY
150 REM*****
160 REM
170 REM*****
180 REM WRITTEN BY S.MICHEL
190 REM JULY 1983
200 REM*****
210 REM
220 REM
230 REM*****
240 REM (C) SYDNEY MICHEL
250 REM 16 FOUNDER WAYS
260 REM BRIDGEMARY
270 REM GOSPORT
280 REM HANTS. PO13 OLR
290 REM*****
300 REM
310 DATA 194,139,6,160,125,230,2,1,125,64,193,199,21,8,
192,6,2,32,255,224,2,2,0,
32
320 DATA 4,32,96,48,16,6,2,3,32,32,204,67,2,129,125,96,
22,252,192,6,2,1,125,98,2
,2,0
    
```

```

330 DATA 32,2,32,255,192,4,32,96,48,2,32,0,32,4,32,96,4
0,129,64,22,246,2,1,125,6
4,2
340 DATA 32,255,224,4,32,96,40,193,199,21,1,5,196,6,4,2
2,212,4,90,16,0,16,0,194,
75,4
350 DATA 192,2,1,0,1,6,160,126,24,193,32,131,74,5,129,6
,160,126,24,193,96,131,74
,5
360 DATA 129,6,160,126,24,193,160,131,74,4,199,193,4,17
,1,5,135,10,86,10,85,4,89
,4
370 DATA 32,96,68,4,32,96,28,18,0,4,9,194,139,6,160,125
,230,2,38,255,192,2,1,125
,64
380 DATA 193,199,21,8,192,5,2,32,255,224,2,2,0,32,4,32
390 DATA 96,48,16,6,23,32,32,204,67,2,129,125,96,22,252
,192,5,2,1,125,98,2,2,0,3
2
400 DATA 16,2,2,32,0,64,4,32,96,48,2,32,255,224,4,32,96
,40,129,128,22,246,2,1,12
5,64
410 DATA 2,32,0,32,4,32,96,40,193,199,21,1,5,196,6,4,22
,211,4,90,194,139,6,160,1
25
420 DATA 230,2,37,255,224,195,5,2,2,0,32,193,199,21,4,1
92,5,4,32,96,44,16,2,2,1,
32,32
430 DATA 216,1,125,96,2,1,125,64,192,5,4,32,96,48,5,29,
4,32,96,40,2,37,0,32,129
440 DATA 133,22,232,193,76,193,199,21,1,5,196,6,4,22,22
6,4,90,194,139,6,160,125,
230
450 DATA 2,37,255,224,195,5,2,2,0
460 DATA 32,193,199,21,6,192,5,2,32,0,31,4,32,96,44,16,
2,2,1,32,32,6,193,200,1,1
25
470 DATA 96,2,1,125,98,192,5,4,32,96,48,6,1,4,32,96,40,
2,37,0,32,129,133,22,229
480 DATA 76,193,199,21,1,5,196,6,4,2,223,4,90
490 DATA 127,36,127,208
500 DATA 68,79,87,78,32,32,125,130,85,80,32,32,32,32,12
6,36,76,69,70,84,32,32,12
6
510 DATA 138,82,73,71,72,84,32,126,212
520 FOR A=32130 TO 32547
530 READ B
540 GOSUB 700
550 NEXT A
560 FOR A=28700 TO 28703
570 READ B
580 GOSUB 700
590 NEXT A
600 FOR A=32720 TO 32751
610 READ B
620 GOSUB 700
630 NEXT A
640 CALL CLEAR
650 IF CS=33113 THEN 680
660 PRINT "CHECKSUM INCORRECT": "CHECK DATA VALUES"
670 STOP
680 PRINT "CHECKSUM OK.": "TYPE IN ""NEW""...SUBPROGRA
MS READY FOR USE"
690 END
700 CALL LOAD(A,B)
710 CS=CS+B
720 RETURN
730 REM WHEN I ENTERED THE DATA I MADE 15 ERRORS, GOOD
LUCK, SYD
    
```




```

100 REM *****
110 REM * RABID *
120 REM *BY CULLHANE GIBBS*
130 REM *IN EXTENDED BASIC*
140 REM *REQUIRE JOYSTICKS*
150 REM *****
155 REM FROM ATTIC
160 CALL MAGNIFY(2)
170 RANDOMIZE
180 CALL CHAR(47,"002277FFFF
2A0000")
190 CALL CHAR(94,"123422256F
800451")
200 CALL CHAR(64,"3838107CBF
292A28")
210 CALL CHAR(124,"20502070A
8B0A8FF")
220 CALL CLEAR : CALL SCREE
N(2)
230 FOR COLOUR=2 TO 12 : CA
LL COLOR(COLOUR,COLOUR+1,2)
: NEXT COLOUR
240 PRINT " RABIS":"BY C
ULLHANE GIBBS":"AND JOYSTICK
S" : PRINT : PRINT "IN
STRUCTIONS:"
250 PRINT "AVOID RABID,":"
KNIFE WEILDING MANIACS.":"TO
DEFEND YOURSELF"
260 PRINT "PPRESS YOUR FIREF
UTTON":"TO RELEASE A SHORT F
LAME":"WHICH WILL BURN Y
OUR":"ATTACKERS.":"NEW SCREE
N STARTS WHEN ALL"
270 PRINT "ATTACKERS ARE KIL
LED.":"ONCE YOU ARE KILLED T
HE":"GAME IS OVER.":"YOU
CAN FIRE ONLY":"IN ONE DIRE
CTION-":"TO THE LEFT"
280 PRINT "PRESS ANY KEY"
290 FOR D=10 TO 50 : CALL S
OUND(D,701,0):: CALL SOUND(-
100,-8,0):: CALL SOUND(-
50,-4,10):: CALL SOUND(-100,
-2,0):: NEXT D
300 CALL KEY(0,KEP,SEP):: IF
SEP=0 THEN 300 ELSE 310
310 CALL CLEAR
320 PRINT "SCORECHART:" : P
RINT
330 PRINT "@ MANIAC=100" :
PRINT : PRINT "* YOU" : PR
INT
340 PRINT "PRESS AY KEY TO B
EGIN"
350 CALL SOUND(-1000,-8,0)
360 PRINT : PRINT : PRINT
: PRINT : PRINT : PRIN
T : PRINT
370 CALL KEY(0,K,S): IF S=0
THEN 370 ELSE 380
380 CALL CLEAR : PRINT "
GET READY, PLAYER!" : PRINT
: PRINT : PRINT : PR
INT : PRINT : PRINT : PR
INT : PRINT : PRINT : PRIN
T : PRINT : PRINT : P
RINT
390 FOR TIME= TO 500 : NEX
T TIME
400 SCORE=0
410 CALL CLEAR
420 CALL SPRITE(#11,124,4,70
,200)
430 FOR SPRIT=1 TO 4 : CALL
SPRITE(#SPRIT,64,5,121,89)
: CALL MOTION(#SPRIT,INT
(RND*10)+1,-INT(RND*10)+1)::
NEXT SPRIT : MANIC=4
440 DISPLAY AT(1,3):"SCORE:"
;SCORE
450 CALL JOYST(1,X,Y):: CALL
MOTION(#11,-Y*2,X*2):: CALL
SOUND(-3,-3,0)

```

HOLIDAY
GREETINGS
TO OUR
FRIENDS
OLD
AND NEW.
WE WISH YOU
THE
SEASON'S
BEST.

```

460 CALL POSITION(#11,YPOS1,
XPOS1)
470 CALL KEY(0,KE,ST)
480 IF ST=-1 AND XPOS1]24 TH
EN 490 ELSE 690
490 CALL SPRITE(#12,47,7,YPO
S,XPOS]-16)
500 CALL COINC(#12,#1,20,A)::
IF A=-1 THEN 510 ELSE 540
510 CALL SOUND(1000,340,0)::
CALL PATTERN(#1,94):: SCORE
=SCORE+100 : MANIC=MANI
C-1 : CALL DELSPRITE(#1)
520 CALL DELSPRITE(#12)
530 IF MANIC=0 THEN 430 ELSE
540

```

```

540 CALL COINC(#12,#2,20,A)::
IF A=-1 THEN 550 ELSE 590
550 CALL DELSPRITE(#12)
560 CALL SOUND(1000,340,0)::
CALL PATTERN(#2,94):: SCORE
=SCORE+100 : MANIC=MANI
C-1 : CALL DELSPRITE(#2)
570 CALL DELSPRITE(#12)
580 IF MANIC=0 THEN 430 ELSE
590
590 CALL COINC #12,#3,20,B)::
IF B=-1 THEN 600 ELSE 640
600 CALL DELSPRITE #12)
610 CALL SOUND(1000,340,0)::
CALL PATTERN(#,94):: SCORE+
SCORE+100 : MANIC=MANIC
-1 : CALL DELSPRITE(#1)
620 CALL DELSPRITE(#12)
630 IF MANIC=0 THEN 430 ELSE
640
640 CALL COINC(#12,#4,20,C)::
IF C=-1 THEN 650 ELSE 700
650 CALL DELSPRITE(#12)
660 CALL SOUND(1000,340,0)::
:CALL ATERN(#4,94):: SCORE=
SCORE+100 : MANIC=MANIC
-1 : CALL DELSPRITE(#4)
670 CALL DELSPRITE(#12)
680 IF MANIC=0 THEN 430 ELSE
700
690 CALL DELSPRITE(#12)
700 CALL COINC(#1,#11,16,T)::
IF T=-1 THEN 740 ELSE 710
710 CALL COINC(#2,#11,16,U)::
IF U=-1 THEN 740 ELSE 720
720 CALL COINC(#3,#11,16,V)::
IF V=-1 THEN 740 ELSE 730
730 CALL COINC(#4,#11,18,W)::
IF W=-1 THEN 740 ELSE 780
740 FOR DIP=1 TO 28 : CALL
MOTION(#DIP,0,0):: NEXT DIP
: CALL SOUND(-1000,-8,0
):: CALL PATTERN(#11,94):: F
OR DEL=1 TO 50 : NEXT DEL
750 CALL DELSPRITE(#11):: DI
SPLAY AT(23,3):"GAME OVER-ST
ART AGAIN Y OR N" : CAL
L KEY(0,P,S):: IF S=0 THEN 7
50 : IF P=ASC("n")THEN 770
760 IF P=ASC("y")THEN 400 EL
SE 750
770 END
780 GOTO 450

```

T.I.S.H.U.G INVITES YOU
to it's POT-LUCK
CHRISTMAS PARTY



All you have to do is...
bring a plate of food
hot or cold, and we'll
supply the drinks!!!

EXTENDED TUTORIAL



Well, here is the Christmas/New Year chapter of **EXTEND TUTORIAL** by Tony McGovern.

V. XB STYLE WITH SUBPROGRAMS

Let's now stand back a bit and look at the best way to construct XB edifices. Assume at this stage that we are in the process of developing a program, but not yet to the point where scrunching program length has become important. The first thing to note is that by giving the subprograms good descriptive names you have already gone a long way to making your program self-explanatory.

How big should individual subprograms be allowed to get? After all, one of the reasons for using them is to break up big programs into manageable hunks. We will use the term 'line' to refer to a multi-statement XB line identified by a line number. My own prejudice is that, except in special circumstances, subprograms should be no more than about 10 lines long, and mostly rather less than that. What makes an exceptional circumstance? An obvious one is in title blocks, like that in SIMPLIST which was left as an almost bare stub. A full version would provide graphics and advice screens, which can be tediously long to write, but contain very little in the way of branching decisions or variable assignments. Another example is where a familiar routine, that already works, is used with little variation as in COLIST where the disk directory routine from the Disk Manual is incorporated as a subprogram with only minor changes. In any such situation where long subprograms are justified, the lists of parameters passed will be short or non-existent.

The other extreme is short one or two liners which are frequently CALLED for small special tasks, more or less your own customized extension of the built-in set of subprograms. In between in length, but far more complex, you will have subprograms with extensive parameter lists and the logic which carries the burden of program flow.

The advice is usually given that subroutines should be used only when a section of code is used repeatedly. That is not true even for second or lower level subprograms unless you are desperate for more memory space. Some subprograms may be CALLED only once from within another subprogram but are of value in making your code easier to read and develop. These are associated with the branching of program flow by means of IF..THEN..ELSE statements. In either TI BASIC or XB, FOR-NEXT loops may extend indefinitely with NEXT acting as delimiter. Unfortunately in extending BASIC to XB, TI did not provide an "ENDIF"

statement as in TI-FORTH, but only the 'endif' implied by the end of a XB line. This means that any alternative actions determined by the IF.. condition have to fit within that XB line or involve a GOTO somewhere else unless the usual simple drop-through to the next line is enough. The XB manual already explicitly forbids inclusion of FOR..NEXT loops within IF..THEN..ELSE statements. No doubt you are already used to getting around this little problem by placing the looping code in a subroutine and using a GOSUB. Subprograms can be used instead, following THEN and ELSE to give more complex and obviously labelled alternative possibilities, but still staying within the confines of a single line with a minimum of leaping about with GOTOS.

This brings us to the subject of the 'dreaded GOTO'. A great deal of heat, and not necessarily much light, has been expended on this subject. 'GOTO' is after all just another statement in pure high level language, an unconditional jump, and one that gives the computer itself absolutely no trouble. At the machine code level, jumps enable the computer to do more than just chomp along a single track of instructions. The question is whether it is help or hindrance in high level languages, and whether other ways of controlling program flow can replace its explicit use to advantage. TI-FORTH does without it, but that most procedural and recursive of languages, TI-LOGO, still finds it useful. Pascal tries to do without it. What we are dealing with is XB as it exists, and XB can't do without GOTOS. If anything should be considered as reprehensible in a high-level language, it is any need to provide PEEK and POKE.

The great weakness of GOTO as a language element is that it is so readily abused, because undisciplined use makes the program code inefficient and hard for people to follow (Basic interpreters don't find any troubles though). The genuine message from 'structured programming' ideas is not that BASIC is bad for having GOTOS, but that most BASICs (TI console Basic is typical) make it necessary for the programmer to exercise real restraint if terrible tangles of GOTOS are to be avoided.

Once you use XB subprograms to chop up a program into small hunks, you have automatically eliminated great leaps around with GOTOS. All you need then is to remember the comments on using subprogram CALLS as statements in IF..THEN..ELSE, to take a little care in laying out the logic flow, and to make your main program little more than a series of subprogram CALLS. You will then find it very much easier to debug or develop programs. Backwards GOTOS over more than one or two lines of code, or any forward GOTOS at all, should only occur under the most regular of logical layouts, as in SUB BASICLINE in the SIMPLIST example. Single recursive lines such as in line 620 of SIMPLIST are very effective. It's a pity that the designers of XB didn't add the "MYSELF" function as in TI-FORTH to enhance such constructions.

This advice conflicts with that frequently given in books and articles on Basic, even from reputable sources. However if you follow the advice here you will find that you are automatically generating structured control, even though in XB you have to use explicit GOTOS to do it. It's the subprogram feature of XB that makes the real difference, and DO..WHILEs etc. would merely be icing on the cake.

One last little matter before we go on to other topics. Many languages with local procedures also allow specification of global variables, accessible from any part of the program. XB does not allow for separate global variables, and it can be quite tiresome when a parameter defined at the end of one subprogram chain is only needed at the end of another chain, and has to be passed all the way up and down in parameter lists. A way around this is to use the static value feature of XB subprograms.



```
3000 SUB PAGELNGTH(A,B):: IF A THEN C=B ELSE B=C
3010 SUBEND
```

If the write flag is set as CALL PAGELNGTH(1,66) the value 66 is stored in the subprogram local variable C, while CALL PAGELNGTH(0,PL) will retrieve that value into PL. This is clumsier than having global variables, but is also more protected from unwanted interference. XB does not enforce any hierarchy of subprogram levels, so PAGELNGTH can be written to, or read from, at any level in the program. The example is for one parameter only, but is easily extended. You could for instance store a whole array dimensioned within a subprogram, and read or write a particular element using the sign of the element number as the READ/WRITE flag. A zero R/W flag could be used as a signal to clear the whole array if desired.

```
4000 SUB FREEZER(A,B):: DIM F(..)
4010 IF A>0 THEN B=F(A)ELSE F(-A)=B
4020 SUBEND
```



VI. PRE-SCAN SWITCH COMMANDS

The little supplementary booklet that comes with the current Version 110 of Extended Basic introduces a new pair of reserved words, !@P+ and !@P-. These have the form of a tail remark (XB manual p38) and so are ignored entirely by the earlier V.100 of XB. If the XB interpreter finds an exclamation mark ! outside any DATA string or string enclosed by quotes, it treats the rest of that line as though it were a REM statement. The V.110 interpreter has the added ability to recognize this pair of words beginning with ! as being distinct from normal tail remarks when used as a single word statement. Their use is allowed only at the end of a line so that V.100 just ignores them, not creating any incompatibility problems between versions, something that TI was always conscientious about. TI then couldn't let these commands actually do anything during program execution! So why are they there ?

The XB manual addendum, p7, tells the story. These switch commands allow you to control the operation of the pre-scan through the program by the interpreter — that agonizing time interval after RUN is entered before the program starts executing. The interpreter is grinding its way through your program, byte by byte, ignoring only the messages in DATA, REMs and tail remarks. Other than these there is nothing that it can afford to ignore until it has actually looked at it. The pre-scan sets up the storage areas and lookup procedures for variables, arrays, data, sub-programs and DEFs used by the interpreter as the program runs. Of course once it has set aside space for a variable and its lookup linkages, then it doesn't need to do it again or even to have to decide it has already fixed it up earlier. The pre-scan switch commands allow the programmer, from a superior vantage point, to turn the pre-scan off and on throughout the program so that it only looks at what it really needs to look at to do its job.

What does the programmer gain by going to all this extra trouble? The most obvious result is a reduction of pre-scan time. This can be significant in long programs. The 6 to 7 seconds for TXB, a 12K program, may still seem long but beats 4 times that. In a later chapter we will see how it can be used to fine tune run time behaviour as well. What price does the programmer pay for these benefits? The necessary penalty is the memory space taken by the extra statements. The hidden penalty, incurred while writing programs, is the inscrutable bugs that may be introduced into the code and the loss of some program checking during pre-scan such as FOR-NEXT nesting.



Let's work our way through the XB manual's prescriptions. Some of these help give insight into the way XB conducts its affairs. My experience is that some of the restrictions need not be followed strictly as laid down, as long as the essential spirit is observed, while some are absolute, and others are in between. These last are the ones where it is possible to imagine another version of XB doing things differently while still being according to the book. This is always the danger in using unspecified properties or "undocumented features". It is not such a problem with XB since TI pulled the plug on the 99/4a and made XB a language as dead as Latin.

(1) DATA statements :-

The pre-scan locates the first DATA statement and sets XB's data pointer for the first READ operation to use. If the first DATA is skipped in the pre-scan, then RESTORE must be invoked before the first READ to set the data pointer correctly. If this is done, the XB manual's advice can be ignored.

(2) Variables :-

Each variable must be scanned once, otherwise XB won't have it in its linked list of pointers to names and storage locations. This can be the source of some truly evil program bugs, where a syntax error message results from a line of code which looks perfectly correct. The reason can be that injudicious positioning of pre-scan switch commands has left the interpreter with something that should be a variable, but can't be located as such. Being a non-variable is a much worse fate than merely being set to zero.

OPTION BASE 1 affects how storage is allocated and normally precedes any array references. If hidden from the pre-scan by !@P- then the default 0 will apply.

The manual says that the first occurrence of any variable or array must be included in the pre-scan. This would seem to be necessary for arrays, in the DIM statement, unless you are using the default (no DIM) dimensioning. Simple variables can be pre-scanned anywhere as long as it's at least once. Try the little sample program

```
100 CALL CLEAR :: !@P-
200 I=1 :: PRINT I
300 !@P+
400 I=2
```

Run this program and there will be no problems. Delete line 400 and see what happens. Now you will have a syntax error in a line that by itself is perfectly correct.

(3) Sub-programs :-

The XB manual recommends that the first CALL to any sub-program be included in the pre-scan. It would appear that if the first CALL to a user defined sub-program occurs after its own SUB (from within a later sub-program) then the necessary inclusion of the SUB and SUBEND markers suffices.

Built-in sub-programs of course do not have associated SUB statements, so a CALL must be included in the pre-scan if the program is to run normally. Try this example.

```
100 FOR I=1 TO 1000 :: !@P-
200 CALL SCREEN(12)
300 !@P+
400 NEXT I
500 SUB ANYTHING :: CALL SCREEN(3):: SUBEND
```

This will run even though SCREEN is pre-scanned only in a subprogram. Delete line #500 and it will crash if you are running XB with the 32K memory expansion. In VDP RAM (console only) it still executes but only at about 1/3 the speed.



What happens if an array is referenced in the parameter list of a sub-program, but not dimensioned until a later sub-program? If you recall the discussion on passing arrays by reference, you won't be surprised to find that XB is smart enough to hold over assigning space for the array until it comes across a genuine program reference. Try this little example

```
100 CALL SECOND
200 SUB FIRST(A):: PRINT A(20):: SUBEND
300 SUB SECOND :: !@P-
400 DIM A(20):: CALL FIRST(A)
500 !@P+
600 SUBEND
```

This program crashes with a syntax error in 400 in SECOND. Now delete the pre-scan commands and the program will run. If you further delete DIM A(20):: in line 400 the program will crash in 200 with a subscript error.

(4) DEF, SUB and SUBEND :-

Do as the book says. XB needs these in the pre-scan to set things up correctly.

The pre-scan switch doesn't have much effect unless the program is of substantial size, so it isn't worth worrying about too much in the early stages of a program's development beyond being prepared for the possibility. The XB manual supplement (p10) shows how all variable and sub-program declarations may be gathered together to minimize the range of the pre-scan, by using a GOTO to jump over the list to the first executable statement. This can be gotten away with since XB does not do a complete check for correct syntax until it comes to execute the line. This is the only virtue one can ascribe to XB's failure to reject all invalid lines at entry time. The same technique can be used within a sub-program, and I have found it very convenient for this same GOTO to reserve a hiding place in which to tuck away the subroutines accessed by GOSUBs within the sub-program.

That's all from Funnelweb Farm for this year. Merry Xmas to everyone out there who has been following this tour through the features of Extended Basic. What do we want for Xmas? Well..., apart from another PE Box to reduce the congestion around this machine, perhaps someone out there will write a letter to our esteemed Editor for the SND with the solution to a problem that has been bugging us ever since our second disk came on line (after incredible mail-order traumas). How can a XB program be made to recover gracefully from an attempt to read from an empty drive? So far nothing has worked and another XB bug has been exposed. I would also appreciate hearing about any bugs you have discovered in XB. I already have a small collection, and these and any new ones sent in will appear in a forthcoming Tutorial,

Some good reading from TI is the Software Development Handbook from TI's UK microprocessor operation (2nd Ed. 1981). It doesn't recognize the existence of the 99/4a computer, but at least half the book is of general programming interest or on 9900 Assembly language. I fear that it may be quite expensive, rather than cheap like the little TI/Radio Shack volumes.

What Chrissy presents can you give to a TI-99er who has almost everything? TI-FORTH from TISHUG will keep them absorbed for a long time to come. It's almost as much fun as TI-LOGO, very much in the same spirit but more technical and a little less recursive. Good books on FORTH are "Starting Forth" by L. Brodie and "Forth Fundamentals, Vol.1" by C. Kevin McCabe.

All the best from Funnelweb Farm for Xmas and the New Year and the same from the Newcastle group to the rest of TISHUG.

GREAT THINGS TO BUY FOR YOUR TI THIS CHRISTMAS

There's plenty of goodies still available for our TI-99/4(A) computer. However-there are some changes to prices both savings and price rises as you will notice below.

Note Last letter of catalogue prefix indicates software type. M indicates solid state module (ROM Cartridge). D is floppy disk- T is cassette tape. (S) SPEECH

NEW GAMES RELEASES

These are new programs for the TI 99/4A computer. All are plug in ROM modules.

CAT NO	TITLE	PRICE
PHM3225	BUCK ROGERS (S)	\$34.95
PHM3225	STAR TREK (S)	\$34.95
PHM3189	RET TO PIRATE'S ISLE	\$34.95
PHM3194	JAWBREAKER [I]	\$29.95
PHM3197	SLYMOIDS	\$29.95
PHM3158	M*A*S*H (S)	\$34.95
PHM3131	MOON MINE	\$29.95
PHM3145	SNEGGIT	\$29.95
PHM3146	MUNCHMOBILE	\$29.95
PHM3229	HOPPER	\$29.95
IGM502	MICROSURGEON (S)	\$29.95
IGM502	SUPER DEMON ATTACK	\$29.95
IGM503	FATHOM (S)	\$34.95
IGM504	MOONSWEPPER	\$29.95

PERIPHERALS and ACCESSORIES

PHP1200	EXPANSION BOX	N/A
All cards for the above product will now be supplied by Cor-Comp...		
COR1220	RS-232 CARD	\$195.00
PHP1240	DISC CONTROLLER CARD	\$100.00
COR---	'' '' DD/DS ''	\$250.00
PHP1250	Ng 1 DISK DRIVE	\$399.00
COR1260	32K MEMORY CARD	\$215.00
PHP1270	P-CODE CARD (PASCAL)	\$300.00
PHP1500	SPEECH SYNTHESIZER	\$99.00
THB1000	TECHNICAL MANUAL	\$20.00
PHP1100	T.I JOYSTICKS (PAIR)	\$29.95
UAC002	TAC.2 Joyst(REQ ADPTR)	\$29.95
Mini Cor-Comp	Exp.Box with RS232	=\$375.00
COR----	32K + DD/DS DISK CONT	=\$450
(or with the lot = \$745.00)		

HLD1001 ULTIMATE DISK CATALOGUE A MUST FOR ANYONE WITH A DRIVE \$19.95
Products with the HLD serial number are a product of Lindley & Assoc... P.O.BOX 595. MARRICKVILLE. N.S.W. 2204 or 127 CROWLEY ST, ASPLEY, QLD, 4034 (07)2636161.

TI-COUNT BUSINESS PACKAGES

These programs constitute an integrated accounting package. Thorough and professional, these programs allow the user to manage accounting information.

Sydney News Digest

HLD5092	GENERAL LEDGER	\$149.00
HLD5093	ACCOUNTS PAYABLE	\$149.00
HLD5094	ACC. RECEIVABLE	\$149.00
HLD5095	PAYROLL	\$149.00
HLD5096	INVENTORY	\$149.00
HLD5097	MAIL LIST	\$149.00
HLD5098	MAIL LIST adap. for Aust...	
and as a stand-alone system		\$149.00



GAMES and FAMILY ENTERTAINMENT

HLD1002	3D TENNIS	\$34.95
HLD1003	TI-WRITER SPELL CHECKER	\$59.95
PHM3009	FOOTBALL	\$29.95
PHM3018	VIDEO GAMES I	\$24.95
PHM3023	HUNT THE WUMPUS	\$24.95
PHM3024	INDOOR SOCCER	\$24.95
PHM3025	MIND CHALLENGERS	\$29.95
PHM3030	A-MAZE-ING	\$29.95
PHM3052	TOMBSTONE CITY	\$24.95
PHM3053	T.I. INVADERS	\$24.95
PHM3054	CAR WARS	\$29.95
PHM3057	MUNCHMAN	\$34.95
PHM3042D	TUNNELS OF DOOM	\$29.95
PHM3042T	TUNNELS OF DOOM	\$29.95
PHM3056	ALPINE (S)	\$29.95
PHM3110	CHISHOLM TRAIL	\$29.95
PHM3112	PARSEC (S)	\$34.95
PHM3031	THE ATTACK	\$24.95
PHM3032	BLASTO	\$24.95
PHM3033	BLACKJACK & POKER	\$29.95
PHM3037	HANGMAN	\$24.95
PHM3036	ZEROZAP	\$29.95
PHM3039	YATZEE	\$29.95
PHM3038	CONNECT FOUR	\$29.95
PHM3042T	ADVENTURE	N/A
PHM3041D	ADVENTURE	N/A

PHD5002	TI-TREK	\$24.95
PHM3067	OTHELLO	\$29.95
PHD5015	OLDIES BUT GOODIES I	\$24.95
PHD5010	MYSTERY MELODY	\$24.95
PHD5025	SATURDAY NIGHT BINGO	\$24.95
PHD5017	OLDIES BUT GOODIES 2	\$29.95
PHD5046	ADVENTURELAND	\$24.95
PHD5037	DRAW POKER	\$24.95
PHD5048	VOODOO CASTLE	\$24.95
PHD5047	MISSION IMPOSSIBLE	\$24.95
PHD5050	STRANGE ODYSSEY	\$24.95
PHD5049	THE COUNT	\$24.95
PHD5052	PYRAMID OF DOOM	\$24.95
PHD5051	MYSTERY FUN HOUSE	\$24.95
PHD5054	SAVAGE ISLAND I II	\$24.95
PHD5053	GHOST TOWN	\$24.95
PHT6010	MYSTERY MELODY	\$19.95
PHD5056	GOLDEN VOYAGE	\$24.95
PHT6017	OLDIES BUT GOODIES 2	\$19.95
PHT6015	OLDIES BUT GOODIES 1	\$29.95
PHT6037	DRAW POKER	\$19.95
PHT6025	SATURDAY NIGHT BINGO	\$19.95
PHT6047	MISSION IMPOSSIBLE	\$19.95
PHT6046	ADVENTURELAND	\$19.95
PHT6049	THE COUNT	\$19.95
PHT6048	VOODOO CASTLE	\$19.95
PHT6051	MYSTERY FUN HOUSE	\$19.95
PHT6050	STRANGE ODYSSEY	\$19.95
PHT6053	GHOST TOWN	\$19.95
PHT6052	PYRAMID OF DOOM	\$19.95
PHT6056	GOLDEN VOYAGE	\$19.95
PHT6054	SAVAGE ISLAND I II	\$19.95



EDUCATIONAL SOFTWARE

PHM3002	EARLY LEARNING FUN	\$29.95
PHM3003	BEGINNING GRAMMAR	\$29.95
PHM3004	NUMBER MAGIC	\$29.95
PHM3005	VIDEO GRAPHS	\$29.95
PHM3015	EARLY READING	\$29.95
PHM3043	READING FUN	\$29.95
PHM3046	READING ON	\$24.95
PHM3047	READING ROUNDUP	\$29.95
PHM3048	READING RALLY	\$29.95
PHM3082	READING FLIGHT	\$29.95
PHM3027	ADDITION SUBTRACT 1	\$29.95
PHM3028	ADDITION SUBTRACT 2	\$24.95
PHM3029	MULTIPLICATION 1	\$24.95



PHM3049	DIVISION 1	\$24.95
PHM3050	NUMERATION 1	\$29.95
PHM3051	NUMERATION II	\$29.95
PHM3059	SCHOLASTIC SPELL L-3	\$49.50
PHM3060	SCHOLASTIC SPELL L-4	\$49.50
PHM3061	SCHOLASTIC SPELL L-5	\$49.50
PHM3062	SCHOLASTIC SPELL L-6	\$49.50
PHM3082	READING FLIGHT	\$29.95
PHM3088	COMPUTER MATH GAME 6	\$24.95
PHM3090	ADDITION	\$29.95
PHM3091	SUBTRACTION	\$29.95
PHM3092	MULTIPLICATION	\$29.95
PHM3093	DIVISION	\$29.95
PHM3094	INTEGERS	\$29.95
PHM3095	FRACTIONS	\$29.95
PHM3096	DECIMALS	\$29.95
PHM3097	PERCENTS	\$29.95
PHM3099	LAWS OF ARITHMETIC	\$29.95
PHM3100	EQUATIONS	\$29.95
PHM3101	MEASUREMENT FORMULAS	\$29.95
PHM3114	ALLIGATOR MIX	\$29.95
PHM3115	ALIEN ADDITION	\$29.95
PHM3116	DEMOLITION DIVISION	\$29.95
PHM3117	DRAGON MIX	\$29.95
PHM3118	MINUS MISSION	\$29.95
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PHD5007	TEACH YOURSELF BASIC	\$29.95
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PHD5011	COMPUTER MUSIC BOX	\$29.95
PHD5018	MARKET SIMULATION	\$29.95
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PHD5020	MUSIC MAKER	\$29.95
PHD5023	BASKETBALL STATISTICS	\$29.95
PHD5026	BRIDGE BIDDING 1	\$29.95
PHD5030	SPEAK SPELL	\$29.95
PHD5031	SPEAK MATH	\$29.95
PHD5039	BRIDGE BIDDING 2	\$29.95
PHD5041	BRIDGE BIDDING 3	\$29.95
PHD5042	SPELL WRITER	\$29.95

FINANCIAL, HOME & GENERAL SOFTWARE

PHM	TI-WRITER	\$150.00
PHM	MICROSOFT MULTIPLAN	\$150.00
PHM3020	MUSIC MAKER	\$29.95
PHM3010	PHYSICAL FITNESS	\$29.95
PHM3026	EXTENDED BASIC	\$59.95
PHM3021	WEIGHT CONTROL NUTRIT	\$24.95
PHM3055	EDITOR/ASSEMBLER	\$90.00
PHM3064	TOUCH TYPING TUTOR	\$29.95
PHM3035	TERMINAL EMULATOR II	\$59.95
PHD5006	MATH ROUTINE LIBRARY	\$34.95
PHD5005	PROGRAMMING AIDS II	\$39.95
PHD5012	PROGRAMMING AIDS III	\$34.95
PHD5008	ELECTRICAL ENGINEER	\$34.95
PHD5016	STRUCTURAL ENGINEER.	\$34.95
PHD5013	GRAPHING PACKAGE	\$39.95
PHD5064	UCSD P-SYS.ASS/LINKER	\$159.95
PHD5063	UCSD-PASCAL COMPILER	\$159.95
PHT6006	MATH ROUTINE LIBRARY	\$19.95
PHD5065	UCSDP-SYS EDITOR/FILE	\$59.95
PHD5016	STRUCTURAL ENGINEER.	\$34.95
PHT6004	PROGRAMMING AIDS I	\$19.95
PHT6013	GRAPHING PACKAGE	\$19.95
PHM3006	HOME FINANCIAL DECIS.	\$29.95
PHM3007	HOUSEHOLD BUDGET MNGT	\$29.95
PHT6041	BRIDGE BIDDING III	\$19.95
PHT6026	BRIDGE BIDDING I	\$19.95
PHT6067	BEGINNERS BASIC TUTOR	\$24.95
PHT6039	BRIDGE BIDDING II	\$19.95
PHM3012	SECURITIES ANALYSIS	\$29.95
PHM3013	PERSONAL RECORD KEEP	\$29.95
PHM3016	TAX/INVEST REC KEEP	\$29.95
PHM3022	PERSONAL REAL ESTATE	\$29.95
PHM3044	PERS.REPORT GENERATOR	\$29.95
PHD5001	MAILING LIST	\$34.95
PHD5003	PERS.FINANCIAL AIDS	\$29.95
PHD5021	CHECKBOOK MANAGER	\$29.95
PHD5022	FINANCE MANAGEMENT	\$34.95
PHD5024	INVENTORY MANAGEMENT	\$34.95
PHD5027	INVOICE MANAGEMENT	\$34.95
PHD5029	CASH MANGEMENT	\$34.95
PHD5038	LEASE/PURCHASE	\$34.95
PHT6003	PERSONAL FINANCIAL	\$29.95

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CALENDAR

january

SU	MO	TU	WE	TH	FR	SA
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

february

SU	MO	TU	WE	TH	FR	SA
					1	2
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17	18	19	20	21	22	23
24	25	26	27	28		

march

SU	MO	TU	WE	TH	FR	SA
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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

april

SU	MO	TU	WE	TH	FR	SA
	1	2	3	4	5	6
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may

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june

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30						

july

SU	MO	TU	WE	TH	FR	SA
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21	22	23	24	25	26	27
28	29	30	31			

august

SU	MO	TU	WE	TH	FR	SA
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31						

september

SU	MO	TU	WE	TH	FR	SA
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21	22	23	24	25	26	27
28	29	30				

october

SU	MO	TU	WE	TH	FR	SA
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6	7	8	9	10	11	12
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20	21	22	23	24	25	26
27	28	29	30	31		

november

SU	MO	TU	WE	TH	FR	SA
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

december

SU	MO	TU	WE	TH	FR	SA
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1985



TI.S.H.U.G. P.O. BOX 595, MARRICKVILLE, NSW AUST. 2204 {PETER} Phone=02-3897025
 (Membership Address): P.O. BOX 149, Pennant Hills. 2120 {JOHN} Phone=02-8480956
 TEXPAC-BBS 02-5600926. PROGRAMMERS CRISIS LINE 02-992229. {TERRY} =02-7976313

Sydney News Digest

PROGRAMS TO TYPE

The program listing below, was sent to me some time ago, by Bernie Elsner of the Texas Instruments User's of Perth in Western Australia. If you have a printer, it will print a Calendar for you, between the years 1905 & 2099.

Infact, you can see the work of this program in this Christmas issue of the Sydney News Digest.

There are two interesting aspects to this program ... (1) You will notice that line number 370 has more than the usual amount of lines supposed to be available to type in, and (2) This is a great way to check on the day of your birth, if you so desire.

Now lets take a quick look at point #1 just mentioned...As you are aware, you can usually only type 4 lines of text onto any TI BASIC program line, and no more than 5 lines of text in Extended Basic. The program below, will run in both basics, but to obtain up to 7 lines of text per program line, all you have to do is simply create that line, then EDIT it by typing <FCTN> X As you type in this program, you will see what I mean.

```

110 REM ### CALENDAR/1 ###
120 REM
130 REM PROGRAM TO PRINT A
140 REM CALENDAR FOR ANY
150 REM YEAR 1905 TO 1099.
160 REM
170 REM BERNIE ELSNER.TIUP.
180 REM
190 REM #####
200 REM
210 CALL CLEAR
220 PRINT "PRINTER OUTPUT FI
LE NAME IS": : RS232/1.BA
=9600.DA=8": : :
CHANGE Y/N ???": : : : :
: :
230 FILE$="RS232/1.BA=9600.D
A=8"
240 CALL KEY(O,KY,ST)
250 IF KY=78 THEN 290
260 IF KY<>89 THEN 240
270 PRINT " NEW FILE NAME
IS -> ": :
280 INPUT FILE$
290 CALL CLEAR
300 PRINT " INITIALIZ
ING!": : : : : : : :
310 DIM M(12),E$(12),D$(31),
H$(504)
320 OPEN #1:FILE$,OUTPUT
330 DATA JAN,31,FEB,0,MAR,31
,APR,30,MAY,31,JUN,30,JUL,31
,AUG,31,SEP,30,OCT,31,NO
V,30,DEC,31
340 FOR I=1 TO 12
350 READ E$(I),M(I)
360 NEXT I
370 DATA " 1"," 2"," 3"," 4"
," 5"," 6"," 7"," 8"," 9"," 1
0"," 11"," 12"," 13"," 14","
15"," 16"," 17"," 18"," 19"," 20"
," 21"," 22"," 23"," 24"," 25"," 2
6"," 27"," 28"," 29"," 30","
31"
380 FOR I=1 TO 31
390 READ D$(I)
400 NEXT I
410 CALL CLEAR
    
```

```

420 PRINT " BERNIE ELSNER
T.I.U.P.": :
430 PRINT " Texas Instrument
s Users": :
440 PRINT " of Perth
": : : : :
450 PRINT " PROGRAM TO PRINT
A CALENDAR": :
460 PRINT " FOR ANY YEAR FRO
M 1905-2099": : : : : : :
:
470 INPUT " YEAR REQUIRED I
S -> ":Y
480 IF Y=INT(Y)THEN 530
490 PRINT : : :
500 PRINT "NOT A VALID YEAR.
TRY AGAIN."
510 PRINT
520 GOTO 470
530 IF Y<1905 THEN 490
540 IF Y>2099 THEN 490
550 CALL CLEAR
560 PRINT " WAIT ..... 22
SECONDS": : : : : : : : :
:
570 B=Y-1905
580 W=B*365
590 C=INT(B/4)
600 W=W+C
610 C=INT(W/7)
620 S=W-7*C
630 IF Y/4=INT(Y/4)THEN 660
640 M(2)=28
650 GOTO 670
660 M(2)=29
670 PRINT
680 N=1
690 FOR J=1 TO 12
700 X=S
710 GOSUB 1280
720 FOR C=1 TO M(J)
730 H$(N)=" "&D$(C)
740 N=N+1
750 NEXT C
760 X=X-S-M(J)
770 GOSUB 1280
780 A=INT((S+M(J))/7)
790 S=(S+M(J))-A*7
800 NEXT J
810 CALL CLEAR
820 PRINT " PRINTING CALEND
AR ":Y: : : : : : : : :
:
830 PRINT #1:CHR$(27);CHR$(6
8);CHR$(27);CHR$(0);CHR$(9);
"CALENDAR - ":Y
840 N=1
850 V=0
860 FOR Q=1 TO 4
870 F=10
880 PRINT #1:""
890 FOR R=1 TO 3
900 PRINT #1:CHR$(27);CHR$(6
8);CHR$(F);CHR$(0);CHR$(9);E
$(V+R);
910 F=F+24
920 NEXT R
930 V=V+3
940 PRINT #1:""
950 PRINT #1:""
960 PRINT #1:" ";
970 FOR T=1 TO 3
980 PRINT #1:"SU MO TU WE TH
FR SA ";
990 NEXT T
1000 PRINT #1:""
1010 FOR L=1 TO 6
1020 FOR G=1 TO 3
1030 FOR U=1 TO 7
1040 PRINT #1:H$(N);
1050 N=N+1
1060 NEXT U
1070 PRINT #1:" ";
1080 N=N+35
1090 NEXT G
    
```

```

1100 PRINT #1:""
1110 N=N-119
1120 NEXT L
1130 N=N+84
1140 NEXT Q
1150 FOR I=1 TO 38
1160 PRINT #1:""
1170 NEXT I
1180 CALL CLEAR
1190 PRINT " <N> FOR NEXT
YEAR": :
1200 PRINT " <C> TO CHANG
E YEAR": :
1210 PRINT " <Q> TO QUIT
PROGRAM": : : : : : : : :
1220 CALL KEY(O,KY,ST)
1230 IF KY=67 THEN 410
1240 IF KY=81 THEN 1330
1250 IF KY<>78 THEN 1220
1260 Y=Y+1
1270 GOTO 540
1280 FOR K=1 TO X
1290 H$(N)=" "
1300 N=N+1
1310 NEXT K
1320 RETURN
1330 CLOSE #1
1340 STOP
    
```

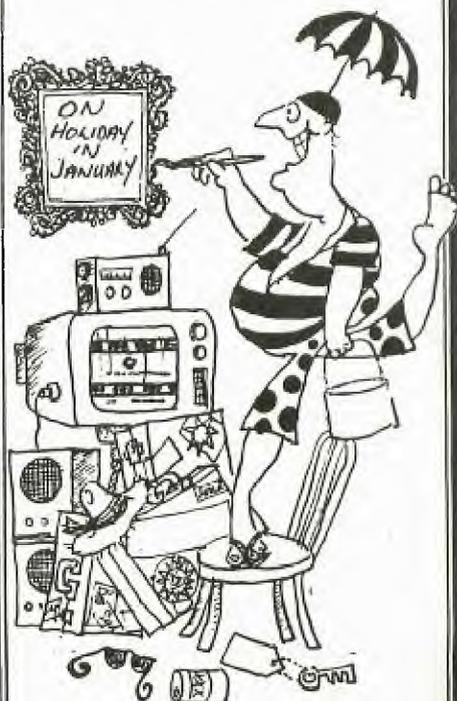
CLASSIFIED ADVERTS

WANT TO SELL: TI-99/4(A) with UHF MODULATOR. \$175 o.n.o. Phone(02)812388.

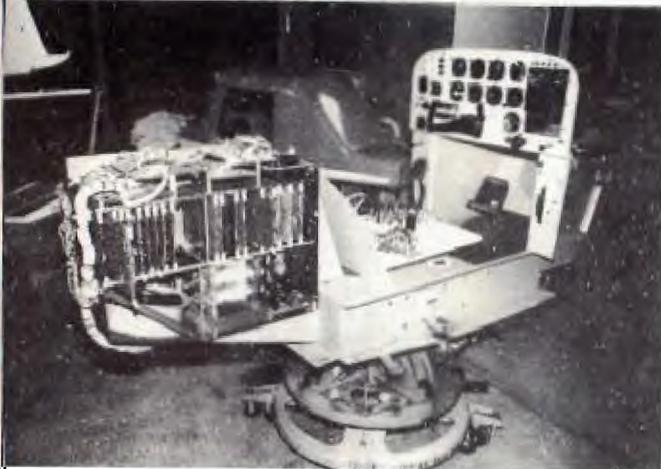
TI-99/4(A) with Extended Basic, cassette player, and a heap of software \$200.00 Ring(02)554715 after 5pm.

TI-99/4(A) with Extended Basic Joysticks, Music Maker, Math games, Tapes. \$150.00 Ring(043)884017

SIX GAMES MODULES 4 SALE:Inc:Buckrogers, Tunnels of Doom, etc. from \$25 - \$10 Wed-Sunday (AH)02-3312872 TED



FIGHT SIMULATING FOR REAL



Just when you had finished that program you had to type in, or played that game to read a new high score for Jenny's Younger Set, or studied that special tutorial in the SND... you then wonder 'WHAT AM I GOING TO DO NEXT FOR MY SCHOOL HOLIDAYS?'

'Well, I had a look around, and discovered something I felt you might like to try out,

One of the most popular programs for any computer is a FLIGHT SIMULATOR, but why I have share with you will take this kind of interest into a new dimension...

SPECIAL PREPAID PROGRAM FLIGHT SIMULATORS AUSTRALIA PTY. LTD. takes the pain out of flight training.

All of Flight Simulators' ab initio training courses for class onee, three and four instrument ratings include unlimited hours of self practice.

AB-INITIO TO CLASS 4
\$250 Includes up to 10 hours instruction plus unlimited self practice.

AB-INITIO TO CLASS 3
\$450 Includes up to 20 hours instruction plus unlimited self practice.

AB-INITIO TO CLASS 1
\$600 Includes up to 30 hours instruction plus unlimited self practice.

Student has Six months from commencement of training to complete instruction, or upon gaining rating, whichever comes earlier.

RATES ARE FIRM AFTER PAYMENT OF FEES, OTHERWISE LIABLE TO CHANGE.

Class 4 Instruction: Basic I/F + ADF + VOR interceptions & Tracking.

Class 3 Instruction: ADF + VOR Holds & Let-downs.

Class 1 Instruction: ADF, VOR, ILS & DME Holds & Let-downs.

REGULAR RATES:
Casual with instructor \$30 per hour,
10 Hour Pre-Paid \$250
Casual without instructor \$20 per hour.

There is one simulator available on the market which provides six degrees of freedom motion and that is the GAT-1.

The GAT-1 is now new, it has ben on the market for more than 15 years.

More than 450 GAT-1 simulators were produced by the Singer-Link Company with production ceasing only a few years ago.

The machine is run by an analogue computer which controls the motion of the trainer.

It is perhaps the closest machine available in the G.A. arena that will match modern airline equipment in the degree of realism that it provides to the pilot.

The GAT-1 is still available in Australia with several instrument training organisations.

One of these training operators, Flight Simulators Australia Pty Ltd at Bankstown Airport, has taken a rather unique approach to the application of simulators in general aviation instrument training.

It has decided to lower their rates as a means of allowing pilots to spend more time training or practising instrument flight procedures.

Flight Simulators hopes that pilots will treat its GAT-1 simulators as a means of remaining current.

The company belives that in the past G.A. simulators were primarily used during training for initial issue.

The new approach to costing will allow instrument rated pilots to take an airline approach to the maintenance of a high operating standard.

Casual hire rates are \$30 per hour with an instructor and \$20 per hours without an instructor.

All of Flight Simulators' ab initio training courses for class one, three and four instrument ratings include unlimited hours of self practice.

In addition to the traning facility Flight Simulators markts refurbished examples of the GAT-1 trainer.

The trainers are available either through a rental arrangement or complete purchase.

Rental is only available to organisations based in New South Wales.

The initial design of the GAT-1 left plenty of room for expanding the machine's capabilities.

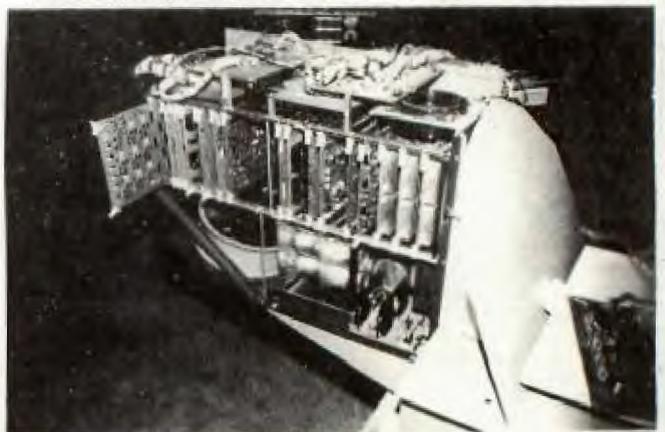
Although the basic version is a "single engine" type the computer has the capacity to accept circuit boards to simulate a twin engine aircraft.

The instrument panel and engine controls also can be modified to reflect a twin engine aircraft cockpit.

Flight Simulators can service and modify the GAT-1 trainer to suit the buyer.

So if your mum or dad tells you 'GO FLY A KITE', then go one better, go learn to fly a real plane.

MERRY CHRISTMAS from Shane(Editor)



Sydney News Digest

The Communicators

Greeting once again for another COMMUNICATORS PAGE. Todate, we now have 90 Registered users for the newly vamped TI.S.H.U.G.BBS now with a new name TEXPAC-BBS and a whole new look.

The original program by Robert, has had a face lift by Steven Williams. The new look was designed with USERNUMBER and PASSWORD features. Visitors with other brands of computers can still come on-line, but will only be restricted by not being able to Down-load software or change PASSWORDS. Before, Visitors were told that software downloading should not be attempted, but just like a WET PAINT SIGN, they tried just to see why they couldn't do it.

The Electronic Mail will only go to the one it is supposed to, which makes it just that much more personal.

All the previous information like News(local & overseas), Jokes, Programming hints, and all of the other goodies have been taken off and new material is now on the system for Christmas.

If you have lost your sheet provided, with PASSWORD & USERNUMBER etc, please sign on as VISITOR then PAGE the System Operator.

In an effort to make your Committee even more contactable, many of the Executive are now on modem.

USERNAME	FIRSTNAME	COMMITTEE POSITION HELD
FATSO	PETER	TI.S.H.U.G. CO-ORDINATOR
SECRETARY	JOHN	TI.S.H.U.G. SECRETARY
TRELIB	TERRY	TREASURER/LIBRARIAN
TECHTIME	ROBERT	TECHNICAL CO-ORDINATOR
TEACHER	PETER	EDUCATIONAL CO-ORDINATOR
COMPUTEX	MARK	TEXPAC-BBS CO-ORDINATOR
SHANE	SHANE	TEXPAC-BBS SYSOP/EDITOR SND
GOWFAR	GREG	ADVERTISING EXECUTIVE

With Modem Technology starting to BOOM!!! Many new and different Electronic Bulletin Boards and Romote CM/P's are cropping up to help cope with assistance.

Two OUT-SIDE BBS'S, THE PROPHET and KEEBOARD BBS welcome TI-99/4(A) users. When you log onto their systems, leave a message to their SYSOP, letting them know that you use a TI, and they will then offer special features such as UP-LOADING and DOWN-LOADING for us. And if you are looking for that very special partner, there is always the DATE BBS, "THE BBS WITH A HEART".

I mentioned about the new PRESTEL SYSTEM coming to Australia by the New Year by Telecom, well, BANKS are now getting into the act. Very shortly, you'll be able to contact a Bank with your modem, transfer accounts and get them to pay your bills etc.

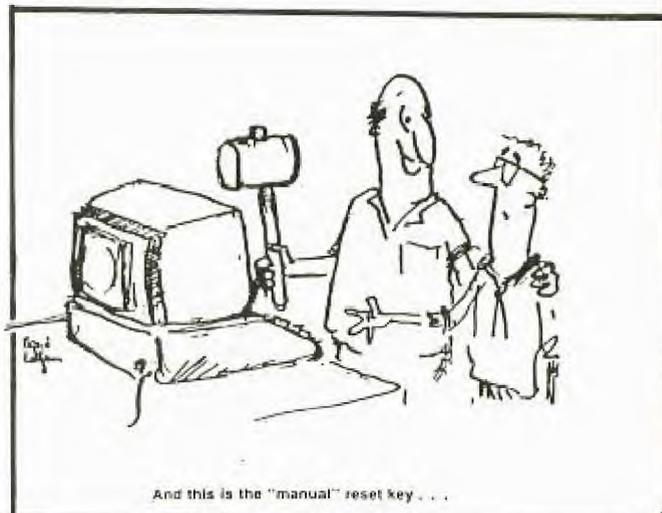
O.K. here is an up-to-date listing of the systems now in operation...

CITY:	BBS or RCP/M	TELEPHONE #	Comments
NATIONAL	AUST.BEGINNING	01921-9238220000	BIG
SYDNEY	TEXPAC-BBS	(02)5600926	TI USERS
"	DATE-BBS	3501004	TOGETHERNESS
"	THE PROPHET	6287030	
"	KEEBOARD BBS	6313282	
"	DICK SMITH BBS	8872276	RETAIL STORE
"	PUBLIC ACCESS	8083536	
"	MICC	6621686	MAGAZINE
"	RUNX BBS	802854	3 LINES IN
"	SORCERER UGBBS	3874439	CLUB BBS
"	AUGABBS UGBBS	4516575	APPLE CLUB
"	THE OMAN UGBBS	4982495	TRS80 CLUB
"	AUSBORNE UGBBS	5682791	OSBORNE CLUB
"	SYDCOM64 UGBBS	6084262	COMMODORE "
"	MICRO DESIGN	6630151	
BRISBANE	TIBUG-BBS	(07)2636161	9PM-6AM WN.
"	SOFTWARE TOOLS	3789530	
CANBERRA	RBBS-RCP/M	(062)888318	
"	MICSIC BBS	866334	
MELBOURNE	MICOM	(03)7625088	
"	IBM BBS	5283750	
"	TARDIS	677760	
"	SORCERER UGBBS	8364616	
"	P.R.SYSTEMS	8426857	
GIPPSLAND	RCP/M	(051)341563	
ADELAIDE	MUG BBS	(08)2712043	
DARWIN	RCP/M	(089)277111	
"	OMEN-II UGBBS	274454	TRS80 CLUB
PERTH	RCP/M	(09)3676068	
"	RMPM	3816070	

Watch them grow, with News, Shopping, Mailing and many other features. If you hear of other systems starting up, contact us and we'll add them on. I know that the ACEBBS (ATARI CLUB) is up and running, but don't have a number on them yet.

Well, have a happy and filling Christmas, and a safe New Year. Let's see you back at the 1985 WORKSHOP/TUTORIAL DAY in February in one piece.

SEASON'S GREETINGS



Sydney News Digest

FRIENDLY GAMES
BY
GRAHAM BALDWIN,
TI*MES.



As I was saying, the use of sound in games can be a subjective issue so all I can do is pass on what I like to hear in a game.

The playing of a short tune while the title or instructions are being displayed can add to a game's entertainment value, but please don't use the Death March theme when the player loses - it has been heard in too many games now.

Musically, I find that a rising melody usually indicates optimism or victory while a falling melody signifies loss or defeat.

A short jingle of three or four notes is easiest written using separate CALL SOUND statements but a longer tune is more easily handled by placing the durations and frequencies of the notes into DATA then READING them into CALL SOUND, as in this program to play "Deep In The Heart Of Texas" demonstrates:-

```
100 FOR A=1 TO 15
110 READ DUR,NOTE
120 CALL SOUND(DUR,NOTE,1)
130 NEXT A
140 DATA 100,392,200,523,200,
523,300,659,100,392,200,523,200
,523,400,659,100,784,100,784
150 DATA 100,784,300,784,100,
880,100,659,200,587
```

This program plays single notes but those among you blessed with musical ability could add extra frequencies and even volume values in DATA to play impressive three-part harmonies.

Not being so blessed I have to pick out single notes by ear on my daughter's toy electronic organ, convert them to frequencies and "guesstimate" the durations to arrive at the tune I first thought of. Would the TI Music Maker Module make life easier I wonder?

A little experimentation on the CALL SOUND statement can be rewarding, such as:-

```
120 CALL SOUND(DUR,NOTE,1,NOTE *2,1)
```

OR

```
120 CALL SOUND(DUR,NOTE,1,NOTE +1,1)
```

These give a richer sound quality but slow the execution speed down somewhat and you may find that the duration values need to be altered.

The use of the CALL SOUND within FOR-NEXT loops can, with some trial and error, give just about any sound effect you may require.

The placing of the control variable (or multiples of it) in the duration, frequency or volume of CALL SOUND is a powerful and easy to use programming trick, provided the values stay within CALL SOUND ranges.

This short example simulates a shell falling and exploding.

```
100 FOR A=1000 TO 700 STEP -20
110 CALL SOUND(-120,A,1)
120 NEXT A
130 FOR A=0 TO 30 STEP 2
140 CALL SOUND(-150,-7,A)
150 NEXT A
```

Of course, while a FOR-NEXT loop is being performed the rest of the program is suspended until the loop is finished (unless you jump out of it), which can slow play down somewhat, but there's no reason why you can't add bits and pieces within the loop, such as changes to colours or characters.

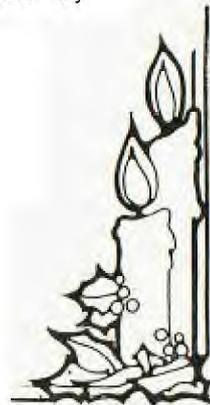
(Incidentally, does anyone know why the TI sound chip supplies frequencies so far above normal hearing range? Did the TI marketing department decide to aim at the canine world? It would't surprise me...)

CONTROL KEYS

As some games seem to require three thumbs and a toe to be played successfully it is a such-appreciated gesture if the player is given the chance to pick his own control keys.

This routine gives a choice of left, right and fire keys and can easily be expanded to cover any combination you require.

```
100 PRINT "CHOOSE YOUR KEY":
:
110 PRINT "LEFT ";
120 CALL KEY(3,KL,S)
130 IF S<1 THEN 120
140 PRINT CHR$(KL)::
150 PRINT "RIGHT ";
160 CALL KEY(3,KR,S)
170 IF S<1 THEN 160
180 PRINT CHR$(KR)::
190 PRINT "FIRE ";
200 CALL KEY(3,KF,S)
210 IF S<1 THEN 200
220 PRINT CHR$(KF)
230 IF (KL=KR)+(KL=KF)+(KR=KF)
THEN 100
```



Note the use of "S<1" which prevents the program going further until the chosen key has been pressed and released and the check in line 230 that foils the clever-clogs who selects the same key for each functions. A method of using the variables KL, KR and KF in a program is shown below.

```
500 CALL KEY(3,K,S)
510 IF K=KL THEN (move left)
520 IF K=KR THEN (move right)
530 IF K<>KF THEN 500
540 (Fire Routine)
```

If the player presses anything except a preselected key line 530 will send control back to CALL KEY, with no further action being performed.

SCORING

Some games need a scoring system, and a high-score facility will appeal to a player's vanity, particularly if he is asked to give his name for display on the screen. This routine checks the current score (SC) against the best score (BST) and requests the player's name if the high-score has been beaten.

```
100 IF SC<=BST THEN 170
110 BST=SC
120 PRINT "PLEASE ENTER YOUR
NAME":
130 INPUT BEST$
140 IF LEN(BEST$)<25 THEN 170
150 PRINT "TOO LONG. TRY
AGAIN.":
160 GOTO 130
170 PRINT ::"YOUR SCORE WAS";S
C::"BEST SCORE IS";BST;"BY":
BEST$
```

You may like to have a "Hall Of Fame" for the top five or ten scores, with the results saved to a cassette file but I feel this is going a bit far, both in execution and memory usage, although a "Top Three" score table is quite feasible using a simple sort routine.

LIVES

Depending on the type of game you are writing you may like to give the player several "Lives" as he may become discouraged after being repeatedly wiped-out while learning the game.



Sydney News Digest

You could make the idea more sophisticated by awarding an extra life for each screen completed or 1000 points scored but careful judgement is needed as young players with better reactions than yours may accumulate more lives than you thought possible.

GRAPHICS

When writing a game it is all too easy to rush into things and put some crude graphics onto the screen just to see if the game works, and sadly these sometimes get left in the program.

By all means use simple shapes while developing the program but spend some time and sweat on the graphics later - the results are always worthwhile.

After all, you may know that the blob in the top left-hand corner of the screen is a tank or an aeroplane but would anyone else recognise it?

These are several character generator programs on the market (and Home Computing Weekly published one a year or so back) which can make graphics design a pleasure instead of a chore. The better ones even print out the HEX code of the completed character.

Colours can present a problem in that, ideally, a game should be playable using either a colour or monochrome television, and if you write your game using a colour set you may find that some colours are completely invisible when viewed in monochrome. Some compromise in your choice of colours may be required to put matters right.

THE END OF THE GAME

When the game ends don't just let it stop, forcing the player to type RUN if he wants to play again. A simple PRINT "PLAY AGAIN?" AND CALL KEY routine to re-start the program will give a much better impression, but don't forget that some variables may need resetting to zero or null if the program logic is to be retained.

FINISHING TOUCHES

When your game is complete you'll probably be sick of the sight of it so put it away for a week or two, then reload it and attack it with the intention of finding faults.

Try everything you can think of to crash the program. Does the logic hold up in all circumstances? Are graphics and sound OK? Are printed characters appearing neatly?

If you can find errors or crashes so will someone else so now is the time to correct them.

Now that your program is perfect it is safe to invite criticism. Get friends or family to try the game and watch them carefully while they play. Look, for example, for worried frowns when the game begins; your instructions may not be clear enough.

Is the game so complex that only you, the writer can understand it, or is it so simple that three year old children fall asleep while playing?

Listen to criticism; you are probably too close to the program to see the blindingly obvious improvement that could lift it out of the ordinary and make it sparkle.

If you critics have to be dragged away from the console after an hour of play you can safely say that you have written a good game.

If anyone wants to get in touch, about this article or any TI subject my address is:-

32 Ellesmere Drive,
SOUTH CROYDON,
SURREY. CR2 9EJ.

Happy Computing
Graham Baldwin.



* **MODEM CARD** for PERIPHERAL 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 and connects to your RS-232 Card.

The Features include:

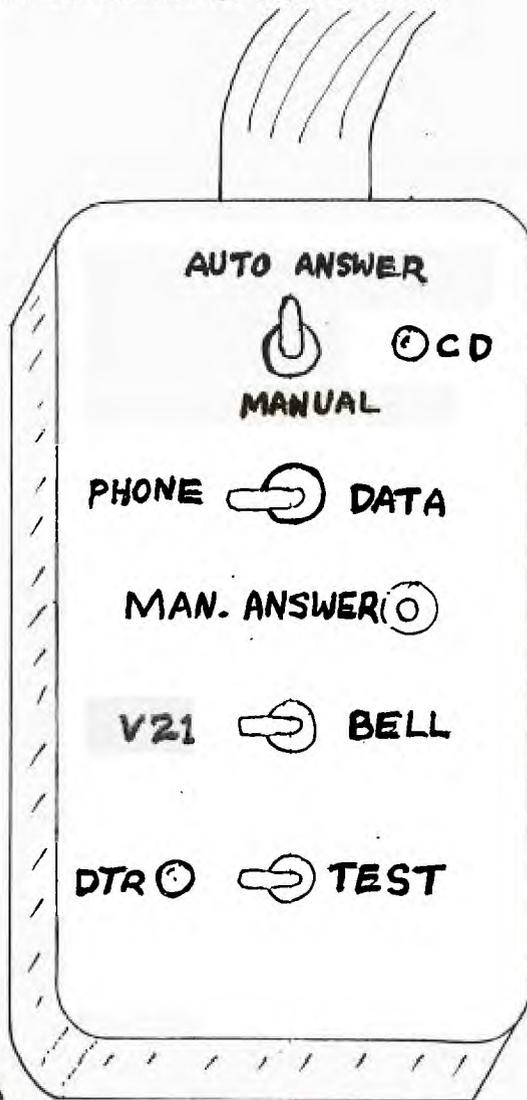
- * AUTO ANSWER - AUTO DISCONNECT
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- * TELECOM STANDARD LINE CORD
- * CRYSTAL CONTROL ACCURACY

Fully built and tested by T.I.S.H.U.G. member Peter Schubert.

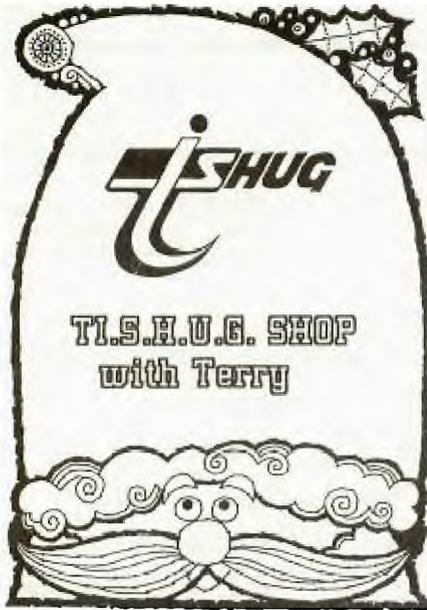
Supplied with small control box shown, and all cables ready to go...

\$ 1 6 0 . 0 0

Phone now for availability: (02)358 5602 A.H.



Sydney News Digest



Greetings from the TISHUG shop. Judging by the number of phone calls and returned tapes a lot of members are still having problems loading tapes copied on the new high speed copier. For this I apologise, however like all new machines there are bound to be a few teething problems. In fact I now think most of the problems have been overcome and that improved production will be evident from tape No. 20. The two major problems experienced with the copier have been:

Unreliability of master tape - while good quality masters were being used it became apparent that they were not designed for extensive high speed copying and in fact wore out after about 75 copies were made. To overcome this a better quality master has been purchased and 3 masters are now made and each discarded after around 75 copies have been made.

The second problem, while known, may not be so easily overcome. Presently we buy C60 tapes in bulk from a local supplier. These tapes while suitable for normal computer recording are not designed for high speed copying. What I am exploring is the possibility of purchasing proper high speed tapes which I feel, even if they cost a little more, will more than compensate with reliability. Regretably if they do cost a little more the cost will have to be passed on to members.

THIS MONTHS SOFTWARE

Tape No. 20 will be on sale from the December meeting date. Seeing as it will be near Christmas I thought that some musical programmes would be appropriate combined with a few games to keep the kids occupied on rainy days during the holidays. The tape will comprise 13 programmes but will only be recorded on Side A of the tape. No more tapes will be issued using sides A & B at least for a while.

Unfortunately Tape 20 will not be released on diskette as all the programmes will not fit on the one disk.

However for you disk users - with Editor Assembler and 32K - a demo disk of TI FORTH programmes will be on sale. One of the demos is a great piece of music while the others are various graphic demonstrations. I am sure those with the appropriate peripherals will enjoy this one.

Remember tapes are \$3 at meetings while disks are \$5. Add \$1 extra if ordering by mail

OTHER ITEMS AVAILABLE

Boxes of disks - great value at \$25 per box of 10

Disk file boxes - 90 capacity are \$40 each. These are a very well manufactured product and are real value at this price.

Book - Introduction to Assembly Language at \$23 each.

Book - Programs for the TI at \$21 each.

Cartridge Expanders - yes they have arrived. Cost is \$43 each.

Disk Fixers - also at \$43 each.

Super Duper Disk Copiers - this is our first shipment of these and boy are they great. They will back up a disk using 1 or 2 drives in about 3 passes. No more copying disks file by file. Super Duper requires 32K to operate and is priced at \$43. These are a must for the serious TI user. Get in early if you want one as I only have 5 in stock.

Super Debugger - disk and documentation \$5

TI FORTH Source Code - 2 disks and documentation \$10

TI-WRITER & MULTIPLAN Enhancements - both on the one disk \$5

Also available for loan are two copies of Brodies, Beginning Forth. This is an excellent introduction to this language and should assist you budding programmers.

When ordering any of the items listed above please add an extra \$1 for postage and packing.

REMEMBER! Both BANKCARD and MASTERCARD can now be accepted at the shop or by mail for all purchases.

PLEASE also remember to bring along your small change when purchasing at the club shop on meeting days.



OTHER NEWS

Recently received were a number of disk from an overseas contact containing some great assembly language games and utilities. My correspondent informs me that some with titles such as LASSO, TI DISK FIXER, TI DISASSEMBLER and TERMINAL EMULATOR are all public domain. I am confirming this and if it is so will release the programmes as club software.

Also soon to be released will be Brian Cabot's award winning software entry "NO FRILLS SPREADSHEET". This programme comes with detailed documentation and will be available for the cost of media production.

SOFTWARE TAPES RELEASED TO DATE

Following a number of requests for this information I have detailed below all programmes contained on respective tapes 1 to 20. I trust all members find this information useful.

Sydney News Digest

TAPE 1 - BASIC

Name that Bone
County Fair Derby
Draw Paint
Life Expectancy
Mutant Maze
Othello
Spider
Tiny Math

TAPE 3 - BASIC

Artillery
Backgammon
Capitals
Dragon Maze
Earth Attack
Hark the Herald Angels
Jingle Bells
Safety
Snoopy Christmas

TAPE 5 - X BASIC

Alien Destroyer
Aussie Fighter
Chicken Helper
Euchre
Marksmar
N-Vaders
Space Battle
Up Scope

TAPE 7 - X BASIC

Gallery Bug
Rubik's Cube
99/4A Word Processor
Medical Records
Math Practice
Balloon Voyage

TAPE 9 - X BASIC

Alien Attack
Bizmark
Darts
Skip to the Loot
Mazzo
Molasses Man
Piring Squad
Rescue

TAPE 11 - EDUCATIONAL

Color Fractions
Color Math
Elements
Fireball *
Hare-n-Tortoise *
Australia Quiz *
Spell Down
World Birds

* = X Basic



TAPE 2 - BASIC

Blockade
Camei
Co-Ordinate Geometry
TI Jumping Jack
Jedi Pilot
Fire Fighter
Yahtzee
Alphablox

TAPE 4 - BASIC

Acey Ducey
Boggle
De-Fuser
Forest Fire
Going Home
Match Pair
Space Laser
Tunnel Vision

TAPE 6 - X BASIC

Deep Space
Alphabet
TI Maths
Corner Wars
Ear Training Music
Say & Spell
Read Fast
Beethoven Variations

TAPE 8 - X BASIC

Cacti Kill
Donkey Tail
Duck
Golf
Hot Dog
Pompeii
Trapshoot
Zangust

TAPE 10 - EDUCATIONAL

Astronomy
Aust. Cities
Bowling Math *
First Math
Homonyms
Physics Problems
Time Clock
Who am I

* = X Basic

TAPE 12 - ADVENTURES

Aqua Base *
Cave Maze
Farmers Dilemma
Hobbit *
Lost Island
Paranoids
Swords & Sorcery *
Deliver the Cake

* = X Basic

TAPE 14 - X BASIC MUSIC

Aussie Fair
Elephant Walk
Candy Man
Mame
Raindrops
Yellow Ribbon
San Jose
Selection
Puppytown



TAPE 13 - MUSIC

Sweet & Low
Breezin' Along
Sweet Heart Tree
Pink Panther
Dixie
Snoopy Christmas
Christmas 1982
Music
Tucker Box
Rondo
Gundagai
Mountain
Donkey Serenade
Cords

TAPE 15 - BASIC

Boggler
Castle Nova
Duck Shoot
Miner
Puzzle
Scrabble
Spider Invasion
Trench War

TAPE 17 - BASIC

Arrow Zap
Skeet Shoot
Auto Maintenance
Card List
Decorators Helper
Stamps File
Budget
Constellations
TI-Bert
Centipede
Dambuster
Flag-O-Rama
Library Search
Gauntlet
Inventions
Lotto Selector
Mouse Maze
Mash Theme
Superman
Road Runner
Story Maker
Hot Lunch
Walk in the Woods
White Water
Zippy 2

TAPE 19 - 2 BASICS

Grog
Man Hunt
Monster Mash
Chemistry
ET's Secret
Maths
Chopper Rescue
Aces & Jokers
English Tennis
Luna Landa
S*A*M
Tense Time
Berlin II *
Power Wars *
Rear Assault *
Engineer *
Super Fly *
Devastator *
Flags 1 *
Flags 2 *
Dapto Dogs *
Walls of Fire *
Astral Caverns *
Railways *



TAPE 16 - X BASIC

Picture Book (Ships)
Solar System
Krul
Bridge Guard
Formula 1
Krazy Koala
Monopoly **
Phantom 5
Xorkle
Bat Attack
Circus
High Jump
Dr. Dave
Russian War
Window Washer
Squales
Trucker
Asteroids
Unicorn
Medi Alert
Bowling
Columbia
Pinball
Schmoo
Boxing

** 32K required

TAPE 18 - ADULTS

Application
Hello
Bartender
Party Game
Craps
Chemin de Fer
Roulette
Touch

TAPE 20 - MUSIC & GAMES

Cricket *
Bumble Bee
Witch Dance *
Camelot
Cycle Jump *
Apple Crunch *
Fur Elise *
Logo Lunch *
Egg Wars *
Lincoln
No Bananas *
Morning has Broken *
Let it Be *



* = X Basic

To Err is Human... To Really Foul Things Up Requires a COMPUTER.

But then again, to really foul things up, it took a multi-million dollar company called Texas Instruments. One magazine, here in Australia, is going to tell it all...



DEATH IN LUBBOCK

The chronicle of the birth, short life, and death of the TI 99 — what should have been the most successful home computer ever designed — provides a salutary lesson for local manufacturers in how not to market a machine, and indicates the danger signs for prospective micro buyers to avoid.

Check this article out for yourself in the November issue out now.



LOGO (Turtle) TUTORIAL



MIKE SLATTERY

Welcome to the CHRISTMAS issue of LOGO CORNER. I thought this month I would do something with a Christmas flavour and the program below is the result.

This program draws SANTA and his sleigh and moves them to a chimney where Santa gets off the sleigh. Santa then goes down the chimney to a room with a Christmas tree with blinking lights. At the same time a simple version of JINGLE BELLS is being played.

This program is a good demonstration of sprites and tiles, and contains a very useful procedure for clearing the screen of both sprites and tiles simply by pressing any key on the keyboard.

By changing STOP to MOVIE in the CLEAR procedure, the program can be made to recycle.

You will notice all the lights on the tree are the same color. Can anyone write a procedure which changes the colors of individual lights only?

I will return to the normal column in FEBRUARY, and will discuss this program more fully later in the year.

Bye for now and a HAPPY CHRISTMAS to everyone.

```
TO MOVIE
CS TELL :ALL SC 0
JINGLE
LOOPMUSIC
CHIMNEY
SLEIGH
WAIT 240
SANTA
TELL :ALL CARRY 17 SC 0 SXY 98 98
COLTREE
LIGHTS
P :ALL
END
```

```
TO JINGLE
CM
J1 J2 REST 1
J3 REST 1
J4 REST 1
J1 J6 J7 J8 REST 2
J9 J10 REST 1
J11 J12 REST 1
J9 J10 REST 1
J11 J16 REST 2
END
```

```
TO J1
MUSIC [0 9 7 5 0] [2 2 2 2 4]
END
```

```
TO J2
MUSIC [0 0 0 9 7 5 2] [1 1 2 2 2
2 4]
END
```

```
TO J3
MUSIC [2 11 9 7 4] [2 2 2 2 4]
END
```

```
TO J4
MUSIC [12 12 11 7 9] [2 2 2 2 4]
END
```

```
TO J6
MUSIC [0 9 7 5 2] [2 2 2 2 6]
END
```

```
TO J7
MUSIC [2 2 11 9 7 12 12 12] [2 2
2 2 2 2 3]
END
```

```
TO J8
MUSIC [12 14 12 10 7 5] [1 2 2 2
2 4]
END
```

```
TO J9
MUSIC [9 9 9 9 9 9] [2 2 4 2 2 4]
END
```

```
TO J10
MUSIC [9 12 5 7 9] [2 2 3 1 4]
END
```

```
TO J11
MUSIC [11 11 11 11 11 9 9] [2 2 3
1 2 2 2]
END
```

```
TO J12
MUSIC [9 9 9 5 5 9 7] [1 1 2 2 2
2 3]
END
```

```
TO J16
MUSIC [9 9 12 12 10 7 5] [1 1 2 2
2 2 3]
END
```

```
TO CM
SETVOICE 0
SETVOICE 1
END
```

```
TO CHIMNEY
TELL 7 CARRY 11 SXY 6 -38
TELL 8 CARRY 12 SXY 20 -38
TELL 9 CARRY 13 SXY 6 -38
TELL 10 CARRY 13 SXY 20 -38
TELL 11 CARRY 11 SXY 6 -54
TELL 12 CARRY 12 SXY 20 -54
TELL 13 CARRY 13 SXY 6 -54
TELL 14 CARRY 13 SXY 20 -54
TELL 15 CARRY 11 SXY 6 -70
TELL 16 CARRY 12 SXY 20 -70
TELL 17 CARRY 13 SXY 6 -70
TELL 18 CARRY 13 SXY 20 -70
TELL 19 CARRY 11 SXY 6 -86
TELL 20 CARRY 12 SXY 20 -86
TELL 21 CARRY 13 SXY 6 -86
TELL 22 CARRY 13 SXY 20 -86
TELL [7 8 11 12 15 16 19 20] SC 1
TELL [9 10 13 14 17 18 21 22] SC 8
END
```

```
TO SLEIGH
TELL 1 CARRY 6 SXY -43 78
TELL 2 CARRY 6 SXY -59 78
TELL 3 CARRY 7 SXY -75 78
TELL 4 CARRY 8 SXY -91 78
TELL 5 CARRY 9 SXY -91 94
TELL 6 CARRY 10 SXY -75 94
TELL [1 2] SC 15
TELL [3 4 5 6] SC 8
TREE
TELL [1 2 3 4 5 6] SV 3 -2
TELL 1
POS
END
```

```
TO POS
IF XCOR > 55 TELL [1 2 3 4 5 6]
SV 0 0 STOP
POS
END
```

```
TO TREE
CS
TELL TILE 183 SC 0
TELL TILE 231 SC 0
TELL TILE 239 SC 0
TELL TILE 247 SC 0
TELL TILE 255 SC 0
ADD1 ADD2 ADD3
PT 255 15 3 PT 247 15 4
PT 246 13 5 PT 245 14 5
PT 244 15 5 PT 243 16 5
PT 242 17 5 PT 241 14 6
PT 244 15 6 PT 240 16 6
PT 246 12 7 PT 245 13 7
PT 244 14 7 PT 244 15 7
PT 244 16 7 PT 243 17 7
PT 242 18 7 PT 239 13 8
PT 238 13 9 PT 237 12 9
PT 236 17 8 PT 235 17 9
PT 234 18 9 PT 244 14 8
PT 244 15 8 PT 244 16 8
PT 244 14 9 PT 244 15 9
PT 244 16 9 PT 245 11 10
PT 246 10 10 PT 233 12 10
PT 232 18 10 PT 243 19 10
PT 242 20 10 PT 239 12 11
PT 238 12 12 PT 237 11 12
PT 236 18 11 PT 235 18 12
PT 234 19 12 PT 245 10 13
PT 246 9 13 PT 243 20 13
PT 242 21 13 PT 244 15 20
PT 244 15 21 PT 244 15 22
PT 233 11 13 PT 245 10 13
PT 246 9 13 PT 232 19 13
PT 243 20 13 PT 242 21 13
PT 239 11 14 PT 238 11 15
PT 237 10 15 PT 236 19 14
PT 235 19 15 PT 234 20 15
PT 233 10 16 PT 245 9 16
PT 246 8 16 PT 232 20 16
PT 243 21 16 PT 242 22 16
PT 239 10 17 PT 238 10 18
PT 237 9 18 PT 236 20 17
PT 235 20 18 PT 234 21 18
```

Glad Sidings

From

TECHO TIME



WITH ROBERT

Last month some of the features of the ADVP CHIP were mentioned. This month some the drawbacks will be mentioned.

Firstly, currently available software (eg. TI-WRITER, MULTIPLAN, EDITOR-ASS., ETC.) may not be fully compatible ie. they will still appear in a 40 column format not 80 column. Next to use this chip extra memory must be added to allow for the storage of extra data for the video display. The problem of availability (or the lack of it) of suitable internal machine code routines for accessing some of the added features of this new chip.

No doubt as time goes by and the ADVP CHIP becomes more readily available, ways of adapting this chip to the TI-99/4A will become apparent, until then we will just have to wait.

To continue with last months letter from John of Gulgong, regarding the 20 Ma loops. These loops perform the same function as the RS 232 by sending sending serial data to the coupler for transmission. The primary difference between the two systems is that the RS 232 uses varying voltage levels to represent "1"s and "0"s for the data whereas loops use varying current levels to represent the data.

To connect the coupler to the computer refer to the JULY '84 NEWS DIGEST for the connections.

Now as this is the last newsletter for the year I would like to hear from anyone having any projects they would like assistance with or demonstrate at the full-day workshop in FEBRUARY '85.

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.

UNTIL NEXT YEAR
MERRY CHRISTMAS-HAPPY NEW YEAR

```
PT 244 10 19 PT 233 9 19
PT 245 8 19 PT 246 7 19
PT 244 20 19 PT 232 21 19
PT 243 22 19 PT 242 23 19
PT 232 10 19 PT 233 11 19
PT 232 12 19 PT 233 13 19
PT 232 14 19 PT 233 16 19
PT 232 17 19 PT 233 18 19
PT 232 19 19 PT 233 20 19
PT 232 21 19
```

CARPET
END

TO ADD1

```
MAKE "P 13 MAKE "T 17 MAKE "C 13
MAKE "R 10 MAKE "Y 12
ADR :C :R :T :Y :P
END
```

TO ADD2

```
MAKE "P 11 MAKE "T 19 MAKE "C 11
MAKE "R 13 MAKE "Y 15
ADR :C :R :T :Y :P
END
```

TO ADD3

```
MAKE "P 10 MAKE "T 20 MAKE "C 10
MAKE "R 16 MAKE "Y 19
ADR :C :R :T :Y :P
END
```

TO ADR :C :R :T :Y :P

```
IF :C > :T MAKE "C :P MAKE "R 1+ :R
IF :R > :Y STOP
PT 244 :C :R
ADR 1+ :C :R :T :Y :P
END
```

TO CARPET

```
MAKE "C 0
CAR :C
END
```

TO P :ALL

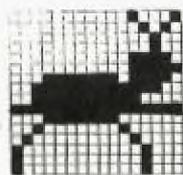
```
IF RC? CLEAR STOP
TELL :ALL SC 3 + (RANDOM * 11) / 9
WAIT 30
P :ALL
END
```

TO CLEAR

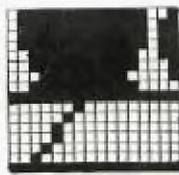
```
CS SM
TELL :ALL SC 0 CARRY 17 SV 0 0
SKY 96 96 STOP
END
```

TO HELP

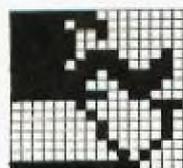
```
PRINT [ MOVIE RUNS THIS PROGRAM ]
WAIT 180
MOVIE
END
```



6



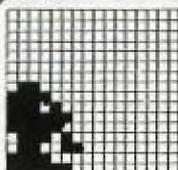
8



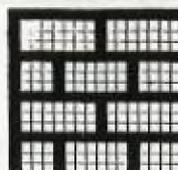
7



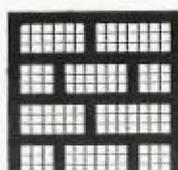
9



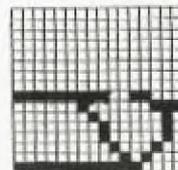
10



11



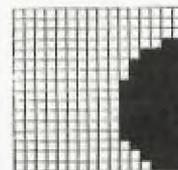
12



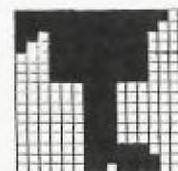
14



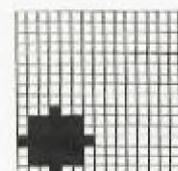
13



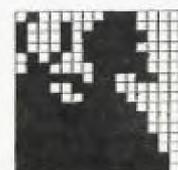
20



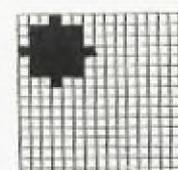
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CHRISTMAS ... a time to give!

TI-99/4(A) Hardware and Software just the things for your family & yourself.

by Mark Nielsen.

Recently I had the pleasure of using the Auto Spell-Check program that has been written for the TI-99/4A computer. The program is designed to be used with the TI-WRITER word processor. But can also be used with the EDITOR ASSEMBLER PACKAGE. The program is used to check the spelling of all words in the document against the dictionaries that are stored on the Spell-Checker diskette. The user can also create his or her own dictionaries. The standard dictionary that comes with the program has 20,000 words stored in it, and the facility to use an unlimited amount of user defined dictionaries.

The use of the program is very simple, the first step is to create then document in the normal manner, through the text editor of the TI-WRITER or the EDITOR for the EDITOR ASSEMBLER. The file must be in DISPLAY/VARIABLE 80 format on the disk. The TI-WRITER automatically stores it's files in this format, but the EDITOR ASSEMBLER can store them in both VARIABLE or FIXED formats. When using the EDITOR ASSEMBLER use the save option from the menu to save the file, when asked what format to use, use the VARIABLE 80 format.

After the document is written we must load in the AUTO SPELL-CHECK program. To load the program in from TI-WRITER, place the system disk (DISK A) into drive #1 and select option 3 from the main menu, you will be presented with a filename, just press enter and the program is automatically loaded. The title screen then appears we press enter to leave the title screen and go on. We are then asked to enter the filename of the file we want to check, remove the system disk from the disk drive and place the disk with the file to be checked on it and then the file is loaded.

After the file is loaded, the program then asks you to replace the system disk (DISK A) and hit enter, the program then checks the text against the first half of the dictionary and then asks for DISK B to be inserted into drive #1 and then it checks the rest of the dictionary. When the program has finished with then main dictionary it will ask for the name of the user defined dictionary, if you have defined any, you type in their names, one at a time, and the text is checked against these dictionaries. If you have no user defined dictionaries then just press enter to go to the next part of the program.

The next part of the program displays the words that it does'nt find in all of the dictionaries, and then you can correct the spelling, if need be and include the word in your own dictionary. This part of the program displays a menu and displays the first word that was not found in the dictionaries. the options available to you at this time are: C to change the spelling of the word on the screen, or choose to disregard the word and go on to the next word with the "D" option. The next option is "V" to view in context, this displays the sentences surrounding the word, so you can see the word in the context of the document. The last option is "A" to add this word to your own dictionary.

This is done for each and every word that was not found in the dictionaries. After you have done this, you can review what changes you have made, by using the "P" to display the previous word and "N" to display the

next word. After you have been right through the list of words you are asked if you are finished or not, if you are then you have the option of saving the corrected document. Then you are asked if you want to add the words to your own dictionary. If there are no incorrectly spelt words then the program returns to the main menu.

The program is very flexible and easy to use. The potential of the package is enormous, the number of user defined dictionaries is unlimited. This means that you can add as many words to your dictionaries as you like, making the dictionary quite large. The program is ideal for a person who wants the most out of his word processor. With little to no changes to the program, we could see the program loaded into EXTENDED BASIC and used with some of the public domain word processors that use DISPLAY/VARIABLE 80 disk formats. All in all a very good utility.

This valuable UTILITY for TI-WRITER costs a mere \$59.95 from LINDLEY & ASSOCIATES, P.O.BOX 595, MARRICKVILLE, NSW 2204 or 127 CROWLEY ST, ASPLEY. QLD 4034 (07)2636161. A great gift to buy a friend this Christmas.

Surprise! Surprise! Another source of TI99/4A software has come to light, this time from JAYCAR ELECTRONICS.

JAYCAR has imported on a trial basis three cassette based programmes complete with reference books and presented to you in a video case type package.

The programmes are (1) 51 Fun and Educational programmes, (2) Entertainment in TI Basic and Extended Basic, (3) 24 Basic Programmes.

The first package has a 90 page book complete with all listings and explanations. Side II of the cassette runs an Enhanced Version of Side I

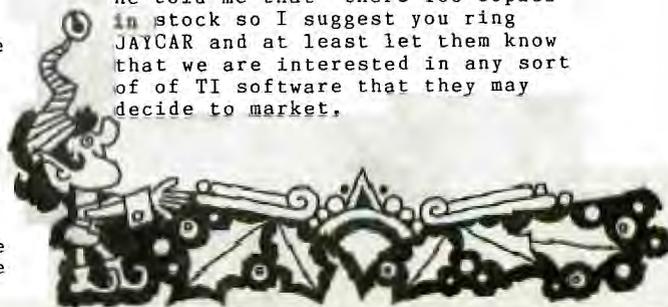
Package No.2 contains a 170 page book again full of listings and explanations. And the cassette runs an Enhanced Version on Side II.

Number (3) in the current series boasts 220 pages of information. Great for the beginner. Side II of the cassette is a duplicate of Side I,

Well there you have it. The value is certainly there and also the quantity.
Price range is \$17.95-\$19.95

As I have stated JAYCAR are running this on a trial basis, so it is up to TI99er to maintain JAYCAR'S interest in this new venture.

I spoke to the Manager/Director GARY JOHNSTON and he told me that there 100 copies in stock so I suggest you ring JAYCAR and at least let them know that we are interested in any sort of TI software that they may decide to market.



ISHUG TEX-ED

A review from our
EDUCATION CO-ORDINATOR
Peter Lynden.



Your newly-elected Education Officer has been spending the last couple of weeks locked away reading some of the exciting new TI99/4A books available from HOLT-SAUNDERS PTY LTD. There are two publishers represented and they should be familiar to most of you - COMPUTE! BOOKS and HAYDEN.

Here are my thoughts on what I found. If you would like more information and a catalog you can contact Maureen Murphy, the Computer Books & Software Manager, Holt-Saunders P/L, 9 Waltham St., Artarmon, 2064. Phone: 439-3633.

FOR THE KIDS...

There are three books I would place in the "suitable for kids" category. I think they would be of most benefit to the young computer users in the family. Each book's basic content is program orientated; that is, they consist mainly of listings that the kids can practice keying into their 4A's. I have evaluated these books on the quality of the programs and their presentation since this is about the only criteria that differentiates one from the other.

My favourites are the two D'Ignazio books. Like many early 4 and 4A users I enjoyed reading his articles in COMPUTE! magazine where his relaxed, conversational style of journalism made you immediately feel at home with whatever was being discussed or explained. Fred D'Ignazio is a highly respected authority in the U.S. when it comes to kids and computers.

"Art and Graphics with Your TI99/4A" by Thomas A. Thompson, Jr (Hayden, 98 pp. \$20.95) is an exceptionally good book. The cover exemplifies the author's attitude to computer graphics - they must be eye catching and appealing. Thompson must also be congratulated for providing an actual screen photograph with each listing - you at least know what the end product of an hour's typing will look like.

There are 25 listings in all, printed at normal size, which is an advantage for younger users. Titles include Here Comes Santa, Valentine's Message, Danger in the Deep, I saw the Light, Snake Eyes, Spy in the Sky and Flytrap. Most of these are either static displays or contain limited animation, and the graphics are of the lo-res "block"-type but this is in keeping with the book's title. For kids getting acquainted with the world of 4A computing I think this would be a good introduction.

Fred D'Ignazio's "TI In Wonderland" (121 pp.) and "The TI Playground" (116 pp) are both published by Hayden and available at a very reasonable \$17.50 each. Between them there is a total of 43 educational and learning programs aimed mainly at the primary school years. In fact quite a few of the listings were coded by students from the author's home town in Virginia.

Topics include Alphabet, Words, Numbers, Colors, Music, Drawing, Knowledge and Imagination. Common to both books are two sub-routines teachers could use in their own programs - Sad Face, for when a student responds incorrectly, and Happy Face, for when the answer is correct.

Each listing is short enough to make keying in easy even for younger users. The typeset is larger than normal and hence clearly displayed - no more mixing up zeros

with '0's, or 'B's with eights. There is a note to parents and teachers preceding each listing followed by a short introduction explaining the object of the program to the students. All variables are itemised and explained, and this is a commendable practice I am heartened to see most authors have adopted.

Have a closer look at these two books - I feel you won't be disappointed. They are educationally sound and make learning fun.

FOR ADVANCED USERS...

Three books I would place in the 'advanced' category are "Creating Arcade Games on the TI99/4A" by Seth McEvoy (Compute Books, 200 pp. \$22.95), "Guide to Extended Basic Home Applications on the TI99/4A" by Chris Flynn (Compute Books, 199 pp. \$22.95) and C. Regena's "Programmer's Reference Guide to the TI99/4A" (Compute Books, 358 pp. \$25.95).

McEvoy's book is attractively presented, from the two-tone cover to the cross-referenced index that concludes it. "Creating Arcade Games" has been written to help you create fast-action, arcade-style games so that you don't have to wait to buy them - you can be guided by the tutorials in this book (complete with examples) into creating your own individual games.

Early chapters cover character generation and placement, animation, using keyboard and joystick input routines, collision checking and sound. Chapters 7 through 13 use listings to consolidate what has hopefully been learnt in the previous chapters. Some typical titles are Martian Attack, Martian Revenge (with horizontal scrolling - a difficult achievement!), Riverboat, Shark (how to use joysticks to shoot a target), Mushrooms, Hobo Party (principles of animation) and Moneybags (sprites in Extended BASIC).

The concluding chapter deals with game design. The author suggests you begin each new programming venture by asking yourself - "What will be the goal of my program (game)?"

Along with the next book in this review I would suggest that "Creating Arcade Games" would be an essential purchase for anyone serious about home game computing, and programming generally.

One of the most comprehensive tutorial-type books presently available would be Regena's "Programmer's Reference Guide". Admittedly some of the listings have appeared previously in COMPUTE! magazine but this doesn't in any way detract from what I consider the definitive BASIC learning guide to the 4A Home Computer.

It is recommended that you use this book whilst sitting at your computer for "hands-on" experience, since experimentation is encouraged and you are urged to avail yourself of the 4A's powerful string handling, automatic line numbering, resequencing, and trace functions when programming. Examples of these functions are included throughout the listings.

Even though "Guide to Extended Basic Home Applications" by Chris Flynn (Compute Books, 199 pp. \$22.95) has a similar title to "TI BASIC Computer Programs for the Home" by Charles D. Sternberg (Hayden, 292 pp. \$23.95), it is very different in that it contains a smaller number of expertly developed applications and is as much a tutorial as a collection of useful programs.

Chapters 1 and 2 cover the value of using the Extended BASIC programming language over normal BASIC with multi-statement lines, sub-programming with CALL commands, improved "if-then" statements, screen formatting with Display At and Sprites all being explained.

Sydney News Digest

whilst Chapters 3 through 7 establish file management, electronic spreadsheet ('Tiny Plan'), business graphics (Bar Charts), electronic card file and appointments calendar guidelines.

The author has also thoughtfully provided both cassette and disk versions of his listings which makes them accessible to everyone not just those who own disk systems. As an added bonus the last chapter includes auto-loading Systems Menu, Catalog and Error Recovery files so that when you have saved all the listings to be found in the book you can tie them all together into a professional-looking home management package with the book serving as documentation.

I thoroughly recommend "Guide to Extended BASIC Home Applications" as both value for money and as an educational tool.

Sternberg's book is fairly dry in comparison. It is an adaptation of an earlier work published in 1980 under a very similar title. As such it has dated badly - witness the chapters on automobile maintenance and trip planning, recipe and meal planning, as well as supermarket lists. There are even programs for lawn/plant care and paper routes.

Two commendable features though of "TI BASIC Programs for the Home" are the sample printout of each listing and the fact that over 180 programs are included. However, there are no graphics or sound routines, and borders are drawn with exclamation marks and multiple rows of asterisks whilst program information and directions are kept to a minimum.

A BOOK OF LISTS...

All the programs listed in "33 Programs for the TI99/4A" by Brian Flynn (Chris's brother?) require the Extended BASIC cartridge so if you haven't as yet purchased one you will need to do so if this book's content appeals to you.

The first section on Money Management is not really applicable to our Australian context. For example, programs relate to Treasury Bill Yields (using U.S. Treasury formulas!), Municipal Bond buying, and an I.R.A. Planner. The Basic for Business section, however, is of more interest (excuse another pun!) with listings for 'Time-Series' forecasting and turning your 4A into an electronic cash register and money counting machine.

As with the other COMPUTE publications all listings are clearly explained in larger than average typeset for reducing errors when keying in.

In the games section, 'Brer Rabbit' is a word guessing game utilising engaging graphics but little color, whilst 'Rings and Poles' is the traditional Towers of Hanoi game, and 'Matches' and 'Vanilla Cookie Munch' are variations on the Game of Nim theme.

Further chapters explore statistical analysis, curve fitting, multi-linear regression analysis, matrix inversion using Gauss-Jordan Sweep with complete pivoting, and random number generation and testing. All in all, a "mixed bag" really but I am sure there is something here all the family can use.

"Stimulating Simulations for the TI99/4A" by C.W. Engel (Hayden, 105 pp.) assumes the user has some knowledge of BASIC programming conventions and wants to develop 'interactive' programs where one has to achieve the objectives set by careful consideration. As the title implies all 13 listings (written mainly in BASIC) are simulations each with their own unique

strategies. Flowcharts, a description of all variables used, and a sample run accompany each listing.

In 'Lost Treasure' you are an adventurer who must travel across an island (with a not-to-accurate compass!) trying to uncover the treasure in less than fifteen moves. 'Forest Fire' has you in the role of a firefighter in a race against time.

In 'Business Management' you must buy raw materials to produce an economical end product but each month your costs of production, raw materials and selling price vary - your objective, as a good business-person, is to maximise profits.

All the games are text-only and this may cause many potential purchasers to overlook it but I think if you are interested at all in developing logic and reasoning skills in your children (and some adults!) then you should consider "Stimulating Simulations" because the programs are just that.

ALL IN THE GAME...

To finish off this review there are two books devoted entirely to games that should appeal to the younger 4A users.

"Computes' First Book of TI Games" edited by Regena (Compute Books, 211 pp. \$22.95) contains 29 action and learning programs with the majority of them by Regena herself, so you can be assured of quality. This book is actually better described as a 'best of Compute' because all the listings have been previously published in that magazine so if you missed them before here's your chance to catch them up.

The front and back covers give an indication of the the quality of the games - the graphics look superb. My favourite is 'Mosaic Puzzle' but other goodies include 'Superchase' (a maze game), 'Bogglor' (also excellent and very challenging), TicTacToe, Astrostorm, Goblin (very difficult to beat!), Jumping Jack (a short program but fast and entertaining), Diamond Drop, Air Defense, Marble Hunt (translated from Vic-20), Word Search, Math Man and Joystick Drawing (not 'Mousepaint', but never mind). Each program is explained and clearly printed to minimize 'typos'.

Before keying in the programs you should take a few minutes to read the sections 'Hints for Game Programming' and 'Specific Programming Techniques' because here you have some very worthwhile ideas on such tricks as using two joysticks in games, using random numbers, detecting objects, timing, and how to generate mazes on your screen or to your printer.

One thing puzzles me though. The cover states that there are 29 program listings but the Foreword puts the number at 30. I counted 32 - now that is value for money!

The purpose of "Fun and Games with your TI99/4A" by Stephen Muncy (Hayden, 104 pp. \$20.95) is threefold. Firstly it aims at providing a review of graphics programming as it is coded in TI BASIC; secondly, to teach, in easy-to-follow steps, game creation, and thirdly, to provide eleven arcade style games to key in. In all respects I am happy to report the author achieves his objectives.

You will find that if you have some programming experience most of what is contained in the first half of the book will not be new to you, but for the beginner there is much that can be learnt. Each section is presented concisely without jargon and there are sufficient examples to show what the author has in mind. The pages devoted to creating graphic games are well worth reading - you can put borders around title screens,

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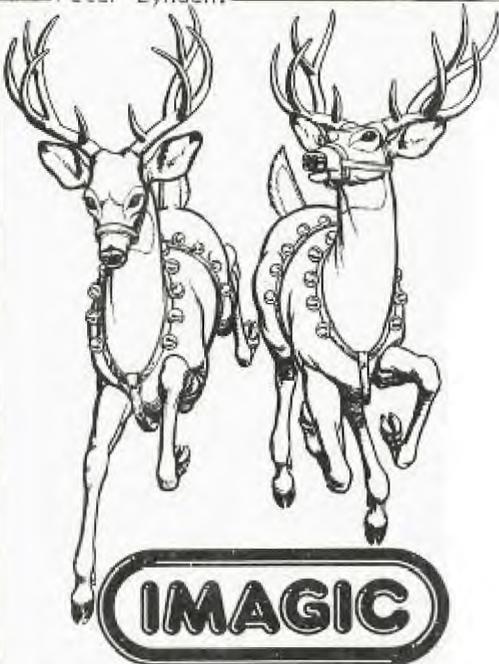
use animation, add scoring routines and create realistic explosions.

The games themselves include 'The Last Robot' (which is very good), 'Chopper Rescue' (similar to M*A*S*K), 'Frog Race', 'Red Alert' and 'Raceway'. Old favourites include 'TicTacToe', 'Biorhythms', 'Sam Slot', and 'Artillery Battle' and as a bonus, five miniprograms - 'Music Generator', 'Graveyard', 'Traffic Jam', 'Math Made Easy', and 'Toss a Coin'.

If I was to find to fault with "Fun and Games" it would be with the printing of the listings. They are on the small side compared to the other Compute offerings reviewed above. The type from a daisy wheel printer looks much more professional than the dot matrix printer used here. But otherwise a book well worth investigating.

Before signing off for this month let me just mention a handy little device called the "TI99/4A Quick Key Basic Reference Chart" (Hayden through Holt-Saunders, \$4.95) created by Aubrey Jones Jr., the author of the "I Speak Basic to My ..." series. It is the ideal gift for the avid 4A hacker in your family. Just think no more thumbing through manuals looking for color sets, editing commands and error codes. They're all collected here, neatly arranged on a laminated chart that you can place above your computer desk and I'm sure you will refer to it constantly.

Cheers for now,
Peter Lynden.



CHRISTMAS MESSAGE

Imagic Australasia wish to thank all 99/4A owners for the support they've given during the past year. We've some exciting developments in the pipeline and we'll be advising Shane as soon as they're confirmed. Now to answer all those questions we know you want to ask.

NEW EXPANSION SYSTEMS

We ran into an unexpected delay with the Cor-Comp expansion modules. Simple reason for this was Cor-Comp didn't produce a power supply with 240 volt input. We obtained quotes from Australian manufacturers that were ridiculously expensive making the expansion systems (we

felt) far too expensive. If its any comfort the U.K., Europe and Germany had the same problem so we all joined forces to have Cor-Comp produce a 220/240 volt version. No power supply - no orders. So with gentle persuasion they've agreed and our first power supply is on the way for testing. If its O.K. then in come the new expansion systems.

New Control Cards etc., we rejected the first pre-production Controllers due to one I.C. not having sufficient heat sinking. Cor-Comp have fixed this and our first batch of Double Density Control Cards should be shipped at the time of going to press. New 32K Memory Cards and RS232 will also be in the first batch. Get your orders in as soon as possible.

We regret the delay but we feel it is essential that equipment be strictly quality controlled. We aren't prepared to import sub-standard equipment. Cor-Comp have rectified these problems and the new hardware meets T.I. standard. The 99000 Expansion System and the 99000 Computer has been delayed. When we know more we'll advise.

CHRISTMAS SPECIALS

We've special prices on games modules for Christmas. Check your Dealer for details.

T.I. GRAPHICS COMPETITION

We received four entries for this competition from the Sydney Group.

Shane advised that maybe a little more time was needed, so we've declared a winner for the first round and re-opened the competition.

We've set a nominal closing date of November 15th however this might be subject to extension as it could clash with exams. If need be we'll extend into January to allow those Super Programmers to really do a job. Remember we want the rear view of a modern fighter as it would be seen in an air to air combat situation. Try including afterburns and sound. Machine language preferred but don't let that deter the basic wizards.

One point. Don't concentrate on fancy titles. Its the subject matter that counts. One past entrant featured an excellent title page but the subject was merely average.

Concentrate on the action !.

Regards,

DON DENNIS.

IMAGIC(AUSTRALIA)P/LTD



Holiday CHEER!

THE JOY OF CHRISTMAS

At our first 1985 FULL DAY PROGRAMMERS TUTORIAL WORKSHOP, being conducted on Saturday 2nd of February, there will be classes in most languages available to learn for your TI-99/4(A) HOME COMPUTER. Already a special TUTORIAL BOOKLET is being designed for that event. Get all the details in your next(FEBRUARY) issue of your Sydney News Digest.

Here is something to get started on from Jim Howard of TI.S.H.U.C. Use it as a master, and photocopy it, so that you can prepare your SCREEN/TEXT LAYOUT.



SCREEN TEXT LAYOUT WORKSHEET FOR

LINE #S	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	
	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	
	ROWS	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61

COLUMN #S FOR VCARR, HCHAR, SCARR → TAB (MAX 35)

COLUMN NUMBERS FOR USE WITH DISPLAY AT (R,C)

