

**CHANGE OF DETAILS**

Name \_\_\_\_\_

New Address \_\_\_\_\_

New Post Code \_\_\_\_\_

New e-mail \_\_\_\_\_

Please return to Richard Twyning.

AND FINALLY .....

See you at the TREF.

Get those articles in.....

# TI\*MES

ISSUE 75 Summer 2002

**Texas Instruments  
TI99/4a TREF**



**2002**

**AT**



**THE BEECHES  
HOTEL & LEISURE CLUB  
SEPTEMBER 13TH 14 TH AND 15TH  
JOIN IN THE  
FUN FOR A TI INTERNATIONAL  
COMPUTER FAIR**

Position	Name	Address	Phone details
<b>Chairman &amp; BBS &amp; web page</b>	<b>Trevor Stevens</b>	<b>249 Southwell Road East, Rainworth, Notts. NG21 0BN</b>	<b>Phone: 01623 406133 FAX: 01623 406134</b>
<b>General Secretary &amp; Treasurer</b>	<b>Richard Twynning</b>	<b>41 Vera Crescent, Rainworth, Notts. NG21 0EU</b>	<b>Phone/SMS: 07767 445658 FAX: 07767 449009</b>
<b>Module and Cassette Librarian</b>	<b>Francesco Lama</b>	<b>48 Mayfair Road, Cowley, Oxford. OX4 3SR</b>	<b>Phone: 01865 435856</b>
<b>Custodian of TIUG UK Disk Library</b>	<b>Richard Speed</b>	<b>213 Comptons Lane, Horsham, West Sussex. RH13 6BZ</b>	<b>Phone: 01403 242853</b>
<b>TI*MES Editor</b>	<b>Paul Saunders</b>	<b>24 Tyler Road Hazlemere High Wycombe BUCKS HP15 7NS</b>	<b>Phone 01494 814235</b>

All items in this magazine are the views of the authors. Any item which is submitted may be edited to fit the magazine, however we do try to insure the author's message is transposed.

The EDITOR cannot be held responsible or financial loss from any article produced.

In line with the new policy, the TI\*MES will now be mostly of a text nature, which gives you a more compressed format.

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### Members on the Internet

Alan Bray: alan@bricktop.demon.co.uk  
 Derek Hayward: derekrhayward@supanet.com  
 Francesco Lama: lama@atm.ox.ac.uk  
 George Michelle: 100016.1304@compuserve.com  
 Mike Poskitt: mikeposkitt@netscapeonline.co.uk  
 Alan Rutherford: a\_rutherford@bigfoot.com  
 Paul Saunders: psanders@yastek.com  
 Stephen Shaw: stephen.shaw@btinternet.com  
 Gary Smith: gary.smith@tropian.com  
 Richard Speed: richardspeed@anytimenow.com  
 Trevor Stevens: trev@mansfield-notts.co.uk  
 Richard Twynning: richardt@007.ukmaster.com  
 Mark Wills: mark@bluesguitar.softnet.co.uk

## The Editor Writes

We are rapidly approaching the TREFF and I look forward to meeting all the Tiers again. I am unsure if I will be attending all the days but I will be there for at least one..

Most of this magazine is filled with information on the TREFF thanks to Richard. We also have an article which shows what you can achieve in just 2 lines of code.

Many years ago I use to be quite good at basic and wrote several programs. At this time at college we learnt PASCAL and COBOL but did do some BASIC. At university we learnt C and PASCAL. I joined the real working world just as Visual Basic was the main language. Knowing BASIC from my computing days really helped. However this BASIC did not have line numbers and was event driven.. Basic could also be used as a language to Excel and WORD. Then the Web took over and ASP has become the main language in industry along with Java. I was on a client visit recently to a web developers. They showed me the latest web development product from the states. They are a beta test site for it. To my surprise it was BASIC with line numbers. It uses similar syntax to TI extended basic and multiple statements can be putt on one line by using the colon as a seperator. It seems that like fashion computer languages also seem to rotate.

I was hoping too try and get something done on my TI but I am still to busy. Recently there has been a lot of insolvencies and I have a few things to sell. I have put a small for sale box opposite. If you are interested in any of then items please get in touch.

We also had a sad e-mail. Mr James F Murta is no longer able to enjoy the magazine and his daughter e-mailed us and asked for him to be removed from our list. She said that he had enjoyed the TIMES in the past.

It seems like the membership is ever dwindling. I am also a member of another club with the same problem. Several years ago I bought an XR4i. I bought the car mainly as a hobby car and to take advantage of the tax opportunities of larger engined cars at the time. I bought it from someone who was fed up with it being broken into. I got a real bargain only £800. When the car developed gearbox and engine problems I joined the XR owners club. At this stage it had about 30,000 members. I mainly joined for the technical helpline and the cheaper parts. I always intended to sell the car but I never did as I enjoyed driving it. I also thought it will become a collectors item in the future as not many XR4is were made. Nowadays I am still a member of the club and the membership is now down to under 1000. The magazine has no new articles and it reprints articles from earlier issues. The pages in the magazine has also been reduced. Sound familiar.

If we intend to keep the TIMES going for years to come we need to somehow find new membership. Tis now fetch a premium on Ebay. I can remember someone suggesting that we mail the purchasers to see if they would like to join.

Another part of being in a club is the social events. I would certainly like to meet more of the group. The XR club has regional meets in pubs. These are just nights out for a chat.

Does anyone think this would work with TIERS.

Anyway enough of my rambling. On with the magazine.

## FOR SALE

Panasonic Mini DV 3.00. 3 Pack 8.70

JVC Mini DV 3.00

Sony Mini DV 3.10

Fuji Mini DV 3.20

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## Richard Twynning Summer 2002 Article.

Dear TI'ers,

Firstly apologies that this article didn't appear in the previous issue of TI\*MES! I sent it via a WAP account on Vizzavi, and for some reason Paul didn't receive it. One or two e-mails went missing and I've lost faith in Vizzavi!

I'd like to report on the events of the AGM on the 27th of April this year. Trevor kindly drove down to Chessington and we set off at 7 ish!

I think it was around 9:45 when we arrived and we were the first there. We were VERY impressed with the room we were given at Sunrise Software, and another big thank you on behalf of the group to Derek Buchanan for allowing the use of the room for the day.

In attendance was myself, and Trevor, and of course Derek Buchanan. During the day a FEW more drifted in! In addition we had Berry Harmsen from Amsterdam and John Murphy from Poole who both put a lot of people to shame with their attendance. Also we had Francesco Lama, Richard Speed and Paul Saunders.

I will talk about other activities at the AGM later, but first, the actual meeting itself.

Trevor opened the meeting and gave a welcome message to those who attended. Unfortunately, as many of us do, Trevor began by saying it has been a quiet year again. Also, the group numbers are also getting smaller, and this would give us some concerning points to discuss later.

Next we carried out the group re-elections...

The treasury was causing some concern and it has been decided to merge the Treasury, Membership and General Secretary into one position. I have volunteered to handle this and have even already created spreadsheets on my phone to keep track of the accounts. If only I had accounts to keep track of!

Trevor Stevens will continue in the role of chairman. Francesco is still willing to continue as module librarian. In the past year he's only had three module requests.

Paul Saunders is willing to carry on as magazine editor, and Richard Speed is still willing to carry on with the disk library. Richard has currently worn out around four disk drives transferring floppies onto the PC!

The reason for the merge in the treasury and membership is because Alan Rutherford has gone quiet and caused us a few problems!

For this reason, there is no financial report of the group funds available for this general meeting. We're taking everything out of Alan's hands, but he still controls the groups purse strings. Some members have already sent cheques to Alan, but he's been sitting on them for months and not cashed them.

Trevor said that he and I would write a letter out to everybody to explain the situation and bear with us until we get things back on track again. Currently we have only the following officially paid up members, Graham Steward, Eamon Doran, Kenneth Hughes, and William Strong. I have no information from Alan Rutherford on the state of the membership, and I don't think he knows himself the true state of it.

I think I'm going to start a telephone campaign myself against Alan to persuade him to send us the treasury stuff.

Trevor estimated that there must be currently around £1700, in the group funds, but out of this Trevor needs two years of BBS payments that he's not received from Alan!

Moving on to discuss the TI\*MES magazine and Trevor informed us that Ross Bennett has finally sold his business and therefore cannot copy TI\*MES. Trevor can get reams of paper at trade price, but Paul Saunders said he had clients who could do cheap printing for us, and he was going to obtain prices. He also has a half share in a photocopier at a printers that he can use any time! He thought that the price from his clients might still be expensive.

Berry Harmsen said the problem was what to put in the mag because they struggle to obtain fresh content in Holland.

Berry showed an example of the magazine that they have printed in Holland by a "copy shop". They take in the disk that contains the "Publisher" or "Word" file of the issue, and the copy shop prints it. As Berry demonstrated, the advantage of using a professional printer like this is the fact the quality of photos his magazine contains cannot be re-created with a photocopier.

We discussed membership again and the fact of the letters that Alan Rutherford is sitting on. David Caine has gone missing and has possibly sent a change of address to Rutherford, but this could very well be one of the letters that is in Rutherford's pile. Trevor said he would try and use his police detective skills to try and locate David again.

The 2002 Treff.

The Germans are not happy!

We moved the date in October to September thinking we were making them happy, but it's seemed to have created more uproar!

The problem is that they are wanting to bring their families and there is a law in Germany that they will be fined if they take their children out of school. Oliver Arnold has put a vote to his members and got 19 replies: 13 would not come to the TI-Faire, 2 members only may come on the weekend of 6th September (Becker, Hartwig), 4 members may come on either date (Arnold, Hanke, Zeddies, Betzl)

I can report today that Alan Rutherford has sent all the bank account stuff to Trevor, and I've been to the Halifax and opened a new Treasurers Account. Now we just need to transfer the money into the new account!

If we have the money available to pay for the room at the hotel then it will look better if we want to re-book the date. I'll ask you all to not take the date of the second weekend in September for granted if it's still possible to change it.

We discussed what we could do at the Treff..

We decided that there could be another presentation of Michael Becker's cards. Francesco says he has most of Michael Becker's cards so Michael could use those for demonstrating rather than have to bring a lot of equipment over. They would only need to bring software.

We also have decided to have an emulator theme for the Treff, demonstrating all the various 99/4A emulators that are available. I'm not sure if Mike Wright will visit to personally demonstrate PC99 as we heard that he had not been well recently, but Richard Speed was going to try and contact him.

In the development of PC99, they're trying to get away from DOS with a new version of PC99 because of the memory restrictions in DOS.

There is also a new emulator called Classic99 which is freely downloadable. We are hoping to have a demonstration of all the popular ones available at the Treff.

We discussed the shortage of 5.25" disks and the possibility of declaring a new TI disk format to use a PC floppy disk drive as a TI drive on a standard TI controller. All floppy drives use a standard Shugghart interface (named after Al Shugghart who developed it. He also founded Seagate!) so it is possible to plug a modern PC drive onto a standard unmodified TI controller. It will, however, only step the first 40 tracks, so essentially a lot of the capacity of the drive is wasted, but it would end forever the problem of trying to find old 5.25" drives and disks!

The group accounts are currently at £90 until I can officially add the approx £1700 from Alan Rutherford.

Next we discussed the BBS...

Trevor was concerned about it's low usage, considering that it is quite an expensive resource. We discussed replacing it with the internet, but this would exclude a lot of TI-only people from accessing the information.

The fans in the BBS PC have required replacing, but Trevor has salvaged these out of old PC's that he's received in part exchange for newer systems. The advantages of owning a computer shop!

We also discussed the use of my Nokia Communicator as another option to run the BBS. It now has a much better operating system (EPOC) and could simply respond to incoming calls on the SIM's Data Line. This would mean we wouldn't have the expense of an extra phone line, but of course calls would be more expensive because it's a mobile phone. If anybody has a Vodafone connection and a mobile with a Fax modem, then they could use that to call and it would be included in their free minutes! I have been corresponding with a fellow 9210 owner, and he also has a passion for BBS software and has collected BBS software for various popular home computers. He's passionate about getting a BBS running on the 9210. As some people may know I work for a company which is heavily involved in the mobile phone industry. EPOC is THE major operating system for mobile devices and our company has dabbled with it. It was a very complicated project to develop an MP3 player for the PSION Revo. Eric Yomi that was working on it got 75% through it before being pulled to work on a more important outsourcing project.

He's been given fresh enthusiasm by the new version of EPOC and the NOKIA 9210 and he wants a spare time project to help him get his teeth back into EPOC. On the face of it a BBS seems very complex, but it's just a simple comms project to Eric! I had started working on a detailed specification and I've passed it on to the other chap that's interested and he's padding it out for me

and adding more technical bits and I'm throwing in some more functionality requirements. I'll keep you posted.

We voted to keep the BBS running at least until the Nottingham Treff and then review the situation again.

We discussed technical support and who might fix broken hardware. Ross Bennett has fixed loads of hardware for group members, one of his best customers being John Murphy! Now though he's floating around on his barge (sorry "Narrow Boat"! ) and probably doesn't want to work on another console. He's desperately trying to get rid of hardware he doesn't have room for, so if there's anything you're after, PLEASE CONTACT ROSS to see if he has it. I know he'll be bringing a van load of stuff to the Treff, and ideally he won't be driving back with it. What other members don't take off of him he will throw away, so if anybody has ANY space to take anything just to even store it, then please help him out.

We discussed the possibility that Gary Smith might be able to fix the odd console, but I don't want to vote him into something before I've officially asked him.

Myarc stuff has to be sent to the States to be repaired. Richard Bell is currently repairing it, and all we have for him is an e-mail address: swim4home@AOL.com.

We do currently have quite a few spare parts. I have a box of console power supplies and TV modulators.

That was it for the discussion, and Trevor closed the meeting for another year.

The turnout wasn't what we hoped for at all, but for me it was a very productive day.

I was a bit sceptical the night before when I dropped my equipment off at Trevor's. I didn't think I was going to get the SCSI card

working properly, and really I didn't want the stress of taking all the PEB and monitor with me and my big power supply, and my set of floppy drives, and my cardboard box that contains my spare GENEVE and my Myarc Hard and Floppy Disk Controller etc. etc. etc.

I also didn't have a proper version of MDOS that worked with the SCSI card, but I didn't want to disappoint Francesco after all his efforts transferring my data to my drive.

Francesco brought me a copy of SCSI friendly MDOS and at first I was getting one or two errors which was worrying, but Francesco advised me that the Rave Speech adapter was the problem and had to go!

This did the trick and I was able to boot from my floppy. Once it was booted I had full access of the SCSI drive!  
It was simply "A Result!"

The most impressive was when I loaded Myart in MDOS and loaded one of the old pictures I'd drawn with it in 1989!

Many thanks again to Francesco to doing the transferring for me.

Well, I'd better close my article there and get it to Paul to edit into the mag. It's already a week overdue.  
Apologies about the limbo state of the Treff date. We'll send out a special note confirming the date.

All for now.

Best wishes to all TI'ers.

P.S. I'll provide Paul with a front cover for the next issue if I don't have time this time!

Richard Twynning  
Autumn 2002 Article.

Dear TI'ers,

An update on my previous article, which you should read in this magazine. At the time of writing we're only 40 days away from the Treff. I will first give a big thank you to Paul Saunders for putting the magazine together again, and thank you to Trevor for putting together a front cover. I'm really looking forward to the Treff, but I'm worried in case it's not a success this time around. We've had quite a few problems with the dates of the Treff. It was changed a couple of times before we arrived at the 13th of September, which has still caused a deal of annoyance to German members. Apologies to them and particularly those who cannot attend. This is an international event and only the second time we're hosting it in the UK. Many Germans have complained that it clashes with school time and they are unable to attend because their children are in school. I've not been able to attend a Treff in mainland Europe since 1999 because we couldn't afford to travel. I won't feel guilty over the problems, because it does give UK members chance to take part in an international event.

I said that Texas Instruments had offered to send someone to do a talk at the Treff. Unfortunately I received an e-mail to say that the change in the date has caused a clash and they're no longer able to send someone.

Here's a copy of the e-mail...

Hi Richard,

We spoke some time ago about the TI Treff and about TI UK presenting some material.



Unfortunately I have just received your fax which indicates a change of the original date from Oct to September.

This date clashes with another function which we have already given our commitment to and therefore we will be unable to re-schedule to accomodate your change in dates.

Apologies for this.

If there is any other subject you wish to discuss please do not hesitate to contact me.

Regards,

Neville Bulsara  
Texas Instruments Limited

I'm sure there'll be lots of other things to see at the Treff. We're planning to look at some TI emulators and do some demos. Oliver Arnold from Germany is definitely planning to demonstrate new hardware.

I would like to welcome David Caine back to the group! He went missing for a few months as he had moved and possibly sent his new details to Alan Rutherford! He missed the AGM, but he's surfaced again and I've added his new details to the group membership list.

In case you want to attend the Treff but haven't yet booked, or don't know the hotel details, it's...

The Beeches Hotel & Leisure Club,

Website: [www.thebeecheshotel.co.uk](http://www.thebeecheshotel.co.uk)

The Beeches Hotel & Leisure Club,

Wilford Lane,  
West Bridgford,  
Nottingham,  
NG2 7RN.  
Telephone: --44 (0) 115 9818753  
Fax: +44 (0) 115 9455838

Special Weekend Room Rates (Friday, Saturday & Bank Holidays)  
per night  
Standard Single Room £38.00  
Standard Double Room / Twin Room (Single Occupancy) £38.00  
Double Occupancy £55.00

Also, in case "there's no room at the inn!" I've got a list of other hotels in the vicinity of The Beeches

---

Rushcliffe Guest House,  
104 Radcliffe Road,  
West Bridgford,  
Nottingham,  
NG2 5HG  
Phone: +44 115 9811413

---

Talbot House Hotel  
18-20 Bridgford Rd,  
West Bridgford,  
Nottingham,  
NG2 6AB  
Phone +44 870 2407060

---

Windsor Lodge Hotel,

116 Radcliffe Road,  
West Bridgford,  
Nottingham,  
NG2 5HG  
Phone: +44 115 9813773

---

Croft Hotel,  
George Road,  
West Bridgford,  
Nottingham,  
NG2 7QG  
Phone: +44 115 9819285

---

Balmoral Hotel  
55-57 Loughborough Road, West Bridgford, NOTTINGHAM,  
NG2 7LATel: 0115 955  
2992 Fax: 0115 955 2991Email: [balmorallhotel55@hotmail.com](mailto:balmorallhotel55@hotmail.com)

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#### Room Price Guide

Single room, standard rate from 27.50 to 39.50 GBP. Double room,  
standard  
rate from 45.00 to 49.50 GBP.

Note: Prices for guidance only. Please check when booking for current rates.

---

Clarks Guest House  
77 Wilford Lane,  
West Bridgford,  
Nottingham,

---

NG2 7RN  
Phone: +44 115 9815054

---

Rufford Hotel  
53 Melton Road,  
West Bridgford,  
NOTTINGHAM,  
NG2 7NE  
Phone: +44 115 981 4202  
Fax: +44 115 945 5801  
Email: [ruffordhotel@hotmail.com](mailto:ruffordhotel@hotmail.com)

Single room, standard rate from 35.00 to 45.00 GBP. Double room,  
standard  
rate from 45.00 to 55.00 GBP.

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Swans Hotel  
84-90 Radcliffe Road,  
West Bridgford,  
NOTTINGHAM,  
NG2 5HH  
Phone: +44 115 981 4042  
Fax: +44 115 945 5745  
Email: [enquiries@swanshotel.co.uk](mailto:enquiries@swanshotel.co.uk)

#### Room Price Guide

Single room, standard rate up to 55.00 GBP. Double room, standard  
rate up to  
65.00 GBP.

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The County Hotel  
6 Millicent Road

West Bridgford  
Nottingham  
NG2 7LD  
Phone: +44 845 1110169

The Gallery Hotel  
8-10 Radcliffe Road,  
West Bridgford,  
Nottingham,  
NG2 5FW  
Phone: +44 115 9813651

I'd better close there as I'm rushing to finish my article at the last minute as usual! I need to upload it to Paul Saunders as he's putting the magazine together.

I hope to see a good turnout for the Treff, and I hope it's as successful as it was in 1998.

All for now.

Kind regards  
from

Richard Twynning

Dear Tiers,

The following GB/2Liners are the result of a personal challenge to write as much coding as possible in just two lines of Extended Basic, and have a fully functioning utility.

All you have to do is type in these routines EXACTLY as they are printed. Please be aware that there is a special key stroke that will allow you to type code beyond the normal four screen line limit. However I am sorry to admit that I am unable to recall what it is at this time. After all, these routines were written some time ago.

Closing Routine for all GB/2Liners:

```
100 CALL SCREEN(8):: FOR I=1 TO 12 :: CALL COLOR  
(1,2,1):: NEXT I :: PRINT : : "WHICH ONE?": : "1. LOAD  
MENU": : "2. QUIT" :: ON ERROR 110 :: CLOSE  
#2 :: !"FINI"(C)1989 G.W.BERNASEK  
110 CALL KEY(0,K,S):: IF S=0 THEN 110 ELSE IF K=49  
THEN RUN "DSK1.LOAD" ELSE IF K<>50 THEN 110  
ELSE CALL CLEAR :: END
```

This routine will place a message in the center of the screen:

```
100 CALL CLEAR :: DEF C=INT(40-(LEN(MSG$)/2)):: IN-  
PUT "ENTER A MESSAGE-":MSG$ :: !"AUTO-  
CENTERING ROUTINE" (C)1989 G.W.BERNASEK  
110 OPEN #1:"PIO.LM="&STR$(C):: PRINT #1:MSG$ ::  
CLOSE #1 :: RUN "DSK1.FINI"
```

This routine will set left margins at any desired distance:

```
100 CALL CLEAR :: INPUT "ENTER A LEFT MARGIN  
NUMBER-":C :: !"A VARIABLE LEFT MARGIN SET-  
TER" (C)1989 G.W.BERNASEK  
110 OPEN #1:"PIO.LM="&STR$(C):: PRINT #1:C :: CLOSE
```

```
# :: RUN "DSK1.FINI"
```

This routine calls Lotto numbers:

```
100 CALL CLEAR :: INPUT "ENTER:0-SCREEN or 1-PRINTER  
":P :: CALL CLEAR ::  
DIM N(45) :: OPEN #1:"PIO" :: PRINT #P:"TI-LOTTO": : : :  
J=1 :: RANDOMIZE :1 !"MICROLOTTO" (C)1989 G.W.  
BERNASEK  
110 D=INT(RND#44)+1 :: IF D=N(D)THEN 110 ELSE N(D)  
=D :: IF J<7 THEN  
PRINT #P:N(D) ; " " ; J=J+1 :: GOTO 110 ELSE PRINT : : :  
CLOSE #1 :: RUN "DSK1.FINI"
```

This routine will sort twenty five randomly drawn numbers:

```
100 CALL CLEAR :: DIM I(25):: RANDOMIZE :: PRINT "AS  
DRAWN:" : : : FOR J=1 TO 25 :: N=INT(RND#25)+1 :: PRINT  
N;" " ; I(N)=I(N)+N :: NEXT J :: !"MINISORT"  
(C)1989 G.W.BERNASEK  
110 PRINT : ."SORTED:" : : : FOR J=1 TO 25 :: FOR K=1 TO I  
(J)/J :: PRINT J;" " ;  
: NEXT K :: NEXT J :: RUN "DSK1.FINI"
```

This routine will set Epson compatible printer commands:

```
100 CALL CLEAR :: P$=CHR$(27)&CHR$(64):: DISPLAY AT  
(.,1)."ACCEPT OR CHANGE CONTROLS:" :: DISPLAY AT  
(5,1):P$ :: !"PRINTERSET" (C)1989 G.W.BERNASEK  
110 ACCEPT AT(5,1)SIZE(-28):P$ :: OPEN #1:"PIO" :: PRINT  
#1:P$ :: CLOSE #1 ::  
RUN "DSK1.FINI"
```

This routine will reset the operational speed of complicated X-  
basic programs:

```
100 ON ERROR 110 :: OPEN #1:"CS7" :: !"RATEMAINT" (C)  
1989 G.W.BERNASEK
```

```
110 RUN "DSK1.FINI"
```

This routine rounds up randomly drawn numbers from 8 to zero  
decimal places:

```
100 CALL CLEAR :: RANDOMIZE :: N=RND#10 :: PRINT  
N,"( AS DRAWN )" ::  
FOR D=8 TO 0 STEP -1 :: R=INT(N*10^D+5)/10^D :: PRINT  
R,"(" ; D ; "PLACES )" ::  
NEXT D :: PRINT "ANOTHER ONE?Y/N" :: !"ROUNDING" (C)  
1989 G.W.BERNASEK  
110 CALL KEY(0,K,S):: IF S=0 THEN 110 ELSE IF K=78 THEN  
RUN "DSK1.FINI" ELSE 100
```

A very handy DV80 file text reading routine:

```
100 CALL CLEAR :: INPUT "PUT DV80 DISK IN DRIVE AND  
ENTER <DSK1.FILENAME>:"  
":F$ :: INPUT "TO:<0>-SCREEN or <1>-PRINTER":P :: PRINT  
"HOLD DOWN ANY KEY TO  
PRINT." : : : : OPEN #2:F$,INPUT  
110 CALL KEY(0,K,S):: IF 6=0 THEN 110 ELSE IF EOF(2)  
THEN CLOSE #2:: END :: ELSE OPEN #1:"PIO" :: LINPUT #2:  
T$ :: PRINT #P:T$ :: CLOSE #1 :: GOTO 110 ::  
!"TEXTREAD1" (C) 1989 G.W. BERNASEK
```

Same text reading routine, but uses two disk drives:

```
100 CALL CLEAR :: INPUT "PUT DV80 DISK IN  
DRIVE#2 AND ENTER <DSK2.FILENAME>:"  
":F$ :: INPUT ("TO:<0>-SCREEN or <1>-PRINTER":P :: PRINT  
"HOLD DOWN ANY KEY TO  
PRINT." : : : : OPEN #2:F$,INPUT  
110 CALL KEY(0,K,S):: IF S=0 THEN 110 ELSE IF EOF(2)  
THEN RUN "DSK1.FINI" ELSE OPEN #1:"PIO" :: LINPUT #2:T  
$ :: PRINT #P:T$ :: CLOSE #1 :: GOTO  
110 :: !"TEXTREAD2" (C)1989 G.W.BERNASEK
```

This routine runs any typed message across the bottom of the screen:

```
100 CALL CLEAR :: INPUT "PUT DATA DISK IN DRIVE ENTER <DSK1.FILENAME>:".F$ :: OPEN #2:F$,INPUT :: LIN-  
PUT #2:T$ :: CALL CLEAR :: !"TINYCRAWL1" (C)1989  
G.W.BERNASEK  
110 FOR J=28 TO 1 STEP -1 :: DISPLAY AT(24,J):SEG$(T  
$,1,29-J):: NEXT J :: FOR I=  
1 TO LEN(T$)+1 :: DISPLAY AT(24,1):SEG$(T$,I,28):: NEXT  
I :: LINPUT #2:T$ ::  
IF EOF(2)THEN CLOSE #2 :: END :: ELSE 110
```

This is the same routine, but uses two disk drives:

```
100 CALL CLEAR :: INPUT "PUT DATA DISK IN DRIVE#2  
ENTER <DSK2.FILENAME>:".F$ :: OPEN #2:F$,INPUT :: LIN-  
PUT #2:T$ :: CALL CLEAR :: !"TINYCRAWL2" (C)1989  
G.W.BERNASEK  
110 FOR J=28 TO 1 STEP -1 :: DISPLAY AT(24,J):SEG$(T  
$,1,29-J):: NEXT J ::  
FOR I=1 TO LEN(T$)+1 :: DISPLAY AT(24,1):SEG$(T$,I,28)::  
NEXT I :: LINPUT #2:T$ :: IF EOF(2)THEN RUN "DSK1.FINI"  
ELSE 110
```

This routine will dump screen characters on to a printer:

```
100 OPEN #1:"PIO" :: FOR R=1 TO 22 :: FOR C=: TO :0 ::  
CALL GCHAR(R,C,X)::  
!"TINYDUMP" (C)1989 G.W.BERNASEK  
110 X$=X$&CHR$(X):: NEXT C :: PRINT #1:X$ :: X$="" ::  
NEXT R :: CLOSE #1 :: RUN "DSK1.FINI"
```

This routine is a basic line editor (Good for typing quick notes.):

```
100 CALL CLEAR :: PRINT "1. PUT DATA DISK IN DRIVE. 2.  
EDIT OR ACCEPT EACH LINE  
3. ""E"" ADDED TO FILE NAME." :: INPUT "[DSK1.
```

```
NAME]?:F$ :: OPEN #2:F$,INPUT :: OPEN #1: F$&"E",  
OUTPUT, VARIABLE  
110 LINPUT #2:T$ :: IF EOF(2)THEN CLOSE #1 :: CLOSE #2 ::  
END :: ELSE DISPLAY  
AT(23,1):T$ :: ACCEPT AT(23,1)BEEP SIZE(-28):T$ :: PRINT  
#1:T$ :: PRINT ::  
GOTO 110 :: !"TINYEDIT1" (C)1989 G.W.BERNASEK
```

Same as above, but uses two disk drives:

```
100 CALL CLEAR :: PRINT "1. PUT DATA DISK IN  
DRIVE#2.2. EDIT OR ACCEPT EACH LINE.3. ""E"" ADDED  
TO FILE NAME." :: INPUT "[DSK2.NAME]?:F$ :: OPEN 2:F$,  
INPUT :: OPEN #1: F$&"E",OUTPUT, VARIABLE  
110 LINPUT #2:T$ :: IF EOF(2)THEN CLOSE #1 :: RUN "DSKI.  
FINI" :: ELSE DISPLAY AT (23,1):T$ :: ACCEPT AT(23,1)  
BEEP SIZE(-28):T$ :: PRINT #1:T$ :: PRINT ::  
GOTO 110 :: !"TINYEDIT2" (C)1989 G.W.BERNASEK
```

This routine will create a full disk of DV80 files:

```
100 CALL CLEAR :: PRINT "1. PUT DATA DISK IN DRIVE. 2.  
TYPE AND ENTER EACH LINE  
.. ENTER ""E"" ALONE TO EXIT." : : INPUT "[DSK1.  
NAME]?:F$ :: !"TINYFILER1" (C)1989 G.W.BERNASEK  
110 ACCEPT AT(23,1)BEEP SIZE(28):D$ :: IF (D$="E")+ (D  
$="e")THEN END ELSE OPEN #1  
:F$,APPEND,VARIABLE :: PRINT #1:D$ :: CLOSE #1 ::  
PRINT :: GOTO 110
```

More 2 liners next month.