

May/June, 1982

DOSPLUS NEWS INFORMATION CENTER





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Introduction

Welcome to issue #3 of the DOSPLUS NEWS INFORMATION CENTER. For those of you that aren't quite certain what month this is, this is the May/June issue, and unless we are really behind, it must be close to one of those two months.

Last time we promised you an item you didn't get. Sorry about that, folks. Let me assure you, the patch for Percom controller boards is in this issue.

Also in this issue are the long-awaited patches for Radio Shack's COBOL to make it work correctly on the Model I. Also hand in hand with that are patches to Radio Shack's new Model III Check Writer 80. Bill Fruit (our Texan connection) tells us how to make this program run on Model I DOSPLUS 3.4D.

My lead article this month covers SYSGEN. We have had a fair amount of questions on that, and I thought it was time for a detailed discussion of the utility. Todd Tolhurst officially premieres his column "Random Routines" with a very useful screen-to-printer linker for use even under TBASIC.

Please send any submissions for the newsletter to :

DOSPLUS NEWS INFORMATION CENTER
c/o Micro-Systems Software Inc.
4301-18 Oak Circle
Boca Raton, FL 33431

We have some good information for you in the New Products on some of the programs written to run with DOSPLUS. We also have a guest article by Renato Reyes and Dennis Brent of Powersoft.

If you're new to DOSPLUS, welcome aboard! If you're one of the "old-timers", it's nice to see you again. Remember, this is YOUR newsletter. Write me a letter if you want to see something in here. I'm always interested in ideas as to what to discuss in the lead article. Tell us how you think we're doing. Write to me at the address above.

Mark R. Lautenschlager
Editor

DOSPLUS and non-standard hardware.....

or

How do I use this SYSGEN?

This subject is one that I almost hesitate to get into, because there is so much that needs to be covered. I guess a good place to start is :

Hardware -

Hardware is interesting stuff. It falls into two categories, standard and "everything else". Who sets what is standard? Who else. Mighty Tandy. As with any computer, the manufacturer sets the standard. It is not necessarily always the BEST, but it is the standard.

Remember 35 track drives? When Tandy first released the Model I, it had 35 track single density drives (although many of them could and are running double density). Later Tandy started using 40 track drives that were capable of double density by design instead of accident. But TRSDOS 2.3 could only work with 35 track drives. Therefore, you were still limited to 35 tracks.

The neat thing about 35 and 40 track drives is that they use the same TPI. TPI is a fancy abbreviation for Tracks Per Inch. It refers to how many tracks the drive will write in one inch of media space. 35 and 40 track drives both use a TPI density of 48. That means they can read each other's disks without too much problem. The only true area of incompatibility is when you try to read the last 4 or 5 tracks of a 40 track disk in a 35 track drive. This produces a nerve-wracking phenomenon known as "beating the head against the stops". If you haven't heard it, you aren't missing anything.

To get on with the story, what this all means is that 35 track drives are the standard on the Model I. Whether single or double density, we have to ship on 35 track media. We cannot afford, as neither can anyone else, to ignore and penalize all the Model I owners out there who have 35 track drives. Their only crime was buying first.

This was the first problem we faced. What do I do for a person who wants to use the last five tracks of his drive. How does he KNOW he has a 40 track drive?

First let's deal with discovering a 40 track drive sleeping inside your Radio Shack case. If the drive you have clicks when it comes on and runs real nice and quiet, it is a 35 track drive. It may or may not work double density. In any case, it is not going to step faster than 20ms. If the drive you have DOESN'T click when it comes on and tends to rattle a whole lot while it is running, then you have a 40 track drive. These drives are almost always capable of double density. They will also step at 6ms. I personally don't step them past 12ms on the Model I, but they are rated at 6.

Now let's say you have a couple of 40 track drives and I have sent you a 35 track DOSPLUS. What do I do for you? Well, it is very simple to make a 40 track DOSPLUS.

Format a blank diskette to 40 tracks. Then backup your 35 track DOSPLUS master to it. When it tells you that the diskette contains data and asks if you wish to use it, answer with a "Y" (or "U"). This tells DOSPLUS to use the existing format on the destination disk, if possible. It will then proceed with the backup. It will copy over any allocated granules from the DOSPLUS master onto the first 35 tracks of the diskette you formatted. But it will not destroy or remove in any way the last 5. You will be left, when done, with a working 40 track DOSPLUS master disk. Use this as you would your DOSPLUS master. Simple, huh?

On the Model III, it was easy. From day one, Radio Shack sold them with 40 track drives. So we send out all Model III DOSPLUS' on 40 track disks.

Then came "everything else" hardware. The dreaded non-standard. First there was 80 track drives and shortly 80 track double headed. Let me set the record straight. I both like, and use, 80 track disk drives. I even like some double headed drives (the earlier ones were rough, but the later drives seem O.K.). For the man who needs storage in a dedicated situation, I recommend 80 track drives.

BUT!!!! Remember that neat thing about 35 and 40 track drives? It is not true for 40 and 80 track drives. 80 track drives use a TPI of 96. Exactly double of a 40 track drive (almost like 80 is exactly double of 40. Very good, class!). This means that if your computer has an 80 track drive 0, it must have a diskette formatted at 96 TPI to ever boot at all.

Because of that, we have to request that information when ordering. It is true that DOSPLUS runs any kind and variety of disk drive, but we have to get DOSPLUS to boot in the first place. Once DOSPLUS is up and running, you may use it to run any type of disk drive.

What about the user who has several different machines and simply wants to make a system disk that takes advantage of his double headed drive, etc? Glad you asked. That brings me to point of this article. SYSGEN. SYSGEN stands for SYStem GENERator. And that moves us from hardware to :

Software -

Software also falls into the same two categories, standard and "everything else". What is standard? Right again, TRSDOS is the standard. If a program is "standard", it will work with TRSDOS. This has to be the case, due to the fact that Radio Shack still sells more TRS-80s than anyone else and every machine they sell gets a TRSDOS for free.

However, standard TRSDOS only runs standard hardware. If you have 80 track drives or double headed drives or anything other than what Radio Shack sells, you are out of luck where TRSDOS is concerned. That is where DOSPLUS comes in. We fill in that gap.

DOSPLUS is not only compatible with the standard, but will also run the "everything else". We are proud of our compatibility. We make every effort to insure that the user that only wishes to replace TRSDOS with a smoother, faster, and more reliable operating system will have no problems with complex configurations. In addition, we want to be certain that the user who wishes to implement his non-standard hardware via DOSPLUS is likewise not burdened with complex and confusing configurations.

This concept of DOS writing is what led us to pioneer the first TRS-80 DOS that incorporated both Automatic Density Recognition and Automatic Track Count support. When DOSPLUS first reads a disk, it picks up from its own internal system information whether or not the disk is double density and how many tracks are on it. From then on, it will remember that and access the disk accordingly. If you switch diskettes, it will attempt to re-ascertain this data.

However, as stated earlier, in order for DOSPLUS to work its many miracles, you must be able to boot it in your machine first. That means that the diskette must be readable by the ROM bootstrap in whatever sort of drive that drive 0 happens to be. If you attempt to boot a disk formatted by a 40 track drive in an 80 track drive 0, you will be rewarded only with the message "DISK ERROR". That is where SYSGEN comes in.

How do I use SYSGEN?

SYSGEN itself is a fairly simple program to understand. The concept behind SYSGEN is this, if the user is capable for formatting the disk, SYSGEN will turn it into a system disk. That's it. Whatever kind of disk you can format, SYSGEN will put a DOS on. If you had a 40 track DOS, formatted a 35 track disk and SYSGENed it, you would have a 35 track DOSPLUS.

So to use SYSGEN, all you need is hardware. Let's cover making a double headed 80 track system disk as an example. If I had a Model III with two double headed 80 track drives, I would, in order to boot at all, first order an 80 track copy of DOSPLUS. When the diskette arrives, I would be able to boot it up fine. But it is still single sided. I want to do more. This first step is to backup the Master diskette as it is now. Never work with your only copy of the DOS.

Then we want to tell DOSPLUS that drive 1 is double headed. So we put a non-write protected backup of the Master in drive 0 and type :

```
CONFIG :1 (SIDES=2)
```

There is no need to save this as we only need it temporarily. After CONFIGuring the drive, we need to format it. So we call the format utility. As you answer the questions before you format, you will notice one that asks "Number of cylinders (35-96) ?". Since we are formatting an 80 track drive, we answer 80. Once you respond to all needed questions, the DOS will format and verify the disk, locking out any bad granules.

What we have then is a blank diskette that it formatted the way we wish our system disk to be. Now we have to somehow copy the system files to it. That is exactly what SYSGEN does. With the newly formatted disk in drive 1 still, and the same DOS master is drive 0, type :

```
SYSGEN :1
```


Please be certain that you have not changed the configuration for drive 1, as we really want SYSGEN to know the disk is double headed. Once you have entered the above statement, the SYSGEN program header will be displayed and the system files will be copied to the disk specified, in this case the disk in drive one.

Now SYSGEN is well aware of the fact that whatever disk it is working on (unless it is a hard disk) is going to be used as a drive 0 disk. Therefore, if it is SYSGENing a double headed disk, while it is there it sets the SIDES parameter of CONFIG equal to 2 for drive 0. There is no need for you to try to config that yourself. As a matter of fact, CONFIG won't let you set SIDES=2 on drive 0. SYSGEN is the only way to do it.

If you are using SYSGEN to copy the system files to the hard disk, the principle is different. If you wish the CONFIGuration on the hard disk to reflect a double headed drive 0, all you must do is first create a double headed floppy disk and SYSGEN the hard disk from that. That will set SIDES=2 for drive 0 on the hard disk.

Once you have completed copying the system files to the target disk, the drives will stop running and the "DOS PLUS" prompt will be re-displayed. At this point, we have copied all the system files to the specified diskette. the next step is to move all the utility files to this new system disk.

To install these files on the disk we have just SYSGENed, we will use the TRANSFER program. In our example case, I would want to type this :

```
TRANSFER :0 :1 (I)
```

The word "TRANSFER" calls in the transfer program. The first parameter, ":0", is the source drive. The second parameter, ":1", is the destination drive. The final parameter, "(I)", tells TRANSFER that I wish to copy over invisible files from the source disk as well as visible (which is the standard).

Once I have entered this command, the transfer program's header will be displayed and it will copy all non-system files from the disk in drive 0 to the disk in drive 1. It will display the filenames as it is copying them. When it is finished, the "DOS PLUS" prompt will be re-displayed.

At that point I have performed the four steps needed to create a non-standard system diskette. See if you picked them out :

- (1) I configured the drive in the manner that was needed for the format desired. In this case, I set SIDES=2 to format a double sided disk.
- (2) I formatted the diskette. Remember, any disk you can format, SYSGEN will put a system on.
- (3) I SYSGENed the disk. SYSGENing a disk is another way of saying I copied the system files to it. SYSGEN is simply that, a program which allows the user to copy the system files.
- (4) I TRANSFERed the utilities to the disk. Having only the system files on a disk can get to be a real drag the first time you try a FORMAT or BACKUP. Therefore, we copy all of DOSPLUS' utilities, extended library commands (like RESTORE and PURGE), and sample programs to the disk. In effect, we "flesh out" the bare bones of the operating system.

So you see, the principle behind SYSGEN is simple. From time to time, the implementation gets a bit confusing, but as long as you keep in mind what it is you set out to do, you should be alright.

There are a couple of things that the person SYSGENing the hard disk has to do that the floppy user doesn't need to worry about. After you have completed the above four steps, you have two more.

Once the TRANSFER is complete, you would type :

```
CONFIG (SYSTEM=4,SAVE)
```

This is telling DOSPLUS that it should look to drive 4 for its system files. This is used for making the hard drive the system drive. It will speed up overall operation and eliminate the need to keep the floppy disk in drive 0. You may use the drive for on or offloading of programs or data, or whatever you wish. Simply treat it as you would any other data drive. The ",SAVE" in the command tells DOSPLUS to save it to the disk permanently. This parameter will not be picked up until you re-boot, therefore it will have no immediate effect.

Because of this, the next step is to re-boot. This time, when you boot, DOSPLUS picks up the SYSTEM=4 configuration and will boot out onto the hard disk. Now, to set up the hard disk not only as SYSTEM drive, but also as MASTER drive, you would type this :

```
CONFIG (MASTER=4,SAVE)
```

The MASTER drive is the drive that is your default value for those functions that use a default drive. For example, even if your SYSTEM drive is drive 4, if your MASTER is drive 0, every time you enter "DIR" alone it is still going to display the directory on drive 0. All global searches would start at drive 0, etc., etc. You want to get away from this and onto the hard disk forever. If you still want to address the floppies, you may. Simply specify the number of the drive you wish to work with. This merely sets a starting point for the DOS. You will find it most useful when using the hard disk as anything other than a data drive.

Are there any restrictions?

Yes. Two, really. First off, while SYSGEN will compensate for any locked out granules (within reason), it does not want to find any files on the disk it is SYSGENing. If you are going to SYSGEN a drive, do it before you write anything else to the drive. SYSGEN will quit with an error message if you do not.

The second restriction applies to hard disk users only. You may only SYSGEN the first hard disk. Any attempt to SYSGEN a drive past drive 4 will result in an error.

Finally ...

Be aware of a couple of things. First, if you are SYSGENing a floppy disk, SYSGEN will move the directory from whatever track it is on to track 17 (11 hex). All DOSPLUS system disks have their directories on this track. It is totally normal for SYSGEN to do it and you shouldn't be alarmed when it happens.

SYSGEN will put some systems on the front side of a double headed disk and some on the back. Therefore, a double headed DOS may not be used in a single headed drive 0. Several users have tried, but to no avail. Obviously, if the drive cannot read the back side of the disk, the DOS cannot load in its systems. This also is normal.

A single headed disk WILL function in a double headed drive. A double headed drive can be restricted to emulate a single headed unit, but the reverse is not true.

DOSPLUS now views a double headed diskette as one volume. That is, both sides of the disk are parts of the same entity. No "A" and "B" and no separate drive numbers. True and complete wrap-around. Some drive dealers are hard configuring their drives to respond as two physical units. This is great when your DOS cannot handle double headed drives, but it does not allow sophisticated systems like DOSPLUS to use the drive effectively. If this is how your drive is wired, you will either have to :

- (1) Leave all drives configured as single sided and use it as it is now.
- (2) Or, you must return it to the dealer and ask that it be re-configured to recognize side selecting by the software.

I hope this has cleared the air. If you keep all these things in mind, you should be able to make whatever kind of disk you need (as long as you have the correct drive on hand). SYSGEN is a rarely used utility once you have established your system, and because of that, it is one of the programs most often purged from a "working" DOSPLUS, even "in house" here. But when you need to make that special disk for your machine, SYSGEN is a real gem.

- Ed.

Random Routines -
by Todd N. Tolhurst

This column, Random Routines, is intended to be YOUR column. If you've written a useful, novel, or otherwise interesting program, and would like to share it with other DOSPLUS users, submit it to the Newsletter. We can't pay for articles submitted, but if we use your program or article you'll not only be helping your fellow computerists, but you'll also gain that measure of prestige that only becoming a published DOSPLUS Newsletter author can afford (!).

This month's program is a small machine-language utility that allows you to simulate the CMD"Z" function available under Model III TRSDOS. CMD"Z" forces all output to the TRS-80's screen to be duplicated on the printer. Now, this could be accomplished under DOSPLUS 3.4 by using the JOIN *DO *PR command, but the JOIN does not "filter" out undesirable characters to prevent them from reaching the printer. Many video control codes that the TRS-80 is constantly sending to the CRT will have odd effects if they are also sent to the printer. For instance, on an EPSON MX-80, you may find that the printer begins printing in the compressed mode, or on a Line Printer V, all characters may be underlined.

This program eliminates that problem by performing this "filtering" of certain video control codes that may have undesirable effects on the printer.

The program should be typed into an editor/assembler (we used M-ZAL, but anything should work) and assembled under the name CMDZ/CMD. To use the program, just type CMDZ at the DOSPLUS command prompt. The program will load into memory and relocate itself to the top of your computer's available memory.

After the program is loaded, you may turn the printer on and off by using a POKE instruction in BASIC. The following BASIC program illustrates how this may be done:

```
10000 I%=0 : 'define variable
10010 POKE VARPTR(I%),PEEK(&H401E) : 'get driver address
10020 POKE VARPTR(I%)+1,PEEK(&H401F) : 'into variable I%
10030 IF Z% THEN POKE I%,205 ELSE POKE I%,195 : 'enable or disable
CMD"Z"
10040 RETURN
```

This is a subroutine that may be called from within a program. If the variable Z% is non-zero (TRUE), the printer is enabled. If Z% is zero (FALSE), the printer is disabled.

That's all for this month. Send any programs or articles you'd like to contribute to:

DOSPLUS Newsletter
4301-18 Oak Circle
Boca Raton, FL 33431

Program Listing - CMDZ

```

00010 ;
00020 ;      CMD"Z"
00030 ;
00040 HIGH1 EQU 4049H ;MODEL I HIMEM
00050 HIGH3 EQU 4411H ;MODEL III HIMEM
00060 VER EQU 0125H ;MODEL I/III MODEL CHECK
00070 DODCB EQU 401DH ;DISPLAY DCB
00080 PRDCB EQU 4025H ;PRINTER DCB
00090 ;
00100 ;      ORG 5200H
00110 ;
00120 START LD IX,HIGH3 ;ASSUME MODEL III
00130 LD A,(VER) ;CHECK FOR MODEL I OR III
00140 CP 'I' ;MODEL III?
00150 JR Z,START1 ;YES
00160 LD IX,HIGH1 ;GET MODEL I HIMEM INSTEAD
00170 ;
00180 START1 LD L,(IX+0) ;LOAD HIMEM POINTER
00190 LD H,(IX+1) ;INTO HL REG
00200 LD DE,CEND-CMD+1 ;PROGRAM LENGTH
00210 XOR A ;CLEAR CARRY
00220 SBC HL,DE ;CALCULATE NEW HIMEM
00230 ;
00240 LD (IX+0),L ;ADJUST HIMEM
00250 LD (IX+1),H
00260 ;
00270 INC HL ;MOVE UP A BYTE
00280 EX DE,HL ;PLACE PROGRAM START IN DE
00290 ;
00300 PUSH DE ;SAVE PROGRAM START
00310 LD HL,CMD ;PROGRAM BEGINS HERE
00320 LD BC,CEND-CMD+1 ;PROGRAM LENGTH
00330 LDIR ;MOVE PROGRAM INTO HIGH MEMORY
00340 POP DE
00350 ;
00360 LD HL,CMD-CMD+1 ;OFFSET TO *DO DRIVER ADDRESS
00370 ADD HL,DE ;CALC ADDRESS TO MODIFY
00380 PUSH HL ;GET ADDRESS
00390 POP IX ;INTO IX
00400 LD HL,(DODCB+1) ;GET DRIVER
00410 LD (IX+0),L ;INSTALL ADDRESS
00420 LD (IX+1),H
00430 ;
00440 LD HL,CMD3-CMD+1 ;OFFSET TO *PR DRIVER ADDRESS
00450 ADD HL,DE ;CALC ADDRESS TO MODIFY
00460 PUSH HL ;GET ADDRESS
00470 POP IX ;INTO IX
00480 LD HL,(PRDCB+1) ;GET DRIVER
00490 LD (IX+0),L ;INSTALL ADDRESS
00500 LD (IX+1),H
00510 ;

```



```

00520      LD      HL,CMD1-CMD+1      ;OFFSET TO "TABLE" REFERENCE
00530      ADD     HL,DE               ;CALC TABLE REFERENCE ADDRESS
00540      PUSH    HL                 ;GET ADDRESS
00550      POP     IX                 ;INTO IX
00560      LD      HL,TABLE-CMD       ;OFFSET TO BEGINNING OF TABLE
00570      ADD     HL,DE               ;CALC TABLE ADDRESS
00580      LD      (IX+1),L           ;INSTALL REFERENCE
00590      LD      (IX+2),H
00600 ;
00610      LD      IX,DODCB           ;GET DISPLAY DCB ADDRESS IN IX
00620      LD      (IX+1),E           ;PLACE CMD"Z" DRIVER
00630      LD      (IX+2),D           ;ADDRESS INTO DISPLAY DCB
00640 ;
00650      RET                        ;DONE
00660 ;
00670 ;      CMD"Z" DRIVER
00680 ;
00690 CMD     JP      0000H           ;INSTALL *DO DRIVER ADDRESS HERE
00700 ;
00710      LD      A,C                 ;GET DATA TO PRINT
00720 CMD1    LD      IX,TABLE       ;TABLE OF PRINTER CODES TO IGNORE

00730 ;
00740 CMD2    INC     (IX+0)          ;END-OF-TABLE (0) ?
00750      DEC     (IX+0)
00760      JR      Z,CMD3            ;YES
00770      CP      (IX+0)            ;DOES DATA MATCH TABLE ENTRY?
00780      RET     Z                 ;YES - IGNORE IT
00790      INC     IX                ;POINT TO NEXT TABLE ENTRY
00800      JR      CMD2              ;KEEP LOOKING IN TABLE
00810 ;
00820 CMD3    JP      0000H           ;INSERT PRINTER DRIVER ADDRESS
HERE
00830 ;
00840 ;      TABLE OF PRINTER CODES
00850 ;      TO REJECT
00860 ;
00870 TABLE  DEFB     14             ;CURSOR ON
00880      DEFB     15             ;CURSOR OFF
00890      DEFB     27             ;ESCAPE
00900      DEFB     28             ;HOME
00910      DEFB     30             ;CLEAR TO EOL
00920      DEFB     31             ;CLEAR TO EOF
00930 ;
00940 CEND     DEFB     0             ;END-OF-TABLE
00950 ;
00960      END      START

```

Patches, fixes, etc...

This month we have some really interesting stuff. We have patches for the following :

- * Percom controller boards (Model III 3.4)
- * LDOS double density recognition (Model I & III)
- * RUNCOBOL/CMD (Model I)
- * Check Writer 80 (Model I & III)

Percom controller boards

DOSPLUS 3.4 in the Model III comes with the ability to configure for eight inch disk drives. The standard DOSPLUS configuration has been for Micro-Mainframe's FDC-III/C floppy disk controller that has eight inch support hardware in addition to the standard FDC-1793 (it will also work with the older FDC-III/A version). When you configure SIZE=8 on Model III DOSPLUS, that is the controller we expected in the past.

However, certain Percom controllers ALSO have the capacity to support eight inch drives. But not only didn't we work with their eight inch configuration, we couldn't even make a backup using that series board. The backup program would crash with a "Source drive NOT ready!" error even if the drive was indeed ready.

This patch not only will fix DOSPLUS so that it can backup normally on that particular board, but it also alters it so that their eight inch support hardware will be implemented.

Please remember, on a standard Model III with the regular processor speed, you may only run an eight inch drive in the single density mode.

Apply this patch to your DOSPLUS using DISKZAP

Go to the display mode and display :

Track 0F, Sector 03.

Go to the modify mode by pressing "M" and change the following bytes in that sector :

Byte	From	To
====	====	==
75	0F	00
77	30 or 00	20

Because of the far greater number of Percom boards present in Model IIIs as opposed to Micro-Mainframe, DOSPLUS 3.4 is now being shipped with this Percom patch already installed. If you have the Micro-Mainframe board, you will have to reverse the patches. For a Micro-Mainframe controller, you want byte 75 to be a "0F" and byte 77 to be a "30".

LDOS double density recognition

LDOS, a product of Logical Systems Inc., uses a double density format very similar to that of DOSPLUS. In the past, users who have both operating systems have found that they can read/write an LDOS diskette from DOSPLUS the SECOND time they try and access it.

The first time you tried to read an LDOS diskette, DOSPLUS would return with the error "Data record not found during read" because LDOS maintained their bootstrap information in a manner different than ours.

This patch, when installed, will enable DOSPLUS 3.4D and 3.4 III to recognize a double density LDOS disk in the same manner as it recognizes its own. It does not harm our performance within our own system. DOSPLUS will now simply recognize both types of double density disks with the same smooth, automatic efficiency.

Because it is so short and simple (2 bytes) and because it doesn't harm our operation with our own disks (it merely allows us to recognize theirs also), I recommend that all users install this patch. Certainly those of you using both DOSPLUS and LDOS will want to inasmuch as this allows us to be fully compatible with their format as well as ours.

DOSPLUS 3.4D (Model I DDEN)

Apply this patch to your DOSPLUS using **DISKZAP**

Go to the display mode and display :

Track 0F, Sector 08.

Go to the modify mode by pressing "M" and change the following bytes in that sector :

Byte	From	To
====	====	==
5A	86	B1
5B	47	4A

DOSPLUS 3.4 (Model III)

Apply this patch to your DOSPLUS using DISKZAP

Go to the display mode and display :

Track 0F, Sector 07.

Go to the modify mode by pressing "M" and change the following bytes in that sector :

Byte	From	To
====	====	==
D1	5F	8A
D2	47	4A

RUNCOBOL (3.4S and 3.4D)

Radio Shack sells a version of the Ryan-MacFarland COBOL compiler for the TRS-80 Models I and III. In the very first issue of the newsletter, we published patches to RSCOBOL and RUNCOBOL. The editor, CEDIT, didn't require a patch to work on DOSPLUS.

It didn't take long for you COBOL users to point out to us that while the patches were great on the Model III, they had a few problems on the Model I. Although the compiler itself, RSCOBOL, worked fine after patching, the runtime module, RUNCOBOL, locked up and wouldn't accept input.

Bill Fruit of Houston, Texas supplied us with the patches to make RUNCOBOL work on the Model I. For those of you using the program, the RSCOBOL patches will be re-printed here for convenience, but if you have already made them there is no reason to install them again. The patches to RUNCOBOL should be made to a fresh copy of the program.

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- *Sub-scripts, super-scripts, proportional pitch†
- *Generates Table of Contents, sorted Index
- *Allows block graphics, special symbols†
- *Search and replace globally or within a range
- *Block move, copy, delete, insert from other file
- *AUTOSAVE, WHOOPS, DIRECTORY, KILL, REPEAT
- *Based on IBM's "EDGAR" and "SCRIPT" systems
- *Supplied ready-to-run on "tiny" DOSPLUS
- *Easily transferred to NEWDOS, NEWDOS/80, LDOS, TRSDOS
- *Includes handy Quick Reference Card

NEWSSCRIPT CONTROLS THESE PRINTERS:

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- *Centronics 737, 739; Radio Shack L.P. IV, L.P. VIII, Prowriter, Daisy Wheel II, NEC PC-8023A, TEC 8500R, C.I.TOH 8510: Right-justified true proportional printing
- *Good support for: Diablo, Spinwriter, Starwriter, QUME, Microline, Anadex, modified Selectric, standard line printers

NOW AVAILABLE: right-justified true proportional support for Diablo, Spinwriter, Starwriter, and Qume (DaisyWheel Option)**



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"There is a new word processor on the market that will change the way people think about the capabilities of the TRS-80. Imagine a powerful mainframe text editor running on a TRS-80, with virtual compatibility between the two versions...on-going support second to none, with superb documentation." (Jim Klaproth, 80-U.S. JOURNAL February, 1982)

the manual:

"It definitely rates the first '10' given to any documentation reviewed in this column." (A.A. Wicks, COMPUTRONICS, October, 1981)

the software: "An excellent Word Processor" (D.H.); "Absolutely fantastic" (S.E.S.); "You have features that I cannot duplicate on my \$14,000 system" (J.B.)

the support: "Your phone information system and the prompt and courteous staff that you provide to help your clients...are worth the cost of the system." (V.H.H.)

REQUIRED CONFIGURATION: 48K TRS-80 with one disk drive. Specify Model I or Model III.

† Some features work only if your printer has the mechanical capability.

** DaisyWheel proportional is extra-cost option.

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(We didn't say this; Paul Wiener did in 80 Microcomputing, Jan. '81. . .but we sure agree with him!)

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Shipping is included in sales to Canada & U.S.

FOREIGN ORDERS ADD \$10

Apply these patches to your RUNCOBOL using **DISKDUMP**

Type : DISKDUMP RUNCOBOL/CMD and press ENTER

When the first sector is displayed on the screen, type G5B and press ENTER. Sector 5B should now be displayed. Go to the modify mode by pressing "M" and change the following bytes in that sector :

Byte	From	To
====	====	==
88	28	18
9E-A2	2A 13 43 22 B1	21 AA A9 22 13
A8-AD	21 AA A9 22 13 43	3E C3 32 12 43 00

After saving the changes by pressing ENTER, increment the sector by pressing the ";" key. You should now be at sector 5C. Go to the modify mode by pressing "M" and change the following byte in that sector :

Byte	From	To
====	====	==
56	CA	C3

RSCOBOL

This is the actual COBOL compiler. This is simply a re-print of the previous patches. If you had already installed these you do not need to do so again.

Apply these patches to your RSCOBOL using **DISKDUMP**

Type : DISKDUMP RSCOBOL/CMD and press ENTER

After the first sector has been displayed on the screen, type : G5A and press ENTER. Sector 5A should now be displayed. Go to the modify mode by pressing "M" and change the following bytes in that sector :

Byte	From	To
====	====	==
63	C2	00
68-69	F8 9F	00 00

After saving the changes by pressing ENTER, type : G61 and press ENTER. You should now be at sector 61. Go to the modify mode by pressing "M" and change the following bytes in that sector :

Byte	From	To
====	====	==
DC-DE	CD 39 9D	00 00 00

After these patches, Radio Shack's COBOL should run correctly on Model I DOSPLUS.

Check Writer 80

If you have a Model I equipped with a doubler and DOSPLUS 3.4D, you may run Radio Shack's new Check Writer 80 program. You must first copy RUNCOBOL to DOSPLUS and patch it as per the above listing. Then you should install the following patches in the Check Writer 80 program.

Apply these patches to you Check Writer 80 using DISKDUMP

Type : DISKDUMP CW/CMD and press ENTER

After the first sector has been displayed on the screen, go to the modify mode by pressing "M" and change the following bytes in that sector :

Byte	From	To
====	====	==
05	43	42
0A	01	00
20-21	1B 02	67 44
6F-70	70 44	18 43
7E-7F	79 44	21 43
82-84	32 AE 42	00 00 00

Users wishing to use Check Writer 80 on Model III DOSPLUS must first apply the patches for Model III to RUNCOBOL (as listed in the Jan/Feb '82 DOSPLUS NEWS INFORMATION CENTER) and then must install the first two bytes of the above patch to the CW/CMD file (i.e. bytes 05 and 0A must be changed as per the above for Model III). The rest of the patch is for Model I users only.

Once again, thanks to Bill Fruit of Houston, Texas for digging those up for us.

Double headed BACKUP fix

There is an error in the DOSPLUS 3.4/4.0 series backup program on both the TRS-80 Models I and III. When backing up a double headed system disk, it can cause the system to be copied incorrectly.

The problem most often manifests itself as a problem with the SYS10 library commands. To check for the problem, type : FORMS and press ENTER. If DOSPLUS responds with "What ?" instead of the proper information, you have the error is question.

This crash occurred during backup. The problem was serious enough that no patch is possible and the error had to be corrected via a re-assembly of the program. If, and only if you are using DOUBLE HEADED DISK DRIVES, you need to have the BACKUP/CMD program on your DOSPLUS replaced.

Return your Master diskette to :

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

Along with the diskette, enclose a short note telling us that you are using DOSPLUS with double headed disk drives and you want the new BACKUP program.

To see if you already have the corrected backup program, type : BACKUP and press ENTER. If the program header displayed indicates BACKUP ver 3.4.1 or 4.0.1, then you already have the corrected BACKUP and there is no need to return your diskette.

Remember, this bug affects double headed systems only! No users operating with single headed drives need concern themselves with this.

New Product Announcements

This following section will introduce to you several new products designed to run with DOSPLUS 3.4 or 4.0. If you have a program that runs with DOSPLUS, and you wish to see it advertised in this section; the procedure is this :

- (1) Send me a review copy of the program with documentation (only quality software will be displayed here!). This is not necessary if I already have a copy or am familiar with the program.
- (2) Send me a text file containing the advertisement you wish to see printed. I reserve the right to edit any advertisement, but I will never print it in edited form unless you get to see and approve a copy first. Please send a file, as I simply do not have time to re-type a two or more page product description.

Remember, these programs are all certified by the authors or publishers to work with DOSPLUS. We are pleased at the ever greater number of software authors and major publishing houses that are making their programs compatible with DOSPLUS. We are more than happy to provide this space to such businesses to advertise their fine software to all you registered DOSPLUS owners reading this newsletter. You are their best market.

NEW PRODUCT ANNOUNCEMENT from Florida Micro Computer Systems: FMCS, Inc. has just announced the release of its BASESCRIPT(c) word processing/mailling list system, which includes in one complete package: WORD PROCESSING - MAILING LIST - PERSONALIZED LETTER/MAIL MERGE and FORMS PRODUCTION programming. The BASESCRIPT(c) word processing system was written on and exclusively for owners of DOS PLUS(c) 3.4 and 3.3 Models I and III with 48K and 2 disk drives.

The system consists of a BASIC language word processor with imbedded machine code routines (only possible because of the speed and versatility of DOS PLUS(c); a complete and flexible mailing list system (with user definable sublists and name and zip code sorting); a custom document printing program which can merge user or computer selected files from the mailing list to produce multiple personalized documents; and a forms program which allows fast fill out and update of user created form documents. The system is totally integrated to provide all the functions normally obtained only by buying two or more programming packages, yet the price is less than a good quality mailing list system alone.

At \$129.95, the package is affordable to just about any TRS-80(c) owner, and, during this introductory period (through August 31), it is being offered to existing registered DOS PLUS(c) owners at just \$99.95. The BASESCRIPT(c) system comes in a hard cover 3 ring binder, with a 37 page manual (which includes a technical section for those who would like to modify the programming or add their own utilities into the system), and a 5 inch diskette containing the BASESCRIPT(c) programming. In addition, the package is extremely easy to use. Initial experience with the system shows that most people can learn to operate it in well under 1 hour.

The BASESCRIPT(c) word processing system comes with a 15 day money back guarantee, and may be obtained from:

FLORIDA MICRO COMPUTER SYSTEMS, INC.
1631 W. McNAB ROAD
FORT LAUDERDALE, FLORIDA
33309
(305)-971-9300

Scott Adams, Inc. Announces
New Subsidiary and Products

Readers familiar with Adventure International's Maxi Manager data base system will be interested to discover that a complete series of new MAXI business programs for the TRS-80 and IBM Personal Computer will be marketed by THE BUSINESS DIVISION, a subsidiary of Scott Adams, Inc.

Paul Grupp, Director of Product Development for THE BUSINESS DIVISION reports, "People expect a lot from a software house that produces business programs, and our new company will allow us to give it to them. We want the MAXI series to develop a reputation as being nothing but top-quality software. Documentation for new products will contain a tutorial section for inexperienced users, a quick-reference guide for the 'experts', and a complete index".

"All the new programs will be supplied with the Micro Systems Software Inc. TDOS operating system," Grupp asserts. "Experience has proven that it's an operating system we can trust--so much so that we are not particularly concerned with making our programs compatible with other operating systems".

What are the new products?

Maxi CRAS

Available now for the TRS-80 Mod I and III, and July 1st for the IBM PC, Maxi CRAS is a personal or small business Check Register Accounting System written by Dale Kubler. "Maxi CRAS is an extremely sophisticated system, but it's easy to use", says Grupp. "It supports up to 223 separate income and expense accounts, and can serve as a check register only, or a complete check writing system. There is virtually no limit on how many transactions can be handled, or how many deposits can be made per day. It also incorporates several unique features, including VISICALC-readable data, and the most complete printed reports and summaries available anywhere."

Maxi Mail

To be released July 1st is Maxi Mail, also written by Dale Kubler. Maxi Mail is intended for the user who needs some of the power and flexibility of Maxi Manager, but wants a system that anyone in the office can use. It can handle a virtually unlimited number of names, and easily prints summaries and labels. Best of all, Maxi Mail data can easily be incorporated into "personalized" form letters or reports.

Maxi Manager

As of July 1st, Maxi Manager has several improvements. A new SORT program speeds up sorts by at least 30%. Three new utility programs add unique features not found in any other data base software on the market today. The first program, RECOVER, recovers Key Files damaged by disk I/O problems, dirty drive heads, and other hardware problems. It also rebuilds spare idle linked lists. The other two programs, EXTRACT and MERGE, allow users to add new fields and delete old ones from an existing data base. In addition, existing fields may be enlarged, rearranged, or given new field attributes. The Maxi Utility programs will be available as a separate package for users who already own a copy of Maxi Manager.

Maxi Statistics

Maxi Statistics, written by David Walonick, is available for the TRS-80 Models I and III, and soon to be released for the IBM PC. Maxi Statistics closely resembles the Mainframe Statistical Package for the Social Sciences, and is one of the best analysis packages on the market.

According to Marketing Director Richard Richmond, there are several other new products currently in the works, and THE BUSINESS DIVISION is always on the lookout for new possibilities. "We are very interested in publishing a good spread-sheet program, or any other high-quality business applications for the IBM PC, TRS-80, or Apple Computers".

For more information, contact THE BUSINESS DIVISION, Box 3435, Longwood, FL 32750.

It is my policy as editor of the DOSPLUS NEWS INFORMATION CENTER to allow articles written by qualified technical writers discussing relevant topics to be printed on these pages. I hope to have many such articles in the future. You users can contribute in this respect. Let me know who you want to hear from and about what. I will attempt to arrange an article. Our first guest column is from Renato Reyes and Dennis Brent of Powersoft.

Diskette Recovery using Super Utility Plus(tm):

Super Utility Plus(tm), by the infatigueable Kim Watt, is THE Utility for diskette recovery, file managing, and numerous other features (over 75) that will be discussed in future issues of this Newsletter in its relationship with the DOSPLUS Operating System. Our subjects this time are....

I. -- Damaged Directories

When the data recorded on a diskette becomes damaged so that the DOSPLUS system can't read it, for most people it's usually panic time. There seems to be an unwritten law which states that the probability of a disk becoming unreadable increases in proportion to the amount of time since the last backup. So when an error message like "Data record not found during read," or, "Attempt to use non-program file as a program", or "CRC Error" appears on your screen, you'll know you should have done a backup.

Backups can save your data and your sanity in many ways. Such errors as occur above can usually be fixed by simply copying over the bad file. But when those error messages appear when DOSPLUS is trying to read the diskette directory -- then you've REALLY got serious problems.

The directory is the most heavily used track on a diskette, and the DOSPLUS system depends on it in order to find where files are stored. Because of the interlocking structure of the directory's GAT table, HIT table and file entries, damage to any one of these can confuse the system no end. If the directory is damaged so that it becomes unreadable to the system, then DOSPLUS essentially cannot function.

Super Utility Plus provides a means of rescuing disks with damaged directories -- IF RECOVERY IS POSSIBLE. The damage may be so great that the disk is totally useless. But in many cases the directory can be recovered. Super Utility Plus (SU+ for short) includes routines for repairing bad directories.

Ia.-- How to Configure SU+ for DOSPLUS

The first thing that you have to do before you even begin a disk recovery operation is to configure SU+ so that it knows what kind of a disk it's looking at. Many new users of SU+ fail to do this and spend endless hours of frustration trying to get the program to work right. (note: SU+ comes out of the package configured for TRSDOS(tm). Worse, an improper configuration can actually do more damage to your disk than what was already there!

On page five of the SU+ manual is a list of DOS specifiers. These are one-letter codes which indicate to SU+ the kind of system which formatted the disk it will be looking at. Going down the list you will see that E, F and G pertain to DOSPLUS systems.

"E" stands for a single-density Model I DOSPLUS disk

"F" stands for a double-density Model I DOSPLUS

"G" stands for a double density Model III DOSPLUS

The first thing you have to do is determine which one of these apply.

The next step is to bring up the SU+ main menu. Then select option 9, "Configure system." This will bring up the configuration display. The top two lines of the display need not concern you if you are working on diskette recovery. The rest of the display does. These pertain to each of the disk drives in your system, and these are what you must configure.

Let's assume you have placed the damaged diskette in drive 0 (there's a good reason for this: it forces you to take out the SU+ disk -- which you no longer need once the program is running -- and put it away in a safe place). By tapping the ENTER key twice, you will move a little indicator on the left of the display down to the line which describes drive 0:

```
=>+:0A=35,  TKS=35,  DIR= 17,  STEP= 3,  DELAY=4/4,  WP=N  
          DENSITY=S,  L-GRANS,  TRACK0=S,  SS=0,  DAM=0
```

This entry does NOT describe a DOSPLUS disk, and must be changed. (It describes a Mod I 35 trk SD TRSDOS(tm).

Here's where a lot of people go wrong. They try to change the configuration data by typing in ":0A=40, TKS=40, ... " etc. And SU+ will reject this. Generally, except for the DOS specifier itself, the only items which need to be entered are THE NUMBERS ON THE RIGHT SIDE OF THE EQUALS (=) SIGN. So if you wanted to reconfigure drive 0 for a 40 track double density DOSPLUS (model I) disk, the only absolutely necessary answers are: F,40,20 (The "20" indicates the location of the directory track; on some earlier versions of DOSPLUS, this will be 17 instead). Each item should be separated from the rest by a comma or space.

If you type in F,40,20 and hit the ENTER key, the display will change to show the following:

```
=>+:0F=40,  TKS= 40,  DIR= 20, STEP=3, DELAY=4/4, WP=N
          DENSITY=D, L-GRANS, TRACK0=S,  SS=0, DAM=0
```

SU+ now knows to expect a double-density Model I DOSPLUS system in drive 0 which is formatted for 40 tracks with the directory on track 20. It will also know that track 0 is formatted in single density (TRACK0=S).

Now you're ready to begin the recovery operation. Hit SHIFT-BREAK to get back to the main SU+ menu and select option 5: Disk Repair. This will bring up a submenu of 10 repair options.

- | | |
|------------------------------|-------------------------|
| 1. Repair GAT Sector | 6. Recover Killed Files |
| 2. Repair HIT Sector | 7. Move Directory |
| 3. Repair BOOT Sector | 8. Display Directory |
| 4. Read Protect Directory | 9. Check Directory |
| 5. Un-read Protect Directory | 0. Clear Unused Entries |

The first thing you want to do is determine the extent of damage to the directory on your disk. So select option 9, "Check directory." This routine will examine your disk's directory and report any errors that it finds.

If the Check directory routine reports GAT or HIT errors, then recovery is as simple as selecting the appropriate options from the repair menu. SU+ will automatically reconstruct the GAT and HIT tables from the directory file entries themselves and rewrite the directory back onto the disk. Once this is done, then the recovery is complete and you once again have a usable DOSPLUS disk.

If the error message is "SECTOR NOT FOUND!", then damage has gone beyond what SU+ can repair (at last automatically). You can still recover the data on that disk, but it will be a long and trying operation. Next time we'll discuss the techniques for doing this.

II -- How to Attempt to Fix a CRC Error

CRC errors are a real pain! Sometimes they come from lack of good data separation. Sometimes disks prepared on one computer cannot be read properly on certain tracks by other drives, thereby creating a CRC error. These are NOT the kind we will discuss here. These are HARDWARE problems. SU+ can fix CRC Errors through a technique called FORMAT WITHOUT ERASE. This is probably the easiest way to fix a CRC error. This is under the FORMAT sub-menu. Make sure that your SU+ is configured for the type DOS format you want to repair. What happens is, SU+ loads a section of bytes into a buffer, reformats a section of your disk, dumps the bytes back onto your disk, and reads some more, formats some more, dumps some more, etc. This is also a REAL good way to "strengthen" older diskettes' data structure. It lays down a good solid new format, while preserving your data.

Just a few little notes... you may "Hard Configure" your SU+ to BOOT UP in the DOSPLUS configuration everytime, if that is what you wish. This is discussed in the manual, and will also be discussed here in the future. Also, using SU+ you may transfer files from any of the popular current DOSes to your DOSPLUS diskettes without having to CONVERT (Mod I or III). Just set one drive configured for DOSPLUS, and one drive configured for "the other DOS". Hit #8 on the MAIN MENU (File Utilities), select COPY FILES, and transfer away!

Super Utility Plus is marketed by PowerSoft, a division of Breeze/QSD, Inc. It is available direct, or from many dealers including Micro Systems Software. The SU+es purchased from Micro Systems will come PRE-CONFIGURED for DOSPLUS I(SD) and DOSPLUS Model III. It just happens to be on sale for \$49.95 until August 31st also!

r. b. reyes
d. a. brent

Gentlemen, thank you. -Ed.

And furthermore...
(The "so there" section)

Well, I hope you've enjoyed this month's DOSPLUS NEWS INFORMATION CENTER. I thought it was perhaps the best issue yet. Before we wrap this up, I wanted to let you know of a new release of an old favorite and a couple of new programs that we are going to be doing.

Chuck Tesler at PROSOFT sent me an update to his NewScript word processor. This new version sports a release number of 7.0 and incorporates the following (among many other new features) :

- * very fast editor - mostly in machine language
- * buffered printing - higher through-put
- * garbage collection virtually eliminated
- * eighteen new control keys for easy editor use
- * "anti-widowing" feature, no more hanging text
- * sorted directory from within TDOS
- * updated TDOS (DOSPLUS kernel), better disk I/O
- * revised, expanded, improved Reference card

Plus many, many other new features and functions. This latest NewScript incorporates many of the suggestions you have been making over the last few months. More powerful and easier to use, primarily due to the vast speed increase, NewScript 7.0 is the best one yet.

Chuck has a special upgrade offer for previous customers. He is sending out special upgrade order forms to all licensed owners. Contact PROSOFT for further details.

Micro-Systems has two brand new programs coming out this summer, **DOSPLUS II** and **MicroTerm**.

DOSPLUS II -

Micro-Systems Software Inc., the leader in TRS-80 operating systems, and Powersoft (a division of Breeze/QSD), long an industry leader in specialized utility programs, combine forces to bring you the most awesome new operating system ever! When the systems staff of Micro-Systems Software works together with Kim Watt of Powersoft, the results can be nothing short of phenomenal. So, coming this summer to a computer dealer near you.....DOSPLUS II!

DOSPLUS II is an operating system for the TRS-80 Model II Microcomputer. It is available in either floppy or hard disk versions. Hard disk support is planned for Radio Shack, VR Data, QuCeS, Micro Mainframe, Corvus, and many other popular sub-systems.

DOSPLUS II is 5 to 10 times faster than the OEM DOS. It provides you with increased hardware compatibility and will offer support for many major "after-market" suppliers of hardware.

Totally compatible with programs written for TRSDOS, it will offer the Model II user a chance to speed up computer processing and increase productivity without giving up his current software.

DOSPLUS II will retail for \$249.95. Dealer inquiries invited. Anticipated release date : July 31, 1982.

MicroTerm -

More and more hardware and communications services are allowing speeds up to 1200 baud. Soon, some may be going faster than that. Today's terminal software simply can't keep up. But now there is an alternative. Micro-Systems Software introduces MicroTerm, the high speed terminal.

Model III MicroTerm will communicate, without insertion of null characters, at 4800 baud. Guaranteed. No cop-outs, no question. MicroTerm is so fast that you can exit from the terminal to the main menu, adjust video width, open the buffer, turn on the printer, or any one of dozens of other functions, and return to the terminal mode without missing a thing!

MicroTerm continues to input from the RS232, even while at the main menu. This is the only terminal capable of such an astounding feat. MicroTerm offers you most of the features that "Brand X" smart terminals have, plus it gives you :

- * Ultra high baud rate operation (up to 9600 in certain cases).
- * Input while at menu.
- * Easy to use translation tables.
- * Easy to use phone number listings.
- * Maximum auto dial support - most major brands.
- * Direct file transfer companion program included at no extra cost (compatible with DFT).
- * DOS commands from menu without exiting program.
- * over 37K of capture buffer (in a 48K TRS-80).

And many, many more great features. MicroTerm is so fast you must see it to believe it. The various menus are displayed so fast, they seem to jump out at you. Status of various functions can be displayed and altered in split seconds.

For the computerist who wants the ultimate, state-of-the art terminal software, there is no other choice.

MicroTerm retails for \$79.95, but registered DOSPLUS owners ordering before August 31, 1982 can purchase it for only \$59.95. \$20.00 off the retail price! MicroTerm comes complete with the terminal program, the direct file transfer program, some standard translation tables, and documentation.

Don't delay, order yours today! Specify when ordering: Model I or III and whether you want it on 40 or 80 track media. Requires a 16K TRS-80 with one disk drive. We recommend 48K for serious communications work. MicroTerm will be available beginning June 30, 1982.

Misc...

I would like to welcome two more hard disk manufacturers to the DOSPLUS 4.0 family :

DOSPLUS 4.0/i - A.M. Electronics
DOSPLUS 4.0/j - Level IV Products

We have more and more assemblers of hard disks calling in every day. DOSPLUS 4.0 is now the standard in Winchester sub-system software for the TRS-80 Models I and III. Soon we will be adapting our new DOSPLUS II to many of these hard disks.

In case you missed it last issue, we have moved into our spacious new offices in Boca Raton. With greater production facilities and expanded office capacity, we hope to be able to serve you ever more efficiently from this new location. The new address is :

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

If you are calling in an order, you may use the toll free order lines from outside the state of Florida. They are : (800) 327-8724. We must restrict these lines to orders or sales related problems only. No technical support people are available to answer that line. Technical support is available at the standard number listed underneath the address above.

Crystal Ball Department

You already know about DOSPLUS II and MicroTerm. Also coming sometime soon is Micro80 Ver. 2.0, the most sophisticated bulletin board system ever made for the TRS-80 Models I and III.

There have been a few questions regarding the new Network 3 educational network controller from Tandy. To clear the air: yes, we did the software.

IBM DOSPLUS is only a matter of time. Look for us also on the Model 16. Any Z80 based microcomputer is fair game. DOSPLUS will be branching out.

That's all for this issue, faithful reader! Until next month, remember, this is DOSPLUS country!!!
-Ed.

II + II = (BUSINESS) (DYNAMICS)

DOSPLUS II and the TRS-80 model II. The Dynamic Duo.

The TRS-80 model II was created to help you take care of your business. DOSPLUS II was created to help your TRS-80 help you and your business even more.

DOSPLUS II replaces your O.E.M. dos with an ultra-sophisticated operating system that is 5 or more times faster, more reliable and is totally compatible with all standard business oriented software designed for use with the model II. The result is a computer/operating system that far exceeds manufacturer's specs—with more potential and more capacity to be of service to you.

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