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NEWS INFORMATION CENTER

November/December, 1982

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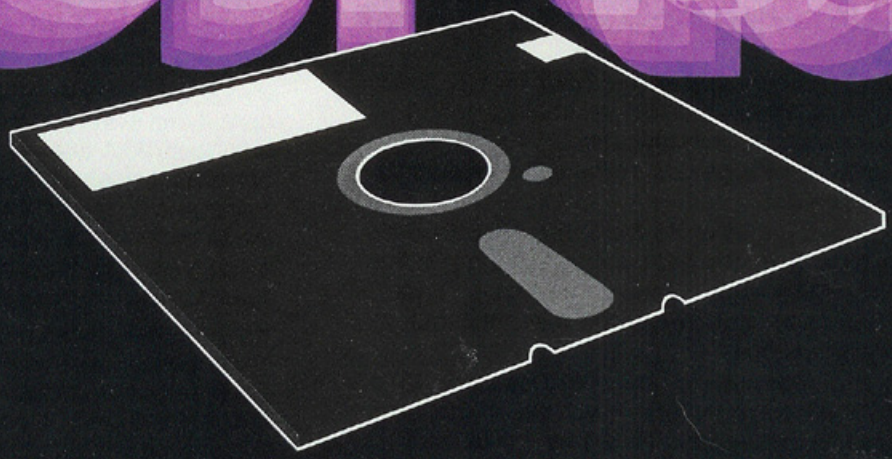

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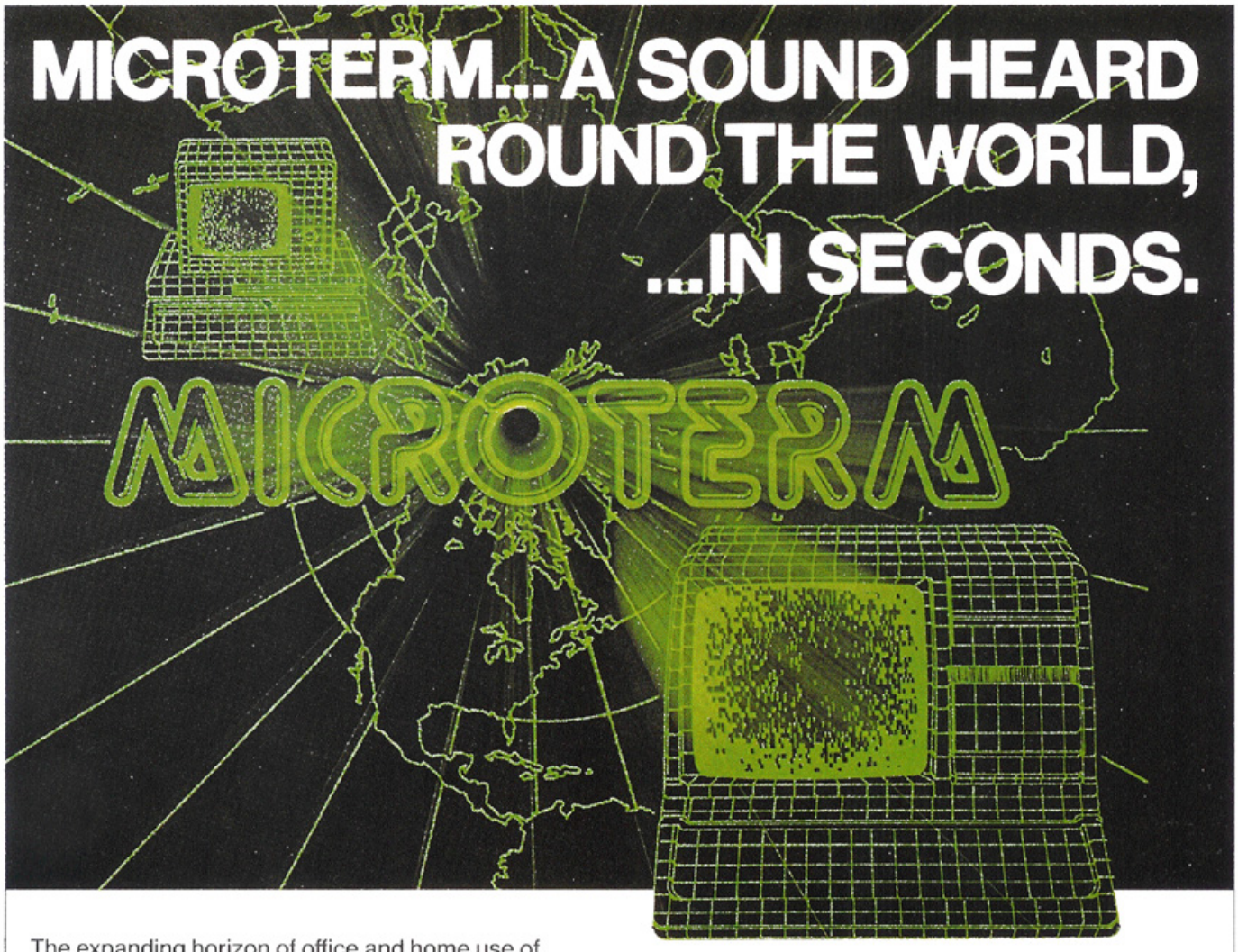

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November/December

Table of Contents

Articles

File Transfer with MicroTerm 3
Mark R. Lautenschlager

Forms Letter 8
Barry N. Gordetzer

Why Use a Word Processor 25
Chuck Tesler

Columns

Log-in 2
Mark R. Lautenschlager

Random Routines 7
Todd N. Tolhurst

Karl's Klassroom 9
S.W. Karl

Questions & Answers 29
Todd N. Tolhurst

Log-off 32
Mark R. Lautenschlager

Reviews

An Evaluation of Newscript 7.0 17
J.L. Latham

MicroTerm — a communications package for the TRS80 . . 22
Tim Knight

Log-in

Welcome to the November/December issue of the DOSPLUS NEWS INFORMATION CENTER. This is the sixth and final issue of the 1982 year (even though you won't receive this until 1983). We hope that you have enjoyed this past year of newsletters and will be with us again in the coming year.

There are some policy changes coming next year, so be certain to catch this issue's "Log off". There is still no decision as to the name for next year and we are still soliciting suggestions. The reason for the change is simple : with the ever-growing popularity of Micro-Systems Software's OTHER programs, such as MicroTerm and Micro-80, we will be offering support and information on a much wider range of products. Therefore we would like a more "general purpose" name than the one we have. It has served us well this past year, but we have out-grown it.

This issue we have a lot of good material for you. This issue is our unofficial "communications issue". We will be dealing with MicroTerm and other communications subjects. The feature article is on file transfer with the MicroTerm package and Todd Tolhurst's Random Routines deals with a simple host program for you to implement yourself.

We have reviews on NewScript 7.0 and MicroTerm (re-printed from InfoWorld Magazine) this month. My guest article is a fascinating discussion of "Why use a Word Processor?" by Chuck Tesler (who is the author of the powerful "NewScript" word processor). He will also address the timely area of micros versus dedicated word processors.

S.W. Karl is back with his excellent Karl's Klassroom. This month, S.W. covers the use of educational software and whether or not we are doing the proper thing in striving to produce a generation of "computer literates". He also deals with the difficult question of whether or not teachers will be able to keep up with the kids they are instructing.

Do remember to check out the announcement regarding MicroTerm 1.4 upgrades. The final version is done and they are available. This follows immediately the re-print of the MicroTerm review from InfoWorld.

We will also cover some pre-release information concerning DOSPLUS 3.5, our newest Disk Operating System, that is due for release to the public this spring. Early announcements and rumors had the date fixed at January the 15th, but we will not be releasing it then. This will discuss why and when it WILL be released.

What are your goals for 1983? We at Micro-Systems Software have several. First among them is to produce and new and larger line of high quality software products for the TRS-80 and other microcomputers. Also in Log off this month I will address the subject of our plans for the other small micros.

Please let me know what you think of the newsletter. Address all letters to :

Micro-Systems Software Inc.
4301-18 Oak Circle
Boca Raton, FL 33431
Attn : Letters to the Editor

If I get enough interesting letters and comments in, we may start an actual "letters to the editor" column. Remember that anything you send may not be returned (due to time factors).

I hope you like this issue. We have had tremendous response to the upgrading of the newsletter. I have more reviewers now than I have programs to review. Many of you who registered will be getting your first programs this month. Well...on with the issue!

Mark R. Lautenschlager
Editor

File Transfer with MicroTerm

by Mark R. Lautenschlager

It has come to my attention that there is some distress in understanding how you can use the MicroTerm Communications Package to transfer files between two computers, be they TRS-80s, IBM PCs, or whatever. Because of that, I want to take this issue's feature article and discuss the hows and whys of file transfer.

The purpose of file transfer

On the surface level, the purpose is obvious and almost ridiculously clear. You transfer files to get a file from one computer to the other. Mother Goose stuff, right? But let's take it to a deeper level.

Suppose that you have two computers. One is an IBM PC and the other a TRS-80 Model III. You, being the wise consumer that you are, have purchased a MicroTerm for each of them. Now, without getting into a heated discussion an the relative merits of the two machines, let's assume that you wish to do all software development on one machine and transfer the finished packages to the other for testing.

One of the most common problems in the microcomputer industry is the high level of incompatibility between different computers. For example, there is no way that your IBM and TRS-80 are going to be directly diskette compatible. They are simply too greatly different. So now you are faced with a problem, how do I transfer the files? This is where MicroTerm comes in and this is the REAL purpose of file transfer : to move files between two computers of normally greatly dissimilar natures.

Another classic instance of file transfer is the communications service (AKA Bulletin Board Systems). Whether this is a large national communications service like The Source™ or CompuServe™, or whether it is a local BBS like Micro-80, the principle is still the same. It is a electronic message center and an information exchange system (as a matter of fact, there is even a BBS system out named "Infoex" for that very reason). One of the most important and often used areas of information exchange is in passing files back and forth through the medium of the BBS.

You may "upload" them to the BBS and you may "download" them the same way. Some people have put this into unscrupulous service by using the BBS as a medium for software piracy. This is a deplorable misuse of an excellent concept.

The types of file transfer

Once you have established reasons why you would want to transfer files (which hopefully we just did), the next step is to address the actual methods of transferring these files. There are essentially two :

First, standard ASCII file transmission. In this method, which most services will support, you must first convert the binary file into an ASCII text file that contains a representation of the contents of the binary file as the corresponding hexidecimal digits for each byte of the file. This file is then loaded and transmitted via the capture buffer or downloaded and saved via the same avenue.

This ASCII file is generally twice as large as the binary file that you began with. The reason is simple. The ASCII text requires one byte for each hex digit. It takes two of these digits to actually make one byte of binary data. For example, the byte "E5" on the disk becomes two bytes in this file, the character "E" and the character "5".

Also, if your files are going to be in a compatible format with the existing (TRS-80, at least) standard, it will have a carriage return every 60 characters. Needless to say, MicroTerm does this. This format is also compatible with such terminals as OmniTerm™ and ST80™. This allows you to send files between two machines that have otherwise different terminal programs.

The facility for this in MicroTerm is called FILECONV/CMD on the TRS-80 Models I and III and XFER.EXE on the IBM PC. Please consult your individual manuals for instructions on these utilities.

One of the great drawbacks to the ASCII method is simply that there is no error checking done on such a transmission. You just load the text into the buffer and send it. You really have no certain guarantee that it will arrive correctly.

On the other hand, one of the greatest assets is that almost everyone will support ASCII file transfer. They may support their own special means of file transfer ALSO, but they will quite often include ASCII file transfer.

The second, and increasingly more popular method would be what is called the "error-free" file transmission. This is usually accomplished with a dedicated program using a complicated protocol. Such a program will allow you to transmit a file directly between two systems without having to do any form of conversion. Often, as is the case with MicroTerm's XFER program, they will use careful error checking to make certain that what is received is what was sent and will retransmit automatically if they detect an error.

There are many popular programs for handling such transfers. Many of the local bulletin board services are starting to incorporate some of them into their programs so that while you are on line with the service, you may use the "error free" method of file transfer.

With MicroTerm, it is simple. We have included such a program for your use. It is called XFER. All that is required is that you have a copy of the XFER program at each end. Please note that XFER also happens to be compatible with DFT from Big Systems Software, another popular direct file transfer program. Therefore, you should be able to transfer between an XFER and a DFT.

The operation of the program is simple. You execute XFER and give it the name of the file you wish to transmit or receive.

If you are transmitting, it will look for the file and if it locates it, send an ENQ and wait for an ACK. Which is to say that if you have given it the filename properly, it will attempt to "link up" with the other program and begin transmission.

If you are receiving, it will create the file and wait for an ENQ. What this means is that it opens the file you intend to receive and waits for the other XFER to signal that it is ready to begin transmission.

Once they "sync up" or begin the actual transfer of the data, the current sector being transmitted will be displayed on the screen. Any problems or errors will be reported and the sector will be transmitted again. The operator may abort at any time by pressing the BREAK key.

Which method is preferred?

That is a tough question to answer. Obviously, for the sake of simplicity and making certain that the file is correctly sent, it would seem that the error free transmission had won the toss. But there are some items to consider.

First, the item of compatibility. The error free file transfer programs have not had any Geneva conferences yet and there is no agreed upon protocol. The protocols used will be just about complicated enough that the programs are guaranteed not to work together unless they are specifically designed to do so.

This means that we all have to be using the same program to transfer the files. Which is great if you and I have bought the same program, but that seems to be the exception rather than the rule.

The ASCII file transfer method is also supported by almost ALL services. I spend a lot of time on the various bulletin boards and communication networks and I can't think of even one that doesn't support it.

So, does that mean that by virtue of the fact that it is more compatible and easier to find, ASCII file transfer is the preferred method? No.

What it means is that each of them have their distinct advantages and any terminal package that is worth its salt will give you the option of going either way (you will note that MicroTerm does this - Ed).

I personally prefer the same method that I apply to all software, whether it be Word Processors, Data Base Managers, or whatever. That method is called the "whatever works is fine" method. Whichever method I need, I use.

Of course, when going between two MicroTerm equipped stations, XFER is really nice. Not to mention that fact that in our first instance of file transfer (can you remember back that far?), transferring between two MicroTerm equipped computers at the same location, you can run at 9600 baud using a direct connect cable (or two standard cables and a null modem adapter). Without the limiting factor of modem and telephone hardware, you can move data from Point A to Point B very rapidly.

There is also one other great limiting factor with ASCII file transmission. Buffer size. You can't upload or download anything larger than your capture buffer. XFER does not have that problem. It transmits until it is through. Whole megabytes of data could be transmitted. But, there IS a way around this problem.

Splitting and joining ASCII files

MicroTerm's binary/ASCII conversion program works directly from one disk file to another. It will convert a file into ASCII or back to binary even though this file is huge. Therefore, the only problem that we face is making smaller chunks out of one of these huge files. That is actually relatively simple.

The first step is to determine just how many sectors of data it takes to fill the buffer. To do that, divide the size of your buffer by 256. Take the integer portion of this number. This is the number of sectors you can handle before the buffer fills up.

The next step requires a bit of BASIC programming skill. All you must do is construct a program to split these files into several smaller files. A sample program has been provided :

```
10 ' Sample program to split ASCII files
20 ' For DOSPLUS NEWS INFORMATION CENTER
30 ' Programmer : Mark R. Lautenschlager
40 ' Created : 12/20/82
50 ' Updated :   /  /
60 '
70 CLS : CLEAR 5000
80 DEFINT I-N : DEFSTR S
90 '
100 ' do the preliminary stuff
110 '
120 PRINT "ASCII file segmentation program 1.0"
130 PRINT "DOSPLUS NEWS INFORMATION CENTER"
140 PRINT : PRINT
150 '
160 ' get the filename for input
170 '
180 LINE INPUT "Input filename : ";S1
190 OPEN"R",1,S1 : FIELD 1,128 AS SA,128 AS SB
200 NL=INT(LOF(1)/117+.9) ' number of loops
210 '
220 ' L=outside loop indicating each 30K chunk
230 ' I=inside loop indicating each piece of chunk
240 '
250 FOR L=1 TO NL
260 LINE INPUT "Output filename : ";S2 : CLOSE 2
270 OPEN"R",2,S2 : FIELD 2,128 AS SC,128 AS SD
280 '
290 FOR I=1 TO 116
```

```
300 GET 1,I+(L-1)*116
310 '
320 ' check for a read past EOF
330 '
340 IF ASC(SA)=0 THEN N=117 : GOTO 430
350 '
360 ' if ok, then move the record
370 '
380 LSET SC=SA : LSET SD=SB
390 PUT 2,I
400 '
410 ' loop until done
420 '
430 NEXT I,L
440 CLOSE
```

As we examine the program, note that it is designed to split these ASCII files into 30K chunks. Users of IBM MicroTerm and TRS-80 users with 32K machines will have to adjust this. Divide your buffer size by 256 (as stated earlier) and then substitute the integer portion of that for the value 117 in line 200. You will also need to replace the 117 in line 340. Subtract 1 from your value and replace the 116 in lines 290 and 300.

As this program runs, after it fills each chunk it will ask you for the name of the next. Supply it with a different name for each file.

That will split the ASCII files for you. Now, to join them all you need is standard DOSPLUS or another BASIC program. If you have standard DOSPLUS, simply use the APPEND command to append the modules back together again. Be certain to append them in the proper order.

If you need another program, simply write a BASIC routine that reads the records from on file and writes them into another. When the file it is reading from is empty, prompt for another and continue where you left off. If you press ENTER, signalling the end of the joining, close the output file.

By whichever method you used, it should now be able to be restored to binary format by using either FILECONV or XFER (depending on the computer).

Summary

By whichever method you choose, the end result is the same. You will have moved a file from one machine to another. There are more problems than simply moving the files, though.

Remember that one machine may not understand the file as it receives it from the other. The only files that you can really transmit are source code files saved in ASCII. Be they BASIC program files or machine language object files, it is almost guaranteed that outside of the computer it is aimed at, the information in the file will not make much sense.

But that is the reason for all this ASCII transfer in the first place. A medium of compatible interchange. In this day and age where no machine reads another machines disks and everybody's assembler outputs files just a little bit differently, you have been able to bridge the gap and move a file between two computers of totally dis-similar natures.

So whether you transfer these ASCII source files with XFER or whether you split them and move them they are (split if needed, that is), you will have accomplished what we set out to do.

And as far as downloading files from a service of some sort (BBS, Information Service, etc.), error free transmission is just about impossible due to the high number of differing programs out there. Future versions of XFER will try to include switches to alter our protocol to work with some of the more popular ones.

But for now, the ASCII method will probably be the easiest and certainly the most common. And for that, you will be limited to the size of your buffer unless the operator was kind enough to split the file into smaller chunks already.

Now that you know how and why, maybe you can teach them...

- Ed.

Random Routines

by Todd N. Tolhurst

µHOST

Since the focus of this month's issue of the DOSPLUS NEWS INFORMATION CENTER is on communications, we'll present a small **host** program for the Model I/III TRS-80, called µHOST (micro-HOST). A host program allows you to control your computer from a remote terminal. In effect, the computer will accept keyboard input from either its own local keyboard, or from the remote terminal. Any output data that would normally be displayed on the computer's CRT is also directed to the remote terminal.

A host program can form the nucleus of your own dial-up computer system. For instance, if you run a retail store, you can use µHOST in conjunction with an inventory program to provide remote terminals with instant access to prices and availibility of products. You could even add an order-entry program to allow callers to order items from the computer. µHOST can also be used as the basis of a bulletin board system (BBS), or many other applications requiring remote access to your TRS-80.

The program listing for µHOST is given in Figure 1. Assemble the program under the name UHOST/CMD. To execute the program, simply type UHOST from the DOSPLUS command level. When the program returns control to DOSPLUS, the host is in effect. You may set your RS232 parameters by using the RS232 command in DOSPLUS.

Your computer can now be operated by any terminal attached to the RS232 serial port. You may wish to consider modifications to the program, such as filter or translation tables, or a method of detecting modem carrier loss.

The µHOST program may be disabled by executing the DOSPLUS command CLEAR (RESET).

```
;    uHOST - TRS-80 Model I/III Host Program 1.0
;
;    Created: 12/13/82    TNT/MSS
;    Updated:   / /         /
;
;    RS232 PORT ASSIGNMENTS
;
RMODEM  EQU  0E8H          ;MODEM STATUS REGISTER
RBAUD   EQU  0E9H          ;BAUD RATE GENERATOR
RSTAT   EQU  0EAH          ;UART STATUS REGISTER
RDATA   EQU  0EBH          ;UART DATA REGISTER
;
;    MISC. ADDRESSES
;
VER     EQU  0125H         ;MACHINE VERSION
KIDCB   EQU  4015H         ;*KI DCB
DODCB   EQU  401DH         ;*DO DCB
HIGH1   EQU  4049H         ;MODEL I HIGH$
HIGH3   EQU  4411H         ;MODEL III HIGH$
;
        ORG  5200H
;
HOST    BIT  0,B           ;INPUT?
        JR   NZ,HOST2      ;YES
;
;    OUTPUT BYTE TO RS232
;
HOST1   IN   A,(RSTAT)     ;TRANSMIT REGISTER
        AND  40H           ;EMPTY?
        JR   Z,HOST1       ;NO - WAIT TILL EMPTY
        LD   A,C           ;GET CHR
        OUT  (RDATA),A     ;OUTPUT CHR TO RS232
;
;    OUTPUT BYTE TO DISPLAY
;
        JP   $-$           ;JUMP INTO DISP DRVR
        EQU  $-2           ;INSTALL *DO ADDRESS
;
;    INPUT BYTE FROM KEYBOARD
;
HOST2   CALL $-$           ;CALL KEYBOARD DRIVER
KIDVR   EQU  $-2           ;INST ALL *KI ADDRESS
        OR   A             ;GOT A CHR?
        RET  NZ            ;YES - ALL DONE
        IN   A,(RSTAT)     ;RS232 CHR AVAILABLE?
        AND  80H
        RET  Z             ;NO CHR AVAILABLE
        IN   A,(RDATA)     ;GET CHR FROM RS232
        OR   A
        RET                ;RET W/CHR
```

```
;
;
;    INSTALL HOST PROGRAM
;
STRT    LD   HL,(KIDCB+1) ;GET *KI DRIVER
        LD   (KIDVR),HL   ;INSTALL IN HOST
        LD   HL,(DODCB+1) ;GET *DO DRIVER
        LD   (DODVR),HL   ;INSTALL IN HOST
;
        LD   IX,HIGH3     ;ASSUME MODEL III
        LD   A,(VER)      ;GET MACHINE VERSION
        CP   'I'          ;MODEL III?
        JR   Z,STRTO      ;NO
        LD   IX,HIGH1     ;MODEL I
STRTO   LD   L,(IX+0)     ;GET TOP OF RAM
        LD   H,(IX+1)     ;INTO IX
        LD   DE,STRT-HOST ;GET LENGTH OF PROGRAM
        OR   A            ;CLEAR CARRY
        SBC  HL,DE        ;HL=NEW TOP OF MEM
        LD   (IX+0),L     ;ADJUST
        LD   (IX+1),H     ;TOP OF MEM
        INC  HL           ;HL=START OF PROGRAM
        EX   DE,HL        ;DE=START
        LD   HL,HOST
        LD   BC,STRT-HOST
        PUSH DE           ;SAVE STARTING ADDR
        LDIR              ;MOVE HOST INTO HIMEM
;
        POP  DE           ;GET HOST ADDRESS
        LD   (KIDCB+1),DE ;HOOK INTO *KI
        LD   (DODCB+1),DE ;AND *DO
;
        RET
;
        END  STRT
```

Figure 1

The FORMS Letter

by Barry N. Gordetzer
Miami, FL

DOSPLUS provides its own software printer driver in lieu of that provided by Tandy as part of the BASIC ROMs. This provides the user with considerable flexibility (via the FORMS command, page 55 in the DOSPLUS manual not otherwise available with the unalterable, preprogrammed ROMs. However, the DOSPLUS driver, under two circumstances, must be either modified (via FORMS) or totally defeated for the proper operation of certain smart printers.

The first circumstance is common to most users. It is common practice to simply use LPRINT, without any variable or character string, to obtain just a line feed. If this is attempted, many users might be unpleasantly suprised to find that absolutely nothing happens. It is as if the LPRINT command was never executed. This does not imply any problem with DOSPLUS and, as with most problems, a trip to the proper location in the instructions will explain all. The proper location is page 57 of the DOSPLUS manual. It is here that the NULL parameter for the FORMS command is explained. Briefly, for the reasons explained on page 57, if the NULL parameter is ON, the DOSPLUS printer driver intentionally will not send a line feed to the printer if the driver sees only a carriage return and no text. This is precisely the case with an LPRINT followed by no variable or character string. The solution is simple: turn OFF the NULL parameter by following the instructions on pages 55-58. From the DOSPLUS READY mode type:

FORMS (NULL=OFF,SAVE) [ENTER]

This will permanently alter the disk. Omit the comma and SAVE to effect the change only until the next re-boot.

The second circumstance is common to users who utilize CHR$(0) for a printer control command. The EPSON MX-80 with Graphtrax-plus, for example, uses CHR$(0) to turn off the underline and unidirectional print modes. DOSPLUS users will find that the CHR$(0) is ignored. In fact, it never gets to the printer because the DOSPLUS printer driver ignores a null string (CHR$(0)). There are, of course, simple solutions to this apparent dilemma. Below are three of them, but the last is recommended for reasons which will be explained.

The basis for each of the three following fixes is to defeat the DOSPLUS software printer driver and rely on the ROM driver. However, doing this defeats all of the advantages and flexibility of the DOSPLUS driver. Those users who utilize the features of the DOSPLUS driver will have to make one of those dreaded decisions that life is sometimes full of; retain the related DOSPLUS features or pass the CHR$(0) to the printer. In this case, one can simply not have their cake and eat it also.

The DOSPLUS driver can be easily defeated by simultaneously depressing the [SHIFT] and [UP ARROW] keys when booting the disk. Alternately, the following call can be used, in BASIC, to accomplish the same result. (Model III only. - Ed.)

```
DEFUSR0=&H69
A=USR0(0)
```

Both these methods are effective but lack elegance as they also kill all the other DOSPLUS input/output software drivers such as the keyboard, etc. Some immediate disadvantages of this broad spectrum approach is the inability to use the DOSPLUS spooler and DO files. This disadvantage can be easily countered with a precise surgical approach. In this case, appropriate values can be POKEd into memory so that only the printer driver is defeated. The BASIC commands are as follows.

```
POKE 16422,194
POKE 16423,3
POKE 16427,255
```

(Model I users try these :

```
POKE 16422,141
POKE 16423,5
```

- Ed.)

These statements can be executed either in the command mode or, typically, in the first line of a BASIC program. To turn the DOSPLUS printer driver back on either reboot or use the following POKEs.

```
POKE 16422,195
POKE 16423,166
```

(Model I users:

```
POKE 16422,92
POKE 16423,77
```

- Ed.)

With reference to the first part of this discussion, if the DOSPLUS printer driver is defeated in favor of the ROM driver, it is not necessary to turn the NULL parameter OFF to send an LPRINT for just a line feed.

Considerable thanks must go to Justin Bell of EPSON and Rich Leun and Todd Tolhurst of Micro-Systems. All three displayed a great amount of patience, interest, and technical expertise in helping to sort out the solutions given above. Also both companies are to be complimented for sustaining excellent technical support staffs. Some other firms (guess who) could learn a great deal from EPSON's and Micro-Systems approach to customer assistance.

(Thank you, Barry. - Ed.)

Karl's Klassroom

by S. W. Karl

During the past two months I have conducted workshops for numerous groups of educators. The participants have included teachers at all grade levels; administrators, department heads, and specialists in areas of learning disabilities (visual, vocal, mental, etc.). These people have come from public, private, and parochial schools, and fall into two basic categories: (1) Those who want to prepare themselves for the day their schools will enter the Computer Age, and (2) those who have been thrust there by the (sudden) appearance of computers in their schools.

The first group is relatively easy to help. They are eager to explore the ways a computer can assist them in teaching their subject matter to their students, how they can do a more effective job of keeping class records and eliminate some of the routine, repetitive work. (Paperwork has always been the bane of a teacher's existence, consuming time and energy that could be utilized in more efficient class preparation, or actually teaching.) Their greatest apprehension is the fear that they will be replaced by a machine, or that they will become slaves to an electronic system they don't understand.

The second group, those who already have the computers, are suddenly aware that they are not prepared to make effective use of what they have. One of the groups I have been working with for several months is the Florida Diagnostic Learning Resources Services. The coordinator of the group, Mrs. Janeen Clinton, summed up the problem in these words: "These people have had 'computer awareness' courses crammed down their throats for two years, but never seriously thought they'd see the day when they would have computers to work with. They have been promised so much for so long they thought computers were just another of the unattainable goals. Now it's a reality, and they don't know what to do."

Part of their problem is their inability to keep up with students who have been using computers at home for several years. One new teacher of math and computer programming at a public high school told me she had taken two years of computer sciences along with her math courses in college. She is very capable with Fortran and systems analysis, but is weak in BASIC, which she found herself teaching only a few weeks after getting her degree. To bolster her BASIC, she enrolled in one of my classes, and confessed after completing an assignment to create a multi-dimension array that she had been totally baffled by it. One of her ninth grade algebra students took a cursory look at her program and said, "It isn't going to work unless you give it a DIM statement first."

That student has been using a Model I at home for over three years, and programming in BASIC and Assembly Language are easier subjects for her than cooking and sewing. (She admitted to her teacher she hopes some day a boy will come to the house to see her rather than to play Star Wars on her computer!)

I recently visited a parochial school which is the proud owner of one Model III. A benefactor donated a new machine to the school to help modernize the office, and the principal, along with several of her teachers and clerical staff, enrolled in a BASIC course to learn as much as they could about their computer, affectionately named Herman. ("It was the only way we could get away with keeping a man in the office.") As we toured the classrooms, we asked how many of the students had computers at home. In every class of 20 to 30 children, at least two said they had their own computers. Even Sister Shirley was a bit surprised to find that the younger the age group, the greater the number of experienced users. After we left the first grade classroom, she leaned against the wall in the hallway and confessed, "We'd better get busy if we expect to stay ahead of that bunch!" Of the 22 students in the first grade, 19 had a computer of some sort at home!

The teacher's fear of being replaced by a machine, or becoming a slave to it, usually disappears when it is demonstrated how students can proceed at their own pace, leaving the teacher free to concentrate on helping the student who needs some personal attention in mastering the lesson material. This effectively utilizes the teacher's skills where it is needed most.

There is another side to this, however. Some teachers will use the computer as an excuse to keep from doing the actual teaching. Ineptitude in the classroom is far from unknown. Poor teachers as well as good teachers will receive the best of materials, and once they have taught the students the fundamentals of operating the equipment will scarcely do more than monitor what the student is doing. The excuse is, "The materials are excellent, and Johnny knows how to use them. If he can't learn the parts of speech with the help of a computer, I don't know how to help him."

Fortunately, teachers with this attitude are in the minority.

Many schools are beginning their acquisition of computers by placing them in the media center, where they may be used as is any other library equipment. A student will come into the center and check out a program (tape or disk) as he would a book. With the addition of Network™, no volatile media need be given the student; programs are sent from the console. When a class is brought to the center, the teacher could use the equipment to present the same lesson to the entire class, or have each student do whatever material needs to be reviewed or reinforced.

This method becomes clear and easily understood when a group of 12 teachers are attending a seminar, and soon find themselves working on eight or ten different lessons or subjects while the instructor (myself) goes from one to another to assist with problems of handling the equipment or explaining how to run a particular program.

A fundamental knowledge of BASIC programming can go a long way in creating useful teaching materials. I have no idea when or where I acquired a program called "SpedRead," but think it was one of those many things I gathered from anybody or any place I could when I first got by own computer. (Every newcomer is so hungry for software that does anything he fills dozens of tapes and disks with programs he never looks at a second time -- until he remembers some little thing that could be transformed into something useful.) I'll pass it along here for your use. Originally it contained a spoof of Gone With the Wind, and simply displays one line at a time on the screen at varying rates of speed. I enjoy showing this to teachers because of the beautiful example it presents of good English: "... he looked into her pail green eyes ...", which suggests that Scarlett "O'Harra's" eyes looked like the "moss covered bucket that hung in the well."

I have them list the program, then suggest they could replace all the PRINT statements with material from their own courses. This program is now being used in a private school presenting the Gospel of St. John, and, in another, a passage (changed weekly) from a social studies workbook. The program is simplicity itself:

```
0   CLS: INPUT"HOW MANY WORDS
    PER MINUTE DO YOU READ"; W
2   B = (12 * 60 / W) * 500
3   GOTO 100
4   FOR I = 1 TO B: NEXT: CLS:
    PRINT @ 448,: RETURN
100 PRINT"SCARLETT OHARRA WAS
    NOT BEAUTIFUL, BUT MEN
    SELDOM": GOSUB 4
101 PRINT"REALIZED IT WHEN
    CAUGHT BY HER OWN CHARM AS
    THE TARLETON": GOSUB 4
102 PRINT"TWINS WERE. IN HER FACE
    WERE TWO SHARPLY BLENDED
    THE": GOSUB 4
```

and so on (with similar atrocities to grammar and spelling). This is an example of how you can make a silk purse out of a sow's ear. Properly used, this program will reinforce almost any subject matter while assisting a student to increase his reading speed. By selecting a higher number each time, the program will increase reading speed dramatically over a period of several weeks.

Good software for teaching math and science is plentiful, thanks to the very nature of the computer, and those who work with them day in and day out. The teaching of language arts has a long way to go before software of similar quality and quantity is available. I would appreciate hearing form any of you who have been using programs to teach grammar, spelling, punctuation, and reading skills which you feel is better than average. I'll be happy to review it and pass along your comments to others.

Among the many programs offered by Micro Learningware (Box 2134, N. Mankato, MN 56001) is a group of short programs designed to drill middle school students on parts of speech. Recognition of nouns, verbs, pronouns, adjectives, and adverbs are presented in sentences, one sentence at a time, at the top of the screen. At the lower right is a graphic signboard, and standing to the right of the signboard is an android, who is constantly in motion, looking from right to left, up and down, and wiggling his arms. The student presses the space bar, and the first word of the sentence appears on the sign. When the correct part of speech is in the sign, the student presses ENTER; the android then looks at the word, and shakes his head for "NO" or turns it from side to side to indicate "YES." Appropriate messages ("Way to go! Keep up the good work!") will appear on the lower left of the screen before the next sentence appears. These programs are interesting enough, thanks largely to the friendly little android, that I can keep teachers interested for 20 to 30 minutes. (Talk about professional goofing off! -Ed.)

Another of the excellent programs from Micro Learningware is a quiz on the Revolutionary War. The quiz is structured as a contest between two players. Questions are selected at random, with varying point values depending on the difficulty of the question. The players take turns, and if a question is not answered correctly the computer selects another question for the next player. Each question that was missed will appear again in the quiz, in random order. For example, a 6-point question is, "The King of England during the American Revolution was: 1) George II, 2) George III, 3) George IV, 4) George V." (Quickly! Which one was it?) If the correct answer is not given, the question will appear as often as necessary until it is answered correctly. Boxes at the upper right of the screen keep track of the score, and competition can be fierce.

I'm writing this column in the evening, after demonstrating this program to a group of teachers from a parochial school. One of the nuns said the American Revolution was her favorite topic, but when she got into the quiz, she stared at the second question, and murmured, "Oh, my God! Back to the books!" For those of you who are Revolutionary War buffs, try these for size (all 6 and 7 points each):

At the Battles of Lexington and Concord, the total number of casualties was closest to: 20, 200, 2000, 20000.

The first Secretary of the Treasury of the U.S was: Thomas Jefferson, Henry Knox, Alexander Hamilton, James Madison.

The chief authors of The Federalist Papers were James Madison, Alexander Hamilton, and: James Monroe, Thomas Pinckney, John Jay, George Washington.

Naturally, the 3 and 4 point questions are easier:

George Washington crossed the Delaware River to attack a British force stationed at: Chester, Phillipsburg, Trenton, Wilmington.

The American Revolution began in 1775. It ended in: 1776, 1778, 1779, 1791.

In 1775, Ethan Allen and his Green Mountain Boys seized: Fort Tyler, Bennington, Fort Ticonderoga, Champlain.

Of course, you'll find a 1-pointer, asking how many stars were on Betsy Ross's flag.

Good math programs are abundant, such as one entitled, "The Fraction Game" by William G. McArthur. The main menu gives the student the choice of:

Reduce Fractions to Lowest Terms
Add and Subtract Fractions
Multiply and Divide Fractions
Improper Fractions
Greatest Common Divisor
Least Common Multiple
Decimal Equivalent

The student enters his name, then makes his selection. The numbers used for numerators and denominators are chosen at random (appropriate for the type of problem). When a correct answer is given, a message such as, "Marvelous, Grace, you are right," or "Beautiful, Grace, that's it!"

Two of my favorites (which I don't see as often as I'd like) are "Shazam, S.W., you are right," and "Tally ho, S.W., that's it!"

The problems continue until the student asks to return to the main menu. He may then select problems of a different sort, and continue until out of time or frustrated (I hate math!). When he finally elects to end the program, the screen clears, then prints a summary: "S.W.'s Report Card," displaying the total number correct and incorrect, thanks him for playing and invites him to come back for another round.

Software of the kind I have been describing in this column is not designed to teach the subject matter; it is designed to reinforce what the teacher has already taught, and provide the student with some interesting review.

This brings up another aspect of what makes good classroom software. It can be educationally sound, but if it does not hold the student's interest it is less than useless. Children today have less patience with computerized learning than those of five years ago, because computers are no longer the distant, all-powerful wonders they once were. Students today have been conditioned to believe that computers, whether found in the game room in the shopping center or in the classroom, should be interesting to use; they expect to be entertained. A crude android shaking his head offers nothing to the learning of pronouns except the one thing the student expects: It is fun! And if it is fun, they'll sit there and learn (whether they realize it or not) until one of three things happens: Somebody presses the BREAK key; the power company takes a mini-vacation; the angel Gabriel blows his trumpet announcing the Ultimate System Crash. Last January when a severe ice storm crippled Minneapolis, businesses and schools were shut down just before noon on Friday. Students happily went home for another vacation — except the students who were working in the computer labs. They would have stayed at their terminals until Gabriel started his concert had the school officials not ordered them out and made them go home.

I received some interesting material from Robert G. Hoffman, Ph.D., of Indianapolis, just in time to comment on it for this newsletter. Dr. Hoffman contends that we need to do some serious thinking about how we approach learning as a whole. He has worked out a somewhat different approach to the traditional textbook, in what he calls a "Postertext Book." The postertext consists of a series of loose-leaf pages which can be removed and rearranged in story-board form, presenting related materials from perhaps several disciplines in a logical sequence for the subject matter at hand. He states that "lavish" use of pictures is more effective than plain text, and by use of the postertexts in story board fashion, the teacher will achieve a greater bond of communication with his students.

I feel Dr. Hoffman has some valid points, but would like to see him be more specific on how to use computers to present his postertexts or story boards. This is where you could come in. I gather from his comments that his background is in the physical sciences, which could be a good starting point. He invites anyone to write to him for more information, and possible contribution to something totally new. You can reach him at:

Robert G. Hoffman, Ph.D.
5044 Allisonville Road, Apt. F
Indianapolis, Indiana 46205

In the next issue I'll give you a list of many of the software publishers whose programs have been favorably received by educators. You all know there are good materials as well as mediocre materials available, but without some feedback from more of you it is difficult for me to do more than recommend those of whom I have personal knowledge. Many of them advertise in the professional journals, but there are others who are virtually unknown. Much good software is hiding in obscurity because the publishers are not in a position to hire field representatives or do much national advertising.

Apart from the ads in your journals, a good place to begin searching is at Radio Shack. Most of you are aware of their thick "Applications Sourcebook," but few of you know about another publication they have available. It is called "Educational Software Sourcebook" and sells for $4.95. (Cat. # 26-2756.) This book should be in the hands of every teacher who is searching for new materials. At the very least, every school should have a copy of it.

We need to realize that the Computer Age has arrived. Exactly how computers are going to "revolutionize" teaching is still to be seen. Are they going to prove to be an expensive fad as the language laboratories did in the 1960s? Many of you can remember that every school and college "had to have" a language laboratory if they were to be "progressive." I received my first college-level position at the University of Central Arkansas in 1962 (still known then as Arkansas State Teachers College) not only because I filled a need for an instructor of Latin and German, but also because I filled a very urgent need to assist the administration and the department in choosing the equipment for a 30-seat language laboratory. I had had some experience in managing the language laboratory at Kent State University as a graduate assistant. I suspect I took the job as much for the prospect of being able to select the equipment I wanted as for the opportunity to teach in my fields. Over the next few years I began to realize that language laboratories, and the audio-visual approach to teaching languages, were suffering from <u>good</u> materials. Most of it was simply a vocalizing of standard texts, with the drills recorded on audio tape rather than printed on paper. The faculty in

the department all had the same complaint: "I can't find the right materials to use! What I have is nothing new, and I spend too much time preparing to do the same old thing in a new way."

Two years ago I met one of my former students who had taken three years of German with me. He had since earned his doctorate and at the time was curriculum coordinator for one of the largest county school boards in the country. He had spent many summers teaching there, and is now Vice President of the university. When I asked him about the language lab, he shrugged his shoulders. "I spent a lot of hours there, and I guess it helped me. But I don't know. It's still there. They tore down the building a couple of years ago, and the lab got moved to the basement of the library. I don't know if anybody's using it much, or if it's just gathering dust. Hell, who's interested in twenty-year-old tape recorders?"

Will our computer classrooms suffer the same fate? Are they filling a need other than novelty? We are being pressured to become a nation of "computer literates," whatever that might mean. Educators like you and I are being faced with demands that sometimes approach the unreasonable. "Johnny needs to know as much about computers as he can, or else he's not going to make it when he gets out of school."

Will knowledge of computers and programming and a wide variety of applications be of any value to Johnny if he doesn't know the difference between a trial balance and a profit and loss statement? Will a "computer literate" do a better job of designing a lasting peace for the Middle East than a "computer illiterate"? If Johnny knows how and why a 68000 processor functions and why it is capable of more things than an 8080A, will he do a better job of managing people to attain the goals of his construction firm?

I feel that we have a long way to go before we can state without reservation that the computer is the answer to our problems. I do feel that once we have defined our problems, we can begin to find ways to have the computer help us. But the computer itself is not the solution: it can only assist us to find the solution if we know what we want to do. It is up to us, as educators, to define the problems before we blindly turn to the computer for assistance.

Now it's your turn. Are you working for your computer? Or are you using your computer constructively, having it assist you in solving a problem in education? Drop me a note here at Micro-Systems Software and let me know what you're doing to solve those problems. Who knows? Perhaps what you're doing could be the stepping stone to someone else's finding a solution to the problem of world hunger. And isn't that more important than producing a generation of "computer literates"?

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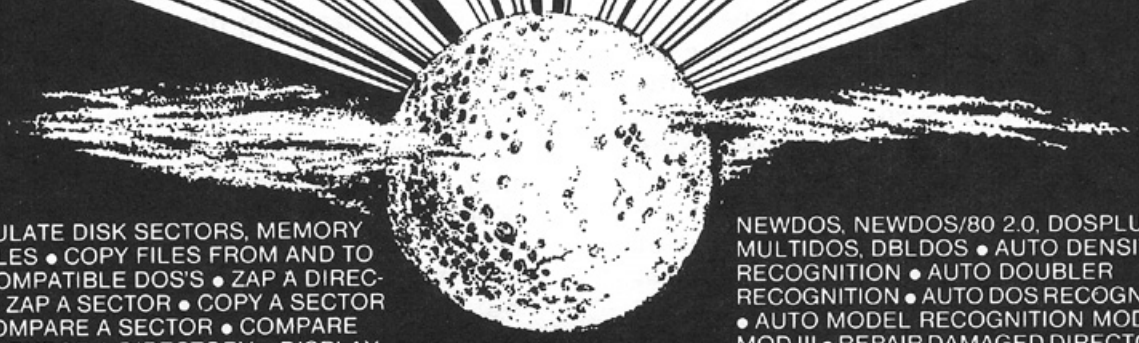

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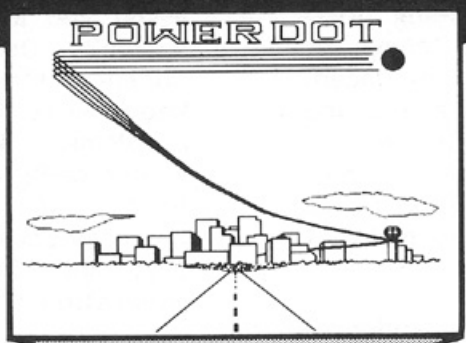

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An Evaluation of Newscript 7.0

by J. L. Latham

I feel sort of like the group of blind men who were trying to describe an elephant based on each one's limited grasp of the object at hand. So it is with the NewScript word processing system from PROSOFT of N. Hollywood, CA. It is such a large, versatile, and friendly system that it is hard to know just where to start telling you about it. I suppose that I should lay a little groundwork and build from there.

A word processor program is one that turns your computer into a super typewriter and printing press. They do this by giving you the ability to write and manipulate text through some form of text editor, and through a program that controls the actual format of that text to a printer. Just how well they do this, how much control they give you over the text and its final form, and how easy it is for you to use should be the basis for the evaluation of any word processor. Also, in any "serious" software application you should consider at least three things when you purchase the program: 1) does it do the job intended, 2) how well does the company support it, and 3) (at least this is a consideration to me) how much program you get for your money.

Does it do the job intended? Oh yes indeed. There is no doubt that you can type text in and get printed matter out. It is the in-between steps that make the difference. While you are writing, or editing, your text there are some 50 commands available to help you manipulate it. You can do everything you would expect to have to do to work with your text to get it in the shape you want it to take. There are commands to delete letters, words, and lines; commands to find, search, locate, change, alter, move, and copy text. There is an autosave feature that will write your text to disk after you have made a specified number of changes to it. That's just in case your power goes out, or some other unforseen circumstance takes your computer out to lunch, at least you save some of your work. There are even two command macros. These can be set to execute any series of editing commands that you find yourself using quite often. These commands are given to the computer in a form that is easy for you to remember. Want to change some text? Then use the CHange command. Or if you want to find a section of text, then use the FInd command. Make a mistake on the current page of video and want to start over, then there is the WHoops command just so you can start over. All of the editing commands are like that, and each can usually be input as only two letters, such as CH for change, or CO for copy. These commands can be input in either lower or uppercase letters; either way the results are the same.

To help you get started using the system, and as a reference after that, PROSOFT provides you with a 280+ page manual that has not only a table of contents, but a usable, complete index. There are about 1320 entries in that index section, so just about anything you want to look up should be back there. The manual is clearly written, gives good examples for all commands, and covers just about anything you need to know about NewScript. There are sections on setting up your system, a section describing NewScript itself, tutorial sections for the editor and the script (print formatter) options, an advanced tutorial for special functions, sections on the commands used in edit mode and the ones used to control your printed output. There is even a "How to" section that covers things like letters, form letters, indexing, scanning

and searching, how to set up titles, headers and footers, and much more. The manual has been touted as a model for the rest of the industry. You also get a quick reference card that has the down and dirty on all of the commands and features so that when you just need a little refresher about a command you can skip thumbing through the manual.

While you are using NewScript your keyboard, video, and even your printer are under the control of a special program commonly known as a keyboard driver. This program is a special one that has its own type ahead buffer, so that even the fastest typist will not lose characters during processing. It also handles special commands like the ones that allow you to put the TRS-80 graphic characters in with your text, or on the Model III to switch from special characters to space compression codes, or to put any code from 00 to FF hex right in your text. It also includes a 1K printer buffer to assist in rapidly processing your printing. One more thing that it does is virtually eliminate string compression or "garbage collection" as it is sometimes called. Hey, you say, if it is subject to string gathering then it must be a BASIC program. Not so, byte breath! Lets get that out in open and clear it up once and for all.

NewScript has been accused more than once of being a word processor written in BASIC. This is not true at all. It is a machine language program that is interfaced to the operator and system through some BASIC programs. This programming approach is what lets NewScript rapidly adapt to a new operating system, or quickly be modified to support a new printer on the market. Check out the ads for the number of printers supported by this processor, you will probably find yours listed there. The manual specifically mentions 24 different printers, and since that printing support has been added for a host of others. In most cases you can even call on the special features of your printer from within your program text. And that leads us on into the subject of scripting, or formatting the actual printed product.

The actual printing of your text is handled by a program called SCRIPT. Most of the commands that control the look of your printed text are put right into the text as you are editing it. NewScript uses a method known as "dot commands" to give instructions for formatting output. This is a carry over from some mainframe word processors, and is the method used by such programs as WordStar. The theory is this: if a line begins with a period, or dot, then the following characters on the line are control instructions to be used to determine the output form of the text. A command may be as simple as ".PP" which signals the start of a new paragraph, to something as seemingly complicated as:

.PL66;.LL70;.TM6;.HS2;.HM2;.FS2;.FM2

That is my standard line for starting text documents such as this one. It is on a file on disk so that I don't have to type it in each time I write a new document. That line reads in English something like this: my Page Length is 66 lines, the Length of each Line is 7 inches (or 70 tenths), the Top Margin is 6 lines, Header Space is 2 lines, Header Margin is 2 lines, the Footer Space and Footer Margins are each 2 lines. Notice how the names for the commands match with their codes? Really makes reading the source document easy, thus making changes in format easy. There are commands like those to control overstrike, single or double spacing, centering lines, controlling justification, formatting lines, changing print pitch, imbedding other text files into the one you are editing, and many more. There are about 54 or 55 commands like that for controlling

everything from line spacing to the position of the page number, to creating top and or bottom titles for printing on even, odd, or all pages. There are two that aren't usually found in a word processor. Those are .TC and .IX.

.TC and .IX are for those of you writing manuals or other text that need a table of contents and an index section. By imbedding these commands in your text when you create or edit it, you automatically have a table of contents and an index created when you printout your document, and the page numbers are always correct no matter how many changes you made to the document.

When you finally elect to print your document you have 14 run time options to let you over-ride commands already in the text. You can have the printed output sent to the video only (saves paper when proofing a document), you can choose the number of copies to be printed, have the name of the file that is being printed put right on the printed page (for use with editing later), you can choose double or triple spacing, and the number to place on the first page printed. There is also one command that lets you go into a mini-edit mode while printing the document. If you chose this option then before each line in the source document is acted on by SCRIPT you have the following options: leave the line alone, delete the line (just for now), replace the line (again, just for this time), add a line in front of the line showing, or Terminate the mini-edit mode and continue on. While printing a document if you notice a gross error you can stop the output without having to process the whole thing.

There are so many features of this fine word processor that describing them all would take a book about 280 pages long. We don't have that room here. There are even some optional features that are available at extra cost. One of these is the labels option. This option lets you create mailing lists that can be used both to print labels for envelopes and to place information in form letters to give them that personal touch. You may add either the Microproof or Electric Webster spelling checkers with correction features to the system. Electric Webster will process a 1500 word document in well under a minute, not counting disk access time. You may also add G.E.A.P. to the system. G.E.A.P. is a special program that gives you, with the right printer, the ability to draw pictures on your video and save them to disk in a file format that NewScript can read, edit, and print. You can use it to create your own letterheads, add graphic illustrations to text, or anything you imagination can come up with, if your printer can duplicate the TRS-80 graphic character set.

Given all of this you are probably asking yourselves just what is it that I'm not telling you. The only task that I have ever asked NewScript to do that it couldn't was to center a whole page vertically. Horizontal centering it handles just fine, but not automatic vertical centering. PROSOFT says it probably will never have that ability due to the amount of memory required to perform such a function. You can get around this limit by inserting line feed controls in your text. I once used that method to print a 50 page book of poems for a friend. It wasn't so bad once I got used to it.

The current version of NewScript (7.0) will not do multiple column printing, but version 7.1, due out around March of '83 will have that ability if the printer has reverse line feed ability. Soon there is also going to be another extra cost option that will allow proportional print with the Epson series of printers (Graftrax of some type will be required), it will

also allow access to italics on the Prowriter, and even allow you to use some of the DotWriter print styles with an Epson printer. This option is anticipated to sell for about $29.95. DotWriter is a module of G.E.A.P. that uses high resolution graphics to create special character sets such as Olde English, Greek, and even user defined characters.

We seem to have covered the first of the requirements for good serious software, and I think NewScript has met that requirement admirably. Now that we know it will edit and process text easily, rapidly, and with great versatility, how about the question of user support after the sale.

This is an area that has impressed me greatly since I first bought SubScript from PROSOFT about 2 years ago. I later upgraded to NewScript and the support from PROSOFT has always been top notch. My letters have always been answered promptly and personally. Although they do not have a toll free line, they do have a very knowledgeable individual manning their phone during business hours. When you call chances are you will hear "PROSOFT, this is Ron. May I help you?". Ron has not yet failed to come up with an answer to any question that I have had, and I've asked some pretty strange ones. If the manual is so good and the program so easy to use, then what am I doing asking questions? Well, some of us just can't follow instructions, and some of us just can't look at a picture and see what the artist put there, and some of us mess around with our computer so much that it is a wonder that anything on it works at all. That's me. So, occasionally I have a question, Ron always has an answer.

An example of the support given by PROSOFT can perhaps best be shown by telling the story of a letter that appeared in 80 U.S. Journal. A professional writer from Iowa wrote in praise of NewScript, but noted that because he only had one hand, he had difficulty in using the delete character command. That command was then accomplished by pressing and holding the <CLEAR> key and then pressing the <D> key. The writer's hand was not big enough to span the keyboard and hold both keys at once. The folks at PROSOFT got wind of that letter and responded by changing the control sequence. Now any time that the <CLEAR> key is pressed, it locks on until another legal key is struck, or until it is pressed again to unlock it. This small change in the program now means ,to the best of my knowledge, that NewScript is the only word processor that can be used by a person handicapped even to the point of only having one digit to type with. If you can get the disk in the drive and press the RESET button, then you should be able to use NewScript. I can even think of cases of a person not even being able to insert the disk or boot the system, but still being able to use NewScript. Who? How about an individual who has no arms and has to have someone else boot the system for them and then type with an implement either held in their teeth or held in a brace on their chin or forehead. It can be done.

Now, gentle reader, I ask you ... is that support or is that support? In my humble opinion, the manual and the support you get with your NewScript package is well worth the $124.95 price tag.

I could go on and on about how great I think this program is. Instead I'll let a couple of other writers speak for the program also. From 80 Micro (Sep '82) by an author who almost obviously uses another word processor): "NewScript is a very powerful word processing program. ... some of NewScript's features are found nowhere else. The ability to embed

(sic) files, to accept data from the keyboard during printing, and to create an index are important functions which may fulfill a word processing requirement that no other program can." Or, how about a word from the pages of 80 U.S. Journal (Feb '82): "Does the package work? Extremely well!! ... NewScript certainly demands a serious look by those who are looking for an excellent value in a word processor."

The bottom line, both in my opinion, and in that of other review authors, is that NewScript has every feature that is required of a word processor, adds some that are found nowhere else, has some of the best support available, runs on any Model I or Model III operating system and is furnished with TDOS, drives virtually any printer, and is reasonably priced for a package of such outstanding quality. Let me put it another way: I own 13 operating systems or versions of them, I have a gaggle of graphic editing programs, and a chorus of disk cataloging programs, but I only have two word processors. And, I haven't used the other one since I purchased NewScript two years ago. If you are in the market for a word processing system, then put your money where it will you the most good, and be best spent - get NewScript.

MicroTerm

I know that we've been telling you that MicroTerm is the best TRS-80 terminal package that you can buy at any price. But then, you'd expect us to say that, wouldn't you? As it turns out, we're not the only people that feel that way. The following is a reprint of Tim Knight's review of MicroTerm 1.1, published in the December 13, 1982 issue of InfoWorld.

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By the way, you may have noticed that the review was for MicroTerm version 1.1. Since the time the review was written, MicroTerm has been updated, and it now includes the following features:

* 10 User-definable "MacroKeys". Send up to 64 pre-defined characters with a single keystroke.

* 4 New translation tables: RS232 Input & Output, Buffer Input & Output.

* True break generation.

* Screen printer.

. . . and more. Remember, all registered DOSPLUS owners receive a $20.00 discount on MicroTerm - only $59.95.

Software Reviews

MicroTerm, a communications package for TRS-80

By Tim Knight

MicroTerm 1.1, from Micro Systems Software, is the best TRS-80 communications program I have ever seen. I do not make this statement lightly; after all, I saw just about every terminal program made for the TRS-80 while I was writing a book on computer communications. Unfortunately this excellent program was not available then.

In case you are not sure exactly what a terminal program is, let me explain. It is a piece of software that utilizes a computer and a modem for communications. The features of most terminal programs usually include the ability to transfer data and programs, in addition to the ability to change the parameters or the "settings" of a modem. MicroTerm 1.1 does this and much more.

FEATURES: I am still amazed at the large number of features MicroTerm 1.1 has to offer.

One of MicroTerm's most important features is "no miss" operation. That is, MicroTerm allows you to leave the terminal mode, return to the command mode, and come back to the terminal mode again without missing a single character.

This means that you could be in the terminal mode on a large timesharing system, go to something in the command mode and then return to the terminal mode and see everything that was printed on the screen while you were "gone." I do not remember seeing any other terminal programs with this feature, and I find it a great convenience.

Another fantastic feature of MicroTerm is high-baud operation. High-baud operation means that data transfer can be made at extremely high speeds (about 16 times faster than standard 300-baud operation). Not only can MicroTerm run at 4800 baud on the Model III computer, but it can also handle 9600 baud.

This is extraordinary—up to now the highest baud rate I have seen on any TRS-80 terminal program is 1200 baud. Remember that this high baud rate is for the Model III only, and that the Model I can support only up to 600 baud with the MicroTerm communications package.

Most of the other excellent features of MicroTerm are found in the command mode. Among these is an auto-log-on message that can speed up the log-on procedure when you are using computer communications.

The automatic dialing feature is especially helpful, since MicroTerm stores up to ten numbers within itself. You simply press a letter (such as B) at any time, and MicroTerm automatically dials that number. So if you are tired of punching in or trying to remember all of those computer-bulletin-board numbers, your troubles are over.

Most of the commands are "toggle" commands—that is, commands that both start and stop a feature. If you want to change the duplex setting from half- to full-duplex, for example, you could simply press D and the computer would toggle the setting to full-duplex.

PERFORMANCE: I think MicroTerm performs better than any other terminal program for the TRS-80. I say this not only because MicroTerm supports high baud rates, but also because it has several ways of transferring data from one computer to another.

The most basic data transmission it supports is ASCII transmission. I discovered another program on the MicroTerm 1.1 disk—XFER/CMD, which can send and receive machine-

language files, but is also completely compatible with my old friend DFT (Direct File Transmission program, by Bob Withers of Big Systems Software). I felt as if I had received two programs in one when I made that pleasant discovery.

MicroTerm has another useful program—FILECONV/CMD. This program converts practically any file in *any* format into ASCII format so that MicroTerm can transmit it. There is one catch, however. MicroTerm must be waiting at the other end to decode the transmission.

EASE OF USE: The commands in MicroTerm are easy to use—most of them require only one keystroke. MicroTerm itself is simple to use since it is menu driven.

ERROR HANDLING: There isn't much I can say about error handling on MicroTerm 1.1 because I encountered no errors while using it. I can say, however, that because MicroTerm does verify data as it comes over the telephone line, no errors in data will be present.

DOCUMENTATION: The leather-bound 80-page manual that comes with MicroTerm 1.1 is easy to read. Because of many examples, commands are easier to understand, and every command is explained thoroughly. Any person, even a novice at computer communications, would have no problem understanding how to use MicroTerm if he read the manual thoroughly.

For technical-minded computer users, Micro Systems Software has included a technical section on MicroTerm, listing things such as control codes, contents of disk sectors and so on.

SUPPORT: Micro Systems Software is well known for its excellent product support. MicroTerm comes with a registration card and a phone number in case you have any trouble using the program itself. Also, you can back up the disk containing MicroTerm as often as you like, so you are in no danger of accidentally "zapping" a disk beyond repair.

SUMMARY: You can guess that I like MicroTerm. It is rare that I praise a program as much as I have this one, but I do find it refreshing to see a program with excellent documentation, good support and exciting new features.

I highly recommend MicroTerm 1.1 to any person who has a TRS-80 Model I or III, and a modem, even if you already have terminal programs. ■

InfoWorld

Software Report Card

MicroTerm 1.1

	Poor	*Fair*	*Good*	*Excellent*
Performance	☐	☐	☐	☒
Documentation	☐	☐	☐	☒
Ease of Use	☐	☐	☐	☒
Error Handling	☐	☐	☒	☐

System Requirements

- TRS-80 Model I or III
- 16K RAM
- One disk drive
- Modem

Price: ***$79.85***

Micro Systems Software, Inc.
4301-18 Oak Circle
Boca Raton, FL 33431

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BASESCRIPT

An Entirely New Concept In Work Processsing Packaging

Speedy • Reliable • Easy to Use • Flexible

A FULL FEATURED LETTER PROCESSOR

Some of the features of the letter processor are: Ease of use (built in help command available during editing). Automatic word spillover correction. Automatic centering and margins. Left and/or right justification. Page numbering and headers. Columnar math functions within the word processor. Memory remaining report. Character, line, and block insertion/deletion. Continuous or pause between sheet printing. Written in basic with embedded machine code routines. (Gives both ease of modification and machine language speed.)

A MAIL MERGE PROGRAM

To produce multiple personalized letters, the mail merge program automatically inserts data into form letters created using the word processing program. Data can be supplied by the computer directly from the mailing list or manually from the keyboard. In the computer supplied mode, discrimination can be made in the printing selection by zip code and/or any combination of the eight user defined sublist categories.

A COMPLETE MAILING LIST SYSTEM

The mailing list system is a complete and flexible system designed to be used with the mail merge program to produce multiple personalized letters. The mailing list system also includes a program to print labels and/or envelopes . . . it can also be used as a stand alone mailing list which is user defineable into eight separate lists. Single menu add, delete, change and inquire functions. Supports numeric and/or alpha numeric zip codes.

making a name for itself.

A FORMS PROGRAM

It takes form documents created with the word processing program and allows fast fill out, update, and printing of the forms using an automatic insertion point seek routine.

ALL OF THE ABOVE PROGRAMS

are contained on one 5 inch diskette and will operate under Dos Plus 3.4 or 4.0 running on Models I and III and on LNW80 Microcomputers. The complete package, including a hard bound forty plus page manual sells for **$99.95** to existing Dos Plus owners, or for **$229.95** including a complete Dos Plus 3.4 operating system.

Postage and handling $2.50
Out of U.S. $10.00
Florida Residents add 5% sales tax.
Dealer inquiries invited.

New releases coming approximately Jan. 1, 1983: Inventory, Accounts Receivable/ Payable, General Ledger , Vending Management, Real Estate Relocation, Contracting.

FLORIDA MICRO COMPUTER SYSTEMS
8106 Rose Marie Circle Boynton Beach, FL 33437 **305-737-9626**

Why use a Word Processor?

by Chuck Tesler

Introduction

"Why use a Word Processor?" is a question I haven't been asked in at least a dozen years. The usual question is, "Which Word Processor should I use?", because the people I've dealt with either knew the answer to "Why?", or figured that, since everyone else was getting one, they should, too. So, when Mark Lautenschlager of Micro-Systems Software, Inc. asked me to write a short article on the "Why?" of Word Processing, he raised the more interesting, and less disputable, of the two questions.

Reasons For Using A Word Processor

There are two primary reasons for using a Word Processor. The first one is pretty obvious: it will save you time, and that reason, all by itself, will more than justify the initial investment in money and learning. The second reason, however, is even more important: a Word Processor can change the way you write, and thereby improve the quality of your writing, not just the quantity. This is due partly to the incredible flexibility a Word Processor gives, partly to the tremendous amount of time that is saved, and partly to the avoidance of boring, repetitive, mechanical tasks such as re-typing a page because two words have been changed.

Let me give a simple example of this. Suppose you've written a 10-page paper (a sales proposal, a term paper, or a magazine article), and now it's Sunday night, and the paper is due first thing Monday morning. (I realize this is unrealistic, since no one except me would wait until the last minute to complete something important. However, please humor me a moment longer.) As you're proof-reading the final copy, you find, to your horror, that you've omitted a key sentence from the Introduction. What will you do? If you hand the paper in as-is, a major part of its impact will be lost. To add the sentence, you'll have to re-type the entire paper, since everything after that introduction will have to move down three lines, and then onto the next page, etc. At your normal typing speed, this will take several hours. If you're in business, and think you can just give it to your secretary in the morning, you might have to arrange for him/her to be in a couple of hours early.

If the paper was prepared on a typewriter, you've got a real problem on your hands. However, if it was done on a Word Processor, there's no problem at all: you can just put the diskette back in the computer, and in 1-2 minutes, have made the change. Then, it'll take 5-15 minutes to reprint the entire 10 pages, depending on the speed of your printer. During that time, you can do something else.

This example only showed how you can save time by using a Word Processor. Now, let's extend the idea a bit. If you have to do some research before writing a paper, and have a month in which to complete the project, you'll probably plan to divide your time between researching, analyzing, outlining, writing, and revising. Having gone through this many times until the late 1960's (I was lucky enough to start using an early Word Processor afterwards, and haven't done things the old way since), I'd estimate that at least a third of the time would have to be set aside for the outlining, writing, and revision steps. I'd also be willing to bet that the last few days of the month would be spent under considerable pressure (arterial as well as psychological and financial), with frequent vows to allow more time on the next project.

However, if the paper could be done with a Word Processor, a lot more time could be spent in

researching and analyzing the results of that research, since you'd be secure in the knowledge that the actual writing and cleaning up will take very little time. Consequently, you'll be able to produce a higher quality result, possibly discovering some things you otherwise would have missed.

By the way, if you're thinking that your own writing is limited to memos and letters, so that none of this applies to you, please read on; I'll talk about letters later on.

Writing With A Word Processor

(Some of this section is based on material written by Bruce Powel Douglass of A Priori Software).

To write something of any length or complexity requires planning, and one of the best ways to plan is through the use of an outline. If an outline is written on paper, it quickly will show erasures, cross-outs, and arrows. This is a time-honored way of developing one's thoughts, ensuring that all important topics will be covered, and then arranging those topics in the most effective order. For example, the outline of this article was:

1. purpose - what should this paper accomplish?
2. introduction - how paper came to be written
3. reasons for using a W.P. - give examples
4. writing with a W.P. - follow BPD's approach
5. using a W.P. for form letters
6. spelling checkers
7. micros versus dedicated word processing stations
8. summary

Actually, the original outline was not nearly this orderly, and had it been on paper, the erasures, etc., would show clearly. Since it was done with a Word Processor, the changes and improvements were made with casual ease, and rather than wasting time, merely reflected the evolution of my thoughts. Not only was there a time savings, but also a better final result. Example: after finishing one draft, I decided to mention Spelling Checkers. All I had to do was write these additional sentences, add a new item #6 to the outline, and then write the relevant paragraphs. There was no hesitation in making and implementing this decision. Why should there have been? After all, it didn't mean I'd have to retype anything, let alone the whole paper!

If this outline had been on paper, the next step would have been to take a fresh sheet of paper, copy the first item ("introduction"), and either fill in some additional details, or else start writing what I thought belonged in the introduction. The point here is that it would have taken some time to recopy each thing from the first step of the outline to the next step, and during the time it took to make that mechanical transfer, I could not have been giving full concentration to what I wanted to say in the introduction. I'd have been paying so much attention to the mechanics, and trying so hard to avoid making mistakes, that I'd likely have lost my train of thought on complex or subtle issues.

Since the outline was on the screen of my computer, and controlled by a Word Processor, all I had to do was hit a couple of keys, open up some space between the lines, and fill in additional detail. Moreover, whenever it became clear that material belonged elsewhere, it took only a few seconds to tell the Word Processor to move those lines to where it seemed they should go. That made it simple for me to re-read the material in its new context, and then to decide whether it really was better off in the new location. If not, it could be moved again, deleted, or modified, until I was satisfied. No effort, just results.

Because all of this took only a few seconds, I never hesitated to make

these kinds of changes. However, if I'd been writing with pencil and paper, the sheer effort of doing cut and paste would have limited my ambition, and I would have settled for whatever could be done in the time available.

Another, unanticipated method of writing emerges when using a Word Processor: the ability to skip around without fear of losing one's train of thought. When using paper, writing tends to be done from the beginning to the end. If something has to be added in a completed section, the tendency is to make a note for later on, and then come back to it, trying to remember just what the brilliant idea was. The alternative is to end up with a large pile of small pieces of paper. On the other hand, when using a Word Processor, it takes only a couple of keystrokes to move back, make a change, and then resume. Again, not only is there a substantial time savings, but there also is an improvement in quality.

Form Letters

A lot of what goes into a letter is repetitive. The extreme case is the situation where the same Form Letter has to be sent to several (thousand) people. In an attempt to personalize such letters, computers can be used to place the recipient's name and address in the salutation, and possibly even in the body of the letter. (Short commercial: NEWSCRIPT does this easily. Suggestion: turn off right justification and use a solid-character printer to make the result look typed, not computer-generated.) However, there are many other kinds of letters, and they all can benefit from Word Processing.

The closing of a letter is very standard. Most of mine end like this:

Sincerely,

Chuck Tesler

That is, the indentation, words, and spacing never change. If done on a typewriter, it all has to be typed every time, but with a Word Processor, the signature area can be stored on disk under an easy-to-remember name, such as "SIGN", and then imbedded at the end of every letter. In NEWSCRIPT, this is done as follows:

```
------ the 'SIGN' file ------
 .sk 3
 .in 40
 Sincerely,
 .sk 3
 Chuck Tesler

------ any letter ------
 to hear from you soon.
 .im sign
```

Obviously, it takes much less typing to say '.im sign' than to space down and to the right, and then type all that in every time.

The concept can be extended to what is often called "boilerplate." This term refers to stock sentences, paragraphs, or whole sections of standard material that never change, or need only minor modification when used. If a proposal is typed, the boilerplate (contract terms, product description, etc.) would have to be typed in every time. Even if done by a secretary, it would take time and likely include 'typos' that would have to be proof-read and corrected later.

However, if boilerplate is entered into a Word Processor and then proof-read, it never has to be typed or proofed again. All that's needed to use it is to "imbed" it, just as we did for the signature. If it has to be modified, a copy of the stock material can be modified quickly for the one-time situation.

Using a Spelling Checker

I know two people who can glance at a sheet of paper, and without reading it, instantly point to spelling errors. I don't know how they do it, and I don't have this ability. Fortunately, I have access to a computer program that can do the same thing for me. After this draft is complete, I'll just select the spelling checker option from the Word Processor menu, and it'll show me every word it doesn't recognize. This will take about a minute, maybe less, and the checker will let me correct the words that are wrong, "teach" it the words that it didn't know, and even look words up in its dictionary to make sure I've typed the corrections correctly! The time the correction step takes is limited by how fast I can type, plus about 15 seconds to rewrite the corrected document to disk.

Oh, yes. This spelling checker ("ELECTRIC WEBSTER") also can set up conditional hyphens for me, and the Word Processor ("NEWSCRIPT") will use or discard those conditional hyphens when it formats and prints the article. What do I have to do to make all this happen? Just press the letter "Y" when asked if hyphenation is desired.

Will all spelling errors be corrected? Probably not, because I may tell the checker to accept a misspelled word. Even though the checker called it to my attention, I may be misteaken [sic] in how I believe something is spelled. But, that error will be my fault, not the computer's.

Micros Versus Dedicated Word Processing Machines

What can I say? I'm biased toward micros, of course. But, there are tradeoffs: the dedicated machine probably has a screen that looks like a page of paper (60 lines, 80 or more characters across), a keyboard with lots of special function keys (new paragraph, new page, indent, delete, insert), and a price tag of $10,000-$20,000. The micro has a screen with 16-24 lines, 40-80 characters per line, a general-purpose keyboard, and a price tag of $2,000-$4,000. A Word Processing program for the micro must be purchased separately, and may cost up to $500, although $200 is more normal (NEWSCRIPT is badly underpriced).

There are other considerations. The dedicated work station only can do Word Processing; if you want something to handle accounting or spread sheets, you'll still have to buy a micro or a mini. If you only bought the micro, it could do all these jobs for you, since micros are classified as "general-purpose" machines. You could even move information between the spread sheet and the Word Processor (in most cases), since both would be on the same computer. Finally, the Word Processing program for the micro can compensate for the limited keyboard, leaving only the drawback of the small screen. The major remaining tradeoff is the convenience of seeing a full page of text on the screen all at once, versus saving $7,000-$17,000.

Summary

The power of a computer lies not just in its ability to store information, but in its flexibility for retrieving and restructuring that information once entered. Properly used, a computer can become an extension of the human mind, providing the mass storage of dull facts, the rapid retrieval of them, the lightning fast and accurate calculations, and the presentation of results in visual form. This gives us time to think and be creative, without becoming bogged down in the mechanics of storing and searching, counting and writing, correcting and revising. People are very good at being creative, and computers are very good at rote tasks.

It seems like a fair way to divide the work.

Questions & Answers

by Todd N. Tolhurst

Questions appearing in this column are representative of the questions received at Micro-Systems Software Technical Support. Specific questions should be directed to:

Micro-Systems Software, Inc.
Technical Support Division
4301-18 Oak Circle
Boca Raton, FL 33431

Q: I use the CMD"SR" (global search and replace) feature a great deal when programming in BASIC. However, I sometimes need to search and/or replace text containing the double quote marks," ". How can I do this using CMD"SR"?

A: As you know, the general syntax for the CMD"SR" function is as follows:

CMD"SR",[string exp1],[string exp2]

where [string exp1] is the string expression for which to search, and [string exp2] is the string expression with which exp1 is replaced. Notice the term **expression.** A string expression is more than just a string **literal,** such as "John Jones". A string expression can be composed of all sorts of string functions, such as:

CHR$(7)+"JOHN JONES"+STRING$(32,46)

Using this fact, you can search for and replace with the double double quote character with CMD"SR". For example, if you wished to replace every occurance of the string:

"Price: " with: "Cost: "

you could use the global search and replace utility like this:

CMD"SR",CHR$(34)+"Price: "+CHR$(34),
CHR$(34)+"Cost: "+CHR$(34)

The CHR$(34) is the BASIC expression for the double quote character.

Q: I have a TRS-80 Model I and the Radio Shack double density adapter kit. I use DOSPLUS 3.4D/RS most of the time, but sometimes I use TRSDOS 2.7DD. Is there any way I can move programs from 2.7DD to DOSPLUS 3.4D/RS?

A: Yes. First, you must use TRSDOS 2.7DD to move your program or data file onto a single density TRSDOS 2.3 system or data diskette. Once you have accomplished that, you may boot the DOSPLUS 3.4D/RS system in the computer and copy the programs or files from the TRSDOS 2.3 diskette onto DOSPLUS.

Q: I own a TRS-80 Model II and I've been using DOSPLUS II for several months. I'd like to attach a terminal to the Model II and operate the Model II from a location about 50 feet away from the computer. I think this can be done with DOSPLUS II, but I don't know how.

A: You're correct, it can be done with DOSPLUS II. The first thing you'll need is something called a "null modem", which is available from Radio Shack. Of course, you'll also need enough RS232 cable to reach from the Model II to your terminal. To set DOSPLUS II up to operate in this "host" mode, first set your RS232 to the proper baud rate, word length, parity, and number of stop bits with the SETCOM command. Then just execute the following commands:

LINK @KI @CB
LINK @DO @CB

If you attach the terminal to serial port B, you can now operate your Model II from a remote location. Serial port A can also be used if you adjust the LINK commands to reflect the change.

The LINKs may be disabled by the following commands:

LINK @KI @KI
LINK @DO @DO

MicroTerm 1.4

If you own MicroTerm version 1.1, 1.2, or 1.3, we have a gift for you: All MicroTerm owners will be upgraded free of charge to MicroTerm 1.4. MicroTerm 1.4 has everything the earlier versions did, plus:

* 10 MacroKeys. Transmit up to 64 characters with a single keystroke.
* Screen printer
* Four new translation tables: Buffer input, buffer output, RS232 input, RS232 output. Of course, the three original tables are still included: Display output, keyboard input, printer output.
* True break generation.

. . . and much more (like a brand new, very complete manual)! To upgrade your MicroTerm, just mail your Master MicroTerm diskette to:

Micro-Systems Software, Inc.
4301-18 Oak Circle
Boca Raton, FL 33431

Please enclose a short letter requesting the upgrade.

DOSPLUS News Information Center Advertising Rates & Policy

Since many subscribers to the DOSPLUS News Information Center are engaged in the business of marketing microcomputer hardware or software, we'd like to take this opportunity to bring you some facts concerning advertising in this publication.

The DOSPLUS News Information Center is a bimonthly publication provided by Micro-Systems Software, Inc. as a service to its customers. Each issue is mailed free of charge to over 10,000 Micro-Systems Software customers, and contains articles and other information of interest to owners of DOSPLUS, DOSPLUS II, MicroTerm, MICRO-80, and other fine Micro-Systems products.

Advertisers can expect exceptional response to ads placed in the DOSPLUS News Information Center. And it's not surprising. When a firm places an ad with one of the larger TRS-80 computing magazines, it is assured a large readership, to be sure. Unfortunately, only a small percentage of those readers are likely to be prospective buyers of any particular product.

The DOSPLUS News Information Center is another story. Obviously, our circulation is much smaller. Less obvious is the fact that each and every customer on our mailing list is "pre-qualified"; that is, every reader owns a TRS-80 microcomputer, and the DOSPLUS disk operating system or other advanced Micro-Systems product. This says a lot about our readers: They are the above-average computer users who both appreciates and purchases high-quality hardware and software. In other words, this is the market that will produce the most results for your advertising dollar.

The following rate card details the DOSPLUS News Information Center's advertising rates and policies. If you have any questions, please call the Business Office at (305) 391-5033.

DOSPLUS News Information Center Rate Card

Color Ads

Full page only.

Insertions	Rate/Insertion
1	$600.00
2-5	$480.00
6	$390.00

Cover Placement: $100.00

Black & White

Full page

Insertions	Rate/Insertion
1	$500.00
2-5	$400.00
6	$325.00

Half page

Insertions	Rate/Insertion
1	$350.00
2-5	$280.00
6	$228.00

Quarter page

Insertions	Rate/Insertion
1	$200.00
2-5	$160.00
6	$130.00

All B & W artwork must be camera ready, proper size. Color separations must be provided for color ads. Deadline for ad copy is the first day of the month preceding the issue cover date. For example, the deadline for the Jan/Feb issue is December 1.

DOSPLUS News Information Center to offer classified advertising

Beginning next month, the DOSPLUS News Information Center will carry classified advertisments. This new feature will provide inexpensive advertisment for you, our readers. With classifieds, you can sell used computer (or other) equipment, software, etc., or you can let others know what merchandise you would like to buy.

DOSPLUS News Information Center classifieds are quite a bargain too. For $10.00, you may place an ad up to 100 words in length.

Deadline for classified ads is the 15th day of the month preceding the cover date of the issue. For example, the deadline for the Jan/Feb issue is December 15.

To place an ad, send your ad copy and payment to:

DOSPLUS News Information Center
4301-18 Oak Circle
Boca Raton, FL 33431

ATTN: Classified

Log off

by Mark R. Lautenschlager
Editor-in-Chief

LNW User's Group

There is a national LNW user's group located in Yaphank, NY. Those of you who own one of the fine LNW computers may be interested in joining. They plan a newsletter and are operating a national LNW BBS for exchange of information and ideas or programming and building the LNWs. Dues are $25.00 per year.

To join, contact :

LNW User Group
244 Mill Road
Yaphank, NY 11980
BBS # : 516 924-8115

Update on MicroNet support

Many of you have taken advantage of the DOSPLUS support now available on MicroNet through PowerSOFT's popular Xtra-80 SIG. However, there have been some delays.

We do NOT enter these one at a time as they come in. They are processed in batches and all registrations must be verified before they are submitted for access.

Typically, this can take from one to two weeks. Sometimes it may require three. Please be patient.

Crystal Ball Department

We have been working on a DOSPLUS 3.50, it is not just a rumor. The system has been placed into its testing phase and soon shall be ready for general Beta testing and release.

The details will be provided in a direct mail flyer that will be sent to you. This will also serve as a form that you can fill out and return for your new system.

The announcements should leave February the 1st and we should start mailing upgrades on the 15th. The upgrade price for standard upgrades (3.4 to 3.50, same machine) will be $30. For non-standard upgrades (3.3 to 3.50, Model I to Model III, etc.), the price will be $50. Please do NOT send in money early. We cannot be responsible for any funds that are sent in here without specific authorization or an upgrade form.

The upgrade will include the new system (including backup disk), a new vinyl leather-grain binder, and the new 400 page (approx.) user's guide.

Advertising reps wanted

The DOSPLUS NEWS INFORMATION CENTER is seeking free lance advertising representatives to aid in the soliciting of ads for the newsletter. Interested parties, please contact :

Larry Studdard, President
Micro-Systems Software Inc.
4301-18 Oak Circle
Boca Raton, FL 33431
(305) 983-3390

Connection Terminated

Well, once again, it is time to say farewell. At least until the next issue. Keep those cards and letters coming and until next time, remember :

This is DOSPLUS country!!!

Mark

ACEMAIL

The Evolution of Low-Cost Electronic Communications

We believe AceMail is probably the most powerful, automated two-way message system available for anywhere near the price. But don't let the price fool you.

The Automated Computer Electronic Mail software offers some unprecedented clout in communications across the phone lines. From a completely unattended TRS-80, AceMail can look up a phone number, dial it, log/on to the system, upload and download ASCII files, log/off and wait until later to call another computer. You may also call AceMail from a remote location and exchange information.

A world of information is at your fingertips as AceMail offers speed and accountability in accessing branch office correspondence, sales reports, data banks and time sharing systems nationwide.

The multifunctional system is easy to use and comes with a complete users manual allowing even the inexperienced user to send and receive electronic mail in minutes!

If your TRS-80 is due to evolve in the world of electronic mail, then choose the communications system with ease and power—AceMail.

Written exclusively for the Hayes Stack Smartmodems and the TRS-80 Model I/III 48K with disk. AceMail operates on NEWDOS/80 or DOSPLUS and comes supplied on 'tiny' DOSPLUS ready to run.

Hayes Stack Smartmodem 1200—$619.00
Hayes Stack Smartmodem 300—$239.00
ACEMAIL 1200 Software—$119.00
ACEMAIL 300 Software—$79.00

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1640 n.w. 3rd street, deerfield beach, florida 33441 voice (305) 427-1257 data (305) 427-6300

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DOSPLUS 4.0, the perfect score.

The DOSPLUS 4.0 hard drive system is here!

A hard drive without the dynamic new DOSPLUS 4.0 is like an eggshell without the egg. The new DOSPLUS 4.0 is the leading edge—the latest in the line of advanced disk operating systems from MICRO-SYSTEMS SOFTWARE, INC. It's the only current operating system written from the ground up for hard disk operation. Not just a driver but a fully developed system. What that means to you is more bang for your buck! Finally an unlimited TRS-80 for small business. For only **$1899** you get the DOSPLUS "PLUS."

THE DOSPLUS 4.0 FEATURES

- Single volume addressing/Double sided floppies seen as one drive–one file can expand to limit of the hard drive
- Hard Disk—disk editing utilities
- Incredible I/O speed
- Runs any combination of densities or tracks
- Also operates 8'' drives with special hardware—comes with expanded users guide and complete DOS technical section on I/O calls and DCB organization
- Ability to use hard drive as the "system" drive.

"PLUS" MANY OF THE SENSATIONAL NEW DOSPLUS 3.4 FEATURES

- BASIC array sort—multi key, multi array
- Tape/Disk—Disk/Tape utility (with relocator)
- Input (controlled screen input)
- Random access and ASCII modification on Diskdump
- BASIC checks for active "DO"
- Backup and Format from a "DO" file
- Much improved Backup (More reliable)

$1899 TAKE YOUR MICRO TO THE MAX. ORDER NOW!

COMPLETE WITH 5 MEG SYSTEM.

- I/O package much faster (disk access time reduced)
- Repeat last DOS command with ''/'' [ENTER]
- Short directory (filename and extension) available
- Short directory of Model III TRSDOS disks
- Single file convert from Model III TRSDOS
- COMPLETE device routing supported (DOS and BASIC)
- Ability to save BASIC programs directly to another machines' memory (if equipped with DOSPLUS 3.4)

NOTE: The final versions of 3.4 and 4.0 will have almost identical features and documentation.

THE COMPLETE SYSTEM

- Smooth, silent, swift
- Error-free disk I/O
- *Add on up to 4, 10 meg units for a total of 40 megabytes!
- Plugs on the 50 pin data bus.—no loss of floppy drives
- Completely self-contained—just plug it in and go

*10 meg units available Soon.

NOTE: Specify 40 or 80 track when ordering DOS diskette. After initial bootup, user can create any DOS desired.

The first in the industry backed by a lifetime warranty**

**Lifetime warranty on original media

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