



The Edmonton 99'er Computer Users' Society
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99'er ON LINE... is the news letter of the Edmonton 99'er Computer Users' Society published ten times a year. Unless otherwise stated, all articles may be republished in other news letters provided that source and author are identified. We will credit authors quoted in 99'er ON LINE.

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DISCLAIMER: Information contained in this newsletter is written by and for amateurs; therefore we cannot make any guarantee of the accuracy of any information contained herein. Use at your own risk.

REGULAR MEETINGS... are held on the second Tuesday of each month (except July and August) in room 207 of the General Services Building, on the University of Alberta campus from 7:00 till 10:00 PM and are open to all members in good standing. Non-members may attend their first meeting free of charge.

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JUNE MEETING

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The June meeting was well attended by over 30 members. This meeting was supposed to have been a general business meeting including an election of officers. However, there were an insufficient number of nominees to each of the executive positions. Considering that most of the current executive have held various offices for some time and are no longer willing to continue in an executive capacity, to have held an election under those circumstances would have been a farce! Consequently, the executive decided to postpone elections to the October meeting.

Regarding this poor showing of members willing to give a little of their time to the administration of this users' group, Tom Hall spoke at length to the members stating that it was high time that new people become involved to a greater degree. He reminded us that the current executive had been running the group for up to four years and that they were starting to run out of ideas and the creative energy required to keep the group in a healthy, dynamic state. Most of them were unwilling to stand for being acclaimed to their positions for another year once again. He made it quite clear that if a proper slate of candidates cannot be fielded for an executive election by the October meeting, then this group is effectively dead and dissolution will commence.

On a pleasanter note, Judy from NOVA brought along the new GENEVE computer for a demo run. Yes, it does exist! Yes, it does work! NOVA has it in stock and can demo it for you if you missed the meeting.

John Harbour prepared a questionnaire to help the group arrange a 1987/88 schedule. It was circulated during the meeting and most members completed the form and handed it back. If you have not yet done so, please fill out the one included with this issue and return it to us. Your input is required.

NEXT MEETING

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The next meeting will be Tuesday, September 8th at 7:15 PM. Same place as usual; General Services Building, U of A

campus in room B49.

A reminder to all that your attendance at this meeting is vital considering that much has to be done to assure a good slate of candidates are prepared to stand for election in October. If you plan to be a candidate, here is your chance to do some campaigning. Participate - get out to a meeting. YOU MAY NOT HAVE TOO MANY MORE CHANCES!!!!

 A PARTING WORD
 =====

This issue of 99'er ONLINE covers the period of June-July-August, 1987 and represents my final issue as I am turning over production of this newsletter to John Harbour. Like our current executive, I too am suffering from burn-out; the last several issues of this newsletter have not been up to standard and I apologize to each and every one of you if you have found this publication somewhat lacking lately.

Working on this newsletter has been a very rewarding experience. Through it, I have come to know most of the members of this user group and I have also "met" several fellow TI'ers in other cities in Canada and the U.S. It also forced me to really explore TI-Writer to a depth I would have never attained had I not sat down with it month after month. Being the editor, I was asked to sit in on executive meetings so that I could report their decisions to you in a timely fashion. This provided me with an opportunity to participate (in a small way) in our user group's decision making process as I have never been too shy about offering my advice or opinion.

Having been intimately involved in this group for some time, I have been becoming aware that this group is rather unique. Our members come from many differing backgrounds both educationally and culturally. Our age group stretches from early teens to those who can no longer recall their teens. Some of us make our livings working with computers while others can barely get past turning them on. Yet you all have special talents and interests that continue to amaze me. The pooled experience amongst our members is phenomenal! And yet most of you prefer to sit on your duffs and be spoon fed month after month by an executive that has reached the end of it's creative rope. You think this machine is dead? Keep sleeping and it will be. In Edmonton at least. I know this group has the talent, the resources to really do things and make our meetings exciting. But it takes effort and a willingness to become involved.

One way to get involved is to volunteer your known talents like John Harbour and Yves Chevalier have just recently. Another way is to volunteer for something for which you have no known talent but which interests you. Who says you have to perfect? (Just check out my spelling and grammar in this newsletter and you'll see what I mean!) This way, you will not only develop yourself, but you will also move this group into newer and likely better areas. Another way is to not say "No" when someone nominates you for an executive position. After all, being an exec on a computer user group is not quite the same as being Prime Minister but it is a start. And like I said before, you don't have to perfect. Lord knows our Prime Minister isn't.

As a group, we have lost sight of those amongst us who "barely know how to turn on" their computers. I am sure that the "experts" (quotation marks intended) intimidate these members with our talk of bytes, compiling, assembling, ram disks, etc. If our group survives past the October ultimatum, then the needs of these novices must be addressed. That means that our "experts" must start speaking English, display more patience and above all remember what it was like for them just a few years ago. This doesn't let the novices off the hook either! You can't expect help if you don't ask after all. And you have got to be willing to invest some time trying things for your self; you just might discover something the "experts" didn't know. And invest some time in group activities - it's only human nature to take an interest in someone who is obviously interested in the welfare of the group.

To close, I want to thank John for taking over responsibility of this newsletter. I know that all of you will support John as you have me and I hope that many more of you will begin writing for him. And I want to especially thank all of you who have supported me not only with your articles for the newsletter but also those who simply passed along their encouragements and who expressed their appreciation for my efforts. Believe me, it kept me going! Please consider what I have said above. If things don't turn around very quickly, John will be writing an eulogy.

 MULTIPLAN AS A DATABASE
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If you have noticed, the questionnaire prepared by John Harbour in this issue was done on MULTIPLAN instead of TI-WRITER. Why? Well, one reason is that all those columns can be easily set up with MULTIPLAN but can be a very real horror with TI-WRITER! This neat package has some other uses too. For instance, a database manager. The following was written by Gabriel Laszlo and appeared in the September '86 issue of the Ottawa U.G.'s newsletter.

Many TI owners look at the "integrated" software available for commercial computers found in offices, and wonder whether anything similar will ever be developed for their 99/4A.

One of the more popular products is LOTUS 1-2-3, which offers a spread sheet, a database and a graphing package all in one program. There is, unfortunately, nothing in the TI repertoire to equal this program but there is one which comes surprisingly close: MULTIPLAN.

In fact, MULTIPLAN scores 2 out of 3, which is not bad. No one can claim that MULTIPLAN has any graphing capability. However, MP is an excellent spreadsheet - some say the best. But MP has another strength which makes it an effective database manager quite similar to LOTUS 1-2-3.

The feature which makes a program into a database is the sorting function, and MP has got it. The program can sort numerically, alphabetically, in ascending order or the other way around. This gives MP a 1-2 punch that comes pretty close to 1-2-3's!

The following example may serve as an illustration:

MP can be set up to catalog a VCR tape library. Each tape is described on one row of the spread sheet using column headings such as TAPE NAME, PROGRAM TITLE, COUNTER START, COUNTER STOP, ELAPSED TIME, etc. Other columns could be added as MP can handle up to 32 columns of 32 characters each!

Once the entries are made, the catalog can be whipped into shape using the sort function. Here, care must be taken not to sort the column headers into the data. (So the wise person would carefully save his database at this point on to a separate disk. -ED) First, all rows are sorted by the counter start column in ascending order. Second, all rows are sorted by the tape name column, also in ascending order. Now we have all the tapes listed in order with the programs on them according to their place on the tape. This format can now be printed to provide an inventory of programs and recording times still available on each tape, if blank spaces were noted (or even better, calculated!) in the data.

Next, an alphabetic listing of programs can be obtained by sorting again on the program title column. To make the printout more readable, use the move function to reposition the sorted column into column one. Together, the sort and move functions can be used to provide a wide variety of reports from a single database model. A helpful hint here; the print range should be checked and adjusted after each sort and move operation to assure your printout contains just the information you need.

The possibilities, of course, are endless. The spreadsheet functions can be combined with data handling to provide powerful applications. Added to this is MP's ability to use supporting sheets and the capability to create a file that can be further massaged by TI-WRITER. Also, if your report is more than 80 columns wide, you can print it out sideways using the MP-PRINT utility (see our librarian).

The conclusion is obvious: the 99/4A has some very useful and up to date software which is only limited to a large extent by your imagination.

DISK AWARD  
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Where would we be without Jim Beck? Without his regular and original contributions, this newsletter would be a great deal thinner and there would be very little to interest many of our readers. The basic programs you see in this issue are due to Jim's talent of being able to punch them out like he was using a cookie cutter! Once again my thanks Jim. Remember to claim your disk at the next meeting.



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CRASH-EM by Jim Beck
=====
Program is in consol basic
Requires Joystick #1.
A variation of original TI
module game CAR WARS.

100 DIM C$(4)
110 DIM BC(9,4)
120 CALL CLEAR
130 CALL SCREEN(2)
140 PRINT "          CRASH "
EM": : : : :
150 PRINT "          BY JIM B
ECK"
160 PRINT : : : : :
170 PRINT "PRESS ANY KEY TO
START GAME."
180 FOR D=1 TO 14
190 CALL COLOR(D,16,2)
200 NEXT D
210 CALL KEY(0,K,S)
220 IF S=0 THEN 210
230 CALL CLEAR
240 FOR D=1 TO 14
250 CALL COLOR(D,2,2)
260 NEXT D
270 SCR=0
280 LT=0
290 CALL CHAR(120,"101010101
0101010")
300 CALL CHAR(121,"00000000F
F000000")
310 CALL CHAR(122,"00000000F
0101010")
320 CALL CHAR(123,"10101010F
0000000")
330 CALL CHAR(124,"000000001
F101010")
340 CALL CHAR(125,"101010101
F000000")
350 CALL CHAR(126,"000000001
0000000")
360 C$(1)="0010387C7C387C7C"

370 C$(2)="0000367EFE7E3600"
380 C$(3)="007C7C387C7C3810"
390 C$(4)="0000D8FCFEFC800"
400 FOR D=1 TO 9
410 FOR DE=1 TO 4
420 READ BC(D,DE)
430 NEXT DE
440 NEXT D
450 RESTORE
460 FOR D=1 TO 4
470 CALL CHAR(127+D,C$(D))
480 CALL CHAR(135+D,C$(D))
490 NEXT D
500 FOR D=2 TO 12 STEP 2
510 CALL HCHAR(D,D+3,124)
520 CALL HCHAR(D,D+4,121,25-
(D*2))
530 CALL HCHAR(26-D,D+3,125)
540 CALL HCHAR(26-D,D+4,121,
25-(D*2))
550 CALL VCHAR(D+1,D+3,120,2
5-(D*2))
560 CALL HCHAR(D,29-D,122)
570 CALL VCHAR(D+1,29-D,120,
25-(D*2))
580 CALL VCHAR(26-D,29-D,123
)
590 CALL HCHAR(D+1,D+4,126,2
5-(D*2))
600 CALL VCHAR(D+1,D+4,126,2
5-(D*2))
610 CALL HCHAR(25-D,D+4,126,
25-(D*2))
620 CALL VCHAR(D+1,28-D,126,
25-(D*2))
630 NEXT D
640 FOR D=15 TO 17
650 CALL VCHAR(3,D,32,9)
660 CALL VCHAR(15,D,32,9)
670 NEXT D
680 FOR D=12 TO 14
690 CALL HCHAR(D,6,32,9)
700 CALL HCHAR(D,18,32,9)
710 NEXT D
720 CALL HCHAR(13,16,32)
730 CALL COLOR(12,8,2)
740 CALL COLOR(13,16,2)
750 CALL COLOR(14,10,2)
760 CALL COLOR(3,16,2)
770 CALL COLOR(4,16,2)
780 DIR=3
790 DOT=0
800 LT=LT+1
810 IF LT<10 THEN 830
820 LT=1
830 DC=BC(LT,3)
840 LC=BC(LT,4)
850 CALL HCHAR(13,16,LT+48)
860 RPC=BC(LT,1)
870 CPC=BC(LT,2)
880 ON DC GOSUB 1390,1420,14
50,1480
890 RMC=X1
900 CMC=X2
910 RP=23
920 LEV=5
930 OD=32
940 CP=17
950 DIR=DIR+1
960 ON DIR GOSUB 1390,1420,1
450,1480,1510
970 RM=X1
980 CM=X2
990 CALL GCHAR(RP+RM,CP+CM,F
R)
1000 IF FR=32 THEN 1070
1010 IF FR=135+DC THEN 2330
1020 IF FR<>126 THEN 950
1030 DOT=DOT+1
1040 SCR=SCR+5
1050 CALL SOUND(-10,330,9)
1060 IF DOT=180 THEN 1830
1070 CALL HCHAR(RP,CP,32)
1080 RP=RP+RM
1090 CP=CP+CM
1100 CALL HCHAR(RP,CP,DIR+12
7)
1110 CALL GCHAR(RPC+RMC,CPC+
CMC,FR)
1120 ND=32
1130 IF FR=127+DIR THEN 2330
1140 IF-FR=32 THEN 1170
1150 IF FR<>126 THEN 1250
1160 ND=126
1170 CALL HCHAR(RPC,CPC,OD)
1180 OD=ND
1190 RPC=RPC+RMC
1200 CPC=CPC+CMC
1210 CALL HCHAR(RPC,CPC,135+
DC)
1220 IF RPC=13 THEN 2030
1230 IF CPC=16 THEN 2180
1240 GOTO 1320
1250 DC=DC-1
1260 IF DC>0 THEN 1280
1270 DC=4
1280 ON DC GOSUB 1390,1420,1
450,1480
1290 RMC=X1
1300 CMC=X2
1310 GOTO 1110
1320 IF CM<>0 THEN 1360
1330 IF RP=13 THEN 1530
1340 IF RP=13-RM THEN 1530
1350 GOTO 990
1360 IF CP=16 THEN 1680
1370 IF CP=16-CM THEN 1680
1380 GOTO 990

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|                                   |                                          |                                 |                                     |
|-----------------------------------|------------------------------------------|---------------------------------|-------------------------------------|
| 1390 X1=-1                        | 1720 IF RP=25 THEN 1810                  | 2030 IF LEV=LC THEN 1320        | 2350 CALL HCHAR(RPC+RMC,CPC+CMC,32) |
| 1400 X2=0                         | 1730 CALL HCHAR(RP+(Y/2),CP,32)          | 2040 IF CPC>16 THEN 2070        | 2360 CALL HCHAR(RPC,CPC,32)         |
| 1410 RETURN                       | 1740 IF Y=0 THEN 1760                    | 2050 CTR=-2                     | 2370 CALL SOUND(-1000,-7,0)         |
| 1420 X1=0                         | 1750 CALL SOUND(-40,220,3,22,2,3)        | 2060 GOTO 2080                  | 2380 FOR D=1 TO 6                   |
| 1430 X2=-1                        | 1760 IF RP>13 THEN 1790                  | 2070 CTR=2                      | 2390 FOR DE=1 TO 4                  |
| 1440 RETURN                       | 1770 LEV=LEV+Y/4                         | 2080 CALL SOUND(-40,770,4)      | 2400 CALL HCHAR(RP,CP,127+DE)       |
| 1450 X1=1                         | 1780 GOTO 1800                           | 2090 IF LC<LEV THEN 2140        | 2410 NEXT DE                        |
| 1460 X2=0                         | 1790 LEV=LEV-Y/4                         | 2100 LC=LC-1                    | 2420 NEXT D                         |
| 1470 RETURN                       | 1800 GOTO 1080                           | 2110 CPC=CPC-CTR                | 2430 CALL HCHAR(RP,CP,32)           |
| 1480 X1=0                         | 1810 RP=RP+Y/2                           | 2120 CALL HCHAR(RPC,CPC+CTR,32) | 2440 CALL CLEAR                     |
| 1490 X2=1                         | 1820 GOTO 990                            | 2130 GOTO 1320                  | 2450 PRINT " C R A S H              |
| 1500 RETURN                       | 1830 CALL CLEAR                          | 2140 CPC=CPC+CTR                | 2460 PRINT : : : : : :              |
| 1510 DIR=1                        | 1840 CALL SOUND(1000,262,0,3,30,0,392,0) | 2150 LC=LC+1                    | 2470 PRINT " YOUR SCORE I           |
| 1520 GOTO 1390                    | 1850 CALL COLOR(3,2,2)                   | 2160 CALL HCHAR(RPC,CPC-CTR,32) | 2480 PRINT : : : : : :              |
| 1530 CALL JOYST(1,X,Y)            | 1860 CALL COLOR(4,2,2)                   | 2170 GOTO 1320                  | 2490 PRINT "PRESS ANY KEY TO        |
| 1540 CP=CP+X/2                    | 1870 PRINT " YOU DID IT!!"               | 2180 IF LEV=LC THEN 1320        | 2500 FOR D=1 TO 14                  |
| 1550 IF CP=16 THEN 1660           | 1880 PRINT : : : : : " L                 | 2190 IF RPC>13 THEN 2220        | 2510 CALL COLOR(D,16,2)             |
| 1560 IF CP=4 THEN 1660            | 1890 PRINT : : : : :                     | 2200 CTR=-2                     | 2520 NEXT D                         |
| 1570 IF CP=28 THEN 1660           | 1900 PRINT " PRESS ANY KEY T             | 2210 GOTO 2230                  | 2530 CALL KEY(0,K,S)                |
| 1580 CALL HCHAR(RP,CP-(X/2),32)   | 1910 DOT=0                               | 2220 CTR=2                      | 2540 IF S=0 THEN 2530               |
| 1590 IF X=0 THEN 1610             | 1920 FOR D=1 TO 14                       | 2230 CALL SOUND(-40,770,4)      | 2550 CALL CLEAR                     |
| 1600 CALL SOUND(-40,220,3,22,2,3) | 1930 CALL COLOR(D,16,2)                  | 2240 IF LC<LEV THEN 2290        | 2560 FOR D=1 TO 14                  |
| 1610 IF CP>16 THEN 1640           | 1940 NEXT D                              | 2250 LC=LC-1                    | 2570 CALL COLOR(D,2,2)              |
| 1620 LEV=LEV-X/4                  | 1950 CALL KEY(0,K,S)                     | 2260 RPC=RPC-CTR                | 2580 NEXT D                         |
| 1630 GOTO 1650                    | 1960 IF S=0 THEN 1950                    | 2270 CALL HCHAR(RPC+CTR,CPC,32) | 2590 GOTO 120                       |
| 1640 LEV=LEV+X/4                  | 1970 CALL CLEAR                          | 2280 GOTO 1320                  | 2600 DATA 23,16,2,5,15,6,1,5        |
| 1650 GOTO 1080                    | 1980 FOR D=1 TO 14                       | 2290 RPC=RPC+CTR                | 2610 DATA 21,15,2,4,15,15,2,        |
| 1660 CP=CP-X/2                    | 1990 CALL COLOR(D,2,2)                   | 2300 LC=LC+1                    | 2620 DATA 9,17,4,2,14,22,3,3        |
| 1670 GOTO 990                     | 2000 NEXT D                              | 2310 CALL HCHAR(RPC-CTR,CPC,32) |                                     |
| 1680 CALL JOYST(1,X,Y)            | 2010 SCR=SCR+(100*LT)                    | 2320 GOTO 1320                  |                                     |
| 1690 RP=RP-Y/2                    | 2020 GOTO 500                            | 2330 CALL HCHAR(RP,CP,32)       |                                     |
| 1700 IF RP=13 THEN 1810           |                                          | 2340 CALL HCHAR(RP+RM,CP+CM,32) |                                     |
| 1710 IF RP=1 THEN 1810            |                                          |                                 |                                     |

|                                                                    |                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CRAB CANON<br>+++++<br>by: J.S.Bach<br><br>Programmed by: Jim Beck | 9 PRINT :::<br>10 PRINT TAB(5);"Program by<br>Jim Beck"<br>11 PRINT :::::<br>12 FOR D=1 TO 13<br>13 CALL COLOR(D,2,16)<br>14 NEXT D<br>15 CALL COLOR(14,5,5)<br>16 CALL HCHAR(1,1,136,32)<br>17 CALL HCHAR(24,1,136,32)<br>18 CALL VCHAR(2,1,136,22)<br>19 CALL VCHAR(2,32,136,22)<br>20 DIM A(144,2)<br>21 FOR D=1 TO 144 | 22 READ A(D,1)<br>23 A(145-D,2)=A(D,1)<br>24 NEXT D<br>25 FOR DE=1 TO 2<br>26 FOR D=1 TO 144<br>27 X=(D/10)+1<br>28 CALL COLOR(14,X,X)<br>29 CALL SOUND(-200,A(D,1)*2,<br>0,A(D,2)*2,0)<br>30 NEXT D<br>31 NEXT DE<br>32 CALL CLEAR<br>33 END<br>34 DATA 131,131,131,131,156,<br>156,156,156,196,196,196,<br>208,208,208,208 | 35 DATA 123,123,123,123,1500<br>0,15000,196,196,196,196,185,<br>185,185,185,175,175<br>36 DATA 175,175,165,165,165,<br>165,156,156,156,156,147,147,<br>139,139,131,131<br>37 DATA 123,123,98,98,131,13<br>1,175,175,156,156,156,156,14<br>7,147,147,147<br>38 DATA 131,131,131,131,156,<br>156,156,156,196,175,196,262,<br>196,156,147,156,175,196,220,<br>247,262,156,175,196<br>39 DATA 208,147,156,175,196,<br>175,156,147,156,175,196,208,<br>233,208,196,175,196<br>40 DATA 208,233,262,277,233,<br>208,196,220,247,262,294,311,<br>262,247,220,247,262,294,311,<br>349,294,196,294,262,294 |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

NOTES TO CRAB CANON

by: Jim Beck

An interesting feature of Bach's Crab Canon is that the harmony is exactly the same as the melody. But, it is played backwards! Listen to the background notes to here it. Saved a lot of programming; only half as many statements required! See if you can do as well as Bach.



YOU ARE REQUESTED TO FILL IN THIS QUESTIONNAIRE IN ORDER FOR US TO ARRANGE OUR 1988 SCHEDULE.

WHICH SYSTEM DO YOU USE: (please circle or check each item).

99/4 99/4A CC-40

WHICH PERIPHERALS DO YOU OWN:

- Cassette recorder(s). 1/2 Y/N.
- Disk controller & Drives. 1/2/3 or none. Y/N.
- Double/Single or Combination.
- Peripheral Expansion Box. Y/N.
- RS232 Interface. Y/N.
- 32k/128k/512. Memory card. Y/N.
- Ram Disk card./Horizon/myark/other. Y/N.
- Double/Single.
- MONITOR: Y/N.
- Television. Y/N.
- Colour. Y/N.
- Black/White. Y/N.
- Monochrome. Y/N.
- Speech synthesizer. Y/N.
- Joysticks. Y/N.
- Printer. (Specify make) Y/N.
- Modem. (300/1200 Baud). Y/N.
- Mini-Memory. Y/N.
- Gramcracker/Karte. Y/N.
- Clock card and Spooler. Y/N.

It would also be an advantage for your Executive to know how you assess yourself. (A) Experienced. (B) Good. or (C) Interested. in the following:

|                      | Own and use. | Own and don't use. |
|----------------------|--------------|--------------------|
| Extended-Basic.      | A/B/C.       | Y/N.               |
| Microsoft Multiplan. | A/B/C.       | Y/N.               |
| TI-Writer.           | A/B/C.       | Y/N.               |
| Logo.                | A/B/C.       | Y/N.               |
| E/A/Mini-memory.     | A/B/C.       | Y/N.               |
| Forth.               | A/B/C.       | Y/N.               |
| 'C'.                 | A/B/C.       | Y/N.               |

Perhaps you would like to add any constructive comments:

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This has been written using Microsoft Multiplan. Printed through TI-Writer. THANKYOU. JOHN.

Please print your name here: .....

## ARE YOU VULNERABLE?

What parts of your system are irreplaceable? The machine and software immediately come to mind, but these can usually be replaced; however, your data can be lost - possibly forever! The only insurance against a catastrophic data loss is **BACKUP.**

## HISTORY

Not so long ago, micro data were much less vulnerable because of floppy storage, thus limiting the volume of data loss. But the spread of hard disks capable of 3 digit megabyte storage has increased the risk of gigantic losses of data. Local-area networks raise the stakes even further.

When it comes to micros, authority is decentralized, and data backup usually falls between the cracks, which was traditionally administrated and performed by the data centres. The present trend for data centers in organizations is to inform and advise end users; their responsibility is to take care of their own business, including backup.

### IT IS EASY....

to recognize the need for backup but choosing the proper methods can be confusing. You must consider tradeoffs between speed, cost, convenience, media, etc. No one method is perfect; it depends on your applications and your desires.

### IT IS ALSO EASY....

to be pressured (by your workload) into stretching the time frames between backups. **BEWARE!**

Usually, floppy disks are used for backup. This is fine if your computer uses only floppies, but few people are willing to buy, format, and spend the time backing up a hard disk onto 30+ floppies. Using another hard disk is fast and convenient, but expensive, and tape is making a strong come-back for backup applications in the form of cartridge or cassette.

Regardless of which method you choose, the day will come (as per Murphy's Law) when you'll be glad you have your spreadsheet budget or your database inventory systems, or whatever, saved when you get ZAPPED.

THIS ARTICLE IS A SUMMARY OF A SELECTION  
FROM COMPUTER DECISIONS, February 26, 1985.

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