

TORNO MINIMO

Keeping Models 3 & 4 Alive
Volume 1. No. 4 - July 1988 - \$3.00



LITTLE ORPHAN EIGHTY

It is with great sadness that I have followed the 'goings-on' at 80 Pine Street, the home of 80 Micro.

Approximately eight month ago the wise people in charge had a vision of the future. This vision was full of MS-DOS and did not include the TRS-80, so the decision to change the format of the magazine was made. January of 1988 presented the first 80 Micro without TRS coverage. It was a black day and for most of us, 80 Micro died that day.

The idea of changing the format to MS-DOS, on a pure business level, was not bad. Let's face it, there are a heck of a lot more PC users than there are of us. However, one factor was obviously not considered: The difference in the users' dedication to the two machines. Sure, the PC crowd love their machines, and rightfully so. It is a great computer. BUT they don't seem to love it the same way we love our TRS-80's.

Since there is so much software available for the PC, it inhibits the climate for working with the machine. Instead, most users are happy just employing the programs.

We, on the other hand, were never blessed with this abundance of ready-made software, so we had to cater to our own needs. We had to learn how things worked and this brought us closer to the machine. We hungered for information. Out of this need 80 Micro was born in January of 1980.

Wayne Green knew what made us tick. Give us some hardware mods, peeks & pokes, patches, programming tutorials, etc. Anything that altered for the better the way the machine or a program worked, was met with enthusiasm. We would make the hardware mods, peek, poke and patch to our hearts delight, all while learning Basic and maybe even taking a stab at Assembly language.

This is what made 80 Micro great. It brought enthusiasm, knowledge and hope to the readers and they, in turn, shared their special knowledge back. Though the magazine was 'big-time', it always had the flavor of a club newsletter, albeit a very large one. It was where you went for help if you were stuck.

This format was successful in the TRS-80 world, but in essence became their nemesis. They changed the machine coverage to MS-DOS instead of TRSDOS, but the format still focused on the 'hacker', the one hungry for information. That was a mistake. The majority of the inhabitants of the PC world just doesn't seem to care about peeks, pokes, patches, hardware mods or programming languages. The interest in this type of magazine was low, subscriptions did not come in at the expected rate, and in the June 1988 issue came the announcement that there was no more to come. This was the last one.

**R.I.P.
We loved you.**

On a related subject, the Editor-in-Chief at the time of the MS-DOS transition was Eric Maloney. He immediately took charge of 80 Micro's sister magazine that covered MS-DOS exclusively, PC Resource. It can be reported that, as of the July issue, Eric is no longer on their staff.

LSI deserts the TRS-80

We have just received a letter informing us that LSI will no longer support LS-DOS, nor the TRS-80 in general. They state that they are pursuing 'other interests'.

Now, before you scream, rip out your hair and kick the cat, let it be known that the letter goes on to explain that MISOSYS will take over and give full support.

This turn of events, deserve some comment. We, who are involved in the various TRS-80 clubs in the greater Los Angeles area, were long under the misconception that Roy Soltoff was the 'bad guy' who wrote the alleged protection scheme into LS-DOS 6.3. This, of course, is not the case at all. Roy did not write 6.3., and he certainly did not deserve the harsh criticisms we aimed at him.

Now that we are in real need of a hero, by golly, here he comes riding into town, and it is very plain to see that both the horse and the hat is white.

Thanks Roy, we are sincerely glad you are around.

Model I ?

I have received many letters wanting to know why the Model I was excluded from TRSTimes. The answer is simple. When the magazine was first conceived, I was prepared, if need be, to do everything myself. Since I only own Model III's and 4's, obviously it would be sheer insanity to promise support for a machine that I couldn't produce or verify material for.

Well, a few days ago Charlie Rider of VTUG called my "bluff". He presented me with a large cardboard box. I opened it and, to my surprise, inside was a good looking Model I complete with monitor and two 35 track drives.

"Here", he said, "it only needs an expansion interface. You ought to be able to pick up one fairly easy. Now quit messing around, and do something for the Model I."

Maybe, just maybe!! Thanks Charlie.

And now.....

Welcome to TRSTimes #4

TRSTimes - Volume 1. No. 4. - July 1988

CONTENTS:

LITTLE ORPHAN EIGHTY	2
THE MAIL ROOM	4
TIM'S PD EXPRESS: WORD PROCESSING IN THE PUBLIC DOMAIN.....	6
STATES AND CAPITALS - MODEL 4 GEOGRAPHY GAME	9
MULTIDOS UPDATE.....	11
HOW MICRO-LABS IMPROVES THE QUALITY OF LIFE.....	12
FIXES & ENHANCEMENTS	14
CP/M - THE ALTERNATE DOS FOR MODEL 4.....	15
MASTERKEY	18
HI-REZ CORNER: xT.CAD REVIEWED	24
HUNTING FOR BURIED TREASURE.....	26
CHANGO80/BAS.....	27
PRINT-SHOP & PRINT-MASTER FONTS FOR DOTWRITER	28
ITEMS OF INTEREST.....	29
CLOSE #4	30

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THE MAIL ROOM

File transfer



"COPYAID" on page 7 of the May 1988 issue of TRSTimes is outstanding. It is prized by me not because it allows me to transfer a file from TRSDOS 1.3 format to NEWDOS/80 format, but because it allows the reverse. I want at least one copy of all my important programs on a TRSDOS disk. It is a "common denominator" format for my several computers.

I used to believe that NEWDOS/80 was the only medium by which files on DOS+, LDOS, and MULTIDOS formats could be eventually put onto a TRSDOS 1.3 formatted disk. In other words, first they had to be put onto a NEWDOS formatted disk; only then could they be transferred to a TRSDOS disk by means of P-DRIVE. However, such is not the case.

TRSTimes readers who are under the mistaken impression described above should get a copy of Fred Blechman's article on page 80 of the November 1986 issue of COMPUTER SHOPPER mag. He discusses moving files from a MULTIDOS formatted disk over to a TRSDOS 1.3 formatted disk, without the help of NEWDOS. The only thing that MULTIDOS 1.6 (Model 3) cannot do is write directly onto a TRSDOS 1.3 data disk. Some trick or "plan of attack" is needed. I did not realize that this was possible (without NEWDOS/80) until I read Mr. Blechman's article.

The trick is to use Model 3 MULTIDOS to create/format a TRSDOS 2.3 (Model 1) data disk, then use MULTIDOS to write the files directly onto the Model 1 formatted disk, and finally to remove the MULTIDOS system disk and use TRSDOS 1.3 (Model 3) with its CONVERT utility to bring the files over from the TRSDOS 2.3 data disk to the TRSDOS 1.3 system disk. No NEWDOS needed in this plan of attack!

Perhaps sometime TRSTimes will print an article on "The Strange Format of TRSDOS 1.3 ... Why Did Radio Shack Do It This Way?" KEEP UP THE GOOD WORK!

John E. Tufts II
Claremont, CA

We will ask Fred Blechman for permission to reprint the article you are referring to. We may try something for TRSDOS 1.3. In a future issue. Ed.

Excerpts of a letter from David Goblen

First, thank you for the prompt delivery of the first three issues of TRSTimes. I was keenly interested in Eric Bagal's article on the "LOST POWERS OF SCRIPSIT", because I was beginning to think that I was the only person who knew about the hidden power in the REPEAT command. It is fully documented on my "MODSCRIP" disk, advertised in my PD UPDATE column. MODSCRIP is one HECK of a program. The best feature is that it adds more enhancements than what most people think possible, and yet does not take up one byte of text buffer space. My June column reviews its features. For your interest, my July "Visit With" column will feature a short patch program to SCRIPSIT/LC that will allow it to operate on both a Model I and Model III, allow special print characters, such as [] () _ \ and others EASILY from the keyboard, allow an optional linefeed after a carriage return, and other goodies, such as recognition of the RIGHT SHIFT key as well as the left.

Timothy Sewell's PD column is fascinating. My own ranting about supporting program authors is apparent in my up-coming July PD column, and think it is something that is timely, since piracy is not something that people should take as given, making their own excuses to the effect of "Well, everyone ELSE does it." My favorite pet peeve about people demanding support, but refusing to pay for it, is also aired.

I think that your "HUNTING FOR BURIED TREASURE" column is a hit. In fact, I will expand on some of its features in my August column. One of the things I'll mention is about the only thing that you didn't. And that is that you can have more than 7 top video lines protected. This will work on TRSDOS 6.2, and LS-DOS 6.3.

Oh, by the way, I cannot take FULL credit for being Mercedes Silver. Beve (pronounced Bev) Woodbury and I shared it. I did all the stuff that she couldn't answer right off the top of her head. You may be interested to note that after the demise of 80 MICRO, she retired so that she can finish a book she is writing about painting.

In regard to the protected scheme attributed to LS-DOS; it does not exist, or it doesn't work. I've totally disassembled the DOS, and no such code exists, encrypted or otherwise.

My very best wishes to your magazine's success.
David Goblen
Mansfield Center, CT.

David is a programmer 'extraordinaire' and is one of the people behind the other publication available for the TRS-80, COMPUTER NEWS 80. He is one of the last good and knowledgeable people we have left in the TRS-80 world, so check out his writings and programs.

Ed.

Model 4 Scriptit tips

I had intended to submit an article on Model 4 Scriptit, but when my copy of the March issue of TRSTimes arrived I found I had been beaten to it. The article covered all I had discovered about the program with just a couple of exceptions.

Although the cursor normally moves slowly along and down lines, it CAN be made to move a lot quicker. This is made possible by the use of the SETKI command. So you may like to try the following:

Type in SETKI (RATE = 1, WAIT = 10) < ENTER >

BUT BE WARNED, once you have SYSGEN'ed a disk, it cannot be removed, as far as I know anyway. I use this speed on all my system disks with a full screen editor and squeeze utility and wouldn't be without them. These programs appeared in 80 Micro some time ago, and are to be recommended, the full screen editor can be used from either Basic or DOS modes.

The other point with Scriptit is that it is possible to delete short sentences, paragraphs or just a few words by placing a period (.) immediately after the last character you wish to delete, then move the cursor (the new fast cursor), over the first letter you wish to delete and press < CLEAR > < D > then < X >; the selected characters will disappear like magic!

Barry K Morley
Pudsey
England

Yes, indeed! The cursor now moves at a pretty brisk pace. Thanks for the tips, Barry.

You can remove SYSGEN with the following commands:

SYSGEN (OFF)

or

SYSGEN (NO)

Ed.

Update NATGUG NEWS

In the CLOSE#3 column from the May 1988 issue we listed American subscription rates to the British User Group's Informative publication, NATGUG NEWS as being \$22.50 per year. Unfortunately, this is not so. The correct rate is:

15 pound sterling for surface mail.

21 pound sterling for air mail.

They accept VISA or MasterCard, however, if you pay by check, **make sure it is payable in English currency, not in dollars.** It seems the English banks are becoming as inflexible and expensive as our own. (Oh no, are we really exporting 'Bank of America mentality'?). Do check out NATGUG NEWS. It's worth it.

Ed.

Assembly Language

I have made several attempts to unlock the mysteries of assembly language, so far frustrated and unsuccessful. Tandy's first volume on A.L. programming is out of print, and I have not found another starting at the bottom. I do have an EDTASM copy, but no docs. Can you help me in any way? I would at least like to know how to type in a published program! Sometimes I do get doubts about the advantages and needs for me to go into it. I feel confident in Basic for all my needs. But, I am still curious, and willing to learn something new.

Henry H Herrdegen
Windsor, Ontario
Canada

O.K., you hit a sore spot. There is no reason that assembly language should be as difficult as people make it out to be. The problem is, in my opinion, that the people who teach it do a rotten job. If TRSTimes continues in 1989 (a decision will be made shortly), we will start a series of assembly language tutorials geared to the Basic programmer. So, don't give up.
Ed.

CP/M request

A big thank you to Roy Beck for some good articles about CP/M. I am new to computing, trying to learn and your tutorial on the CONFIG program helped me a lot. You asked for reader requests, so here is mine: Please explain how to use SUBMIT and XSUB.

Carol A. Pietra
Milwaukee, WI

Roy, blushing, thanks you for the kind words.

Ed.

TRSTEXT

The TRSTEXT/BAS program from May doesn't seem to work. I am sure I typed it correctly, but it won't run. What is wrong?

Chris Daniels
Chicago, IL

TRSTEXT/BAS is not a stand-alone program. It is intended to be MERGE'd into TRSDRAW as explained in the article. If you follow the instructions AND type the program correctly, believe me, it works wonders for TRSDRAW.

Ed.



TIM'S PD EXPRESS

Word Processing in The Public Domain

by Timothy Sewell

The SECOND most useful application that my trusty ol' Model 4 is used for is word processing. In between the many hours spent On-Line to various BBS systems and GENie, I do seem to find time to answer a few letters and put together these articles for TRSTIMES. In this issue I will take you on a little tour of what is available in the Public Domain to allow you to manipulate those letters and numbers across your screen into something readable.

Let's start with the TEXT EDITOR. This is the simplest form of manipulating text on your computer. Nothing fancy here just loading the file, editing the file, and saving the edited text to disk.

In my "telephone travels" I have come across several text editors. Most of them do the job at hand just fine but a few do shine above the others:

CHEAPWP/BAS

The 'El Cheapo Word Processor' by Michael Passer is a simple to use editor that anybody can learn in a matter of minutes. The functions include Loading Text, Viewing Text, Line Deletion, Line Editing, Line Insertion, and Printing the file to your printer. The maximum number of lines you may have in the buffer is 330 and commands are easily executed from within the program. This program is fine for simple, nothing fancy type editing of small files.

EDIT62/CMD

This little machine language program by R. F. Dietz takes advantage of the speed of assembly language and adds a few more features as well. It is very easy to learn and a built in help screen is always available by typing Ctl C. Features include Loading Text, Inserting Text, Character/Line Deletion, Character/Line Insertion, Moving to Top/Bottom of File, Available Buffer Space, Printing the File, and Viewing Disk Directory.

TEXTEDIT/BAS

Quite a bit of work went into this Text Editor program and Pete Theer is to be commended for his work (where is he now?). The program takes advantage of the F1 key by using it to display a Command Menu whenever you need it. The current version has a 500 line capacity on a 128K Model 4 and takes full advantage of the Model 4's low resolution graphics capability. Some of the functions include Creating a New file, Typing the lines to the Screen or

Printer with a line number option, Replacing lines, Removing a Disk File, and Disk Directory Viewing.

Until recently, this was my favorite Text editor for Straight ASCII work until I came across:

NOBUG4/BAS

NOBUG has a long history to it. Originally written for the Model 1 in 1982 by Ray Furlong, and ported over to Model 4 BASIC by Bob Ackerman in 1984, NOBUG has been hacked about and modified over the years. Recently, George Lee has added extensive modifications for use with his REMS-80 BBS program that has turned NOBUG4 into a first class Text Editing program.

Here is the Main Menu from NOBUG4/BAS:

NOBUG 4 MESSAGE GENERATOR REV 4.1 Converted for Model 4 by Robert Ackerman

Current file (NONE) Lines (0) Remain (500)

(L)oad	(D)elele line
(S)ave Message	(#) Clear Buffer
(I)nsert Message or line	(H)ard copy
(E)dit line	(B)order - add/remove
(M)easure Message	(!) GotoTRSDOS
(N)umber lines	(\$) END
(P)rint Message to CRT	(T)ext center/uncenter
(A)dd disk file to msg	(R)emove DDS line #
(J)oin text lines together	(G)et directory
(*) TRSDOS Command	(V)ariable speed DDS trns
(K)ill message on disk	(X)change text
(&) Sort	(Z) RUN ENTRY4/BAS
	(C) RETURN TO COMMAND4/BAS

Menu selection:

As you can see, NOBUG4 is loaded with options. I find that the most useful are the Text Center/Un-center function, and The Border function. If you find that you have a tendency to update and save the same file name over and over again, you will find a full menu of file names available when you Save a text file. This menu can easily be altered from BASIC. The program is fast and I have yet to find any faults with it. In my opinion, this is the Text Editor to find.

Now we move on to the WORD PROCESSOR.

The Word Processor does more than just allow you to edit text. A Word Processor should allow you to set margins, duplicate text, define blocks of text and move them about within the file. A Word Processor should have a direct link to your printer's control commands so the printing can be manipulated on the finished printed document.

I have found only one program that will do all of this and more, and it is a beauty:

WRITER/CMD

80-Writer by Steve C. Phillips is a ZBASIC compiled full function Word Processing program that allows you to do many of the functions that the big commercial packages do. The program is very easy to use and has a built in help screen if you run into any problems. The buffer is capable of handling up to 334 lines of text and 80-Writer takes full advantage of all 3 Function keys and allows a user definable screen to be added to the program.

Many of the features include Adding Lines to The current cursor position, Deleting characters at cursor position, Space Insertion, Insert mode toggle, Margin setting, Text Justification, Text Merging, Text Search and Replace, and Text Centering to name just a few.

80-Writer currently supports the Italic, Boldface, Expanded, Subscript, and Superscript modes of Epson and compatible printers. Future versions may support other printers as well.

80-Writer is a SHAREWARE program and Steve requests a \$20.00 donation if you find the program useful. In return for your donation you will receive a printed manual and update information as well as continued support and information about other programs.

In addition to your Text Editor/Word Processing program, you may wish to check for misspelled words. SPELLING CHECKERS are useful for this purpose and two programs in the public domain come to mind:

WORD/CMD

WORD's features include checking of ASCII files against a dictionary, display of dictionary words alphabetically before and after the text word, replacement of the text word from the dictionary, adding to the dictionary from the text, and changing the text using the dictionary word. The dictionary is limited to 31,000 bytes and the distributed version holds 1613 words.

WORD is a nice program but does have its limitations. Your choices for word replacement are the words in the library that the text word in question falls between. There is no function to manually correct the word and add it to the dictionary. I also found that the program doesn't like words that start with "TH". I found that the program was confused when I deliberately typed THXS for THIS in my sample text

file. WORD read and passed over THXS as a correct spelling of a word.

WORD is written by James K. Gaede and is an above average program for the Public Domain that is recommended for limited applications.

SLEXY/CMD

Written by Kevin Klerans, SLEXY is a fairly new addition to my collection even though the release date is said to be 1986. SLEXY will read an ASCII text file and create a second "checked" ASCII file with the words in question flagged with a reverse video question mark. The dictionary is limited to about 5,000 words and has a relatively slow checking speed. SLEXY does not use a ROOT based library (WORD does), so every word you want to check against must be added to the library.

With Slexy, you use your word processor to make the correction to your text. After the corrections are made, the words can be added to the library with the ADDWORDS/CMD program that is distributed with SLEXY. ADDWORDS simply looks for all words preceded by a reverse video question mark and adds them to the dictionary.

SLEXY is a nice program, but limited to the fact that your Word Processing program MUST be able to display CHR\$(252) which is the reverse video question mark. These question marks must also be physically removed from the finished file, a process that can become very tedious if you are a bad speller.

The final addition to my tour of Word Processing in the public domain is a little utility that I have come to find most useful. With all the various word processing programs available, each one has its own unique set of codes to tell a printer what to do. In addition to this, older files that were sent via ASCII buffer capture have a tendency to pick up unwanted character codes that are invisible when the program is LISTed but are very much visible when loaded into a word processor. To top this all off, the TRS-80 does not use the carriage return after line feed that most other computers use and those codes show up as wierd little characters in a word processor.

TEXTFIX/CMD

TEXTFIX is a program that will clean out all of those unwanted characters and will give you a pure ASCII file to use. When you invoke TEXTFIX you are prompted for the following fixes to your file:

Remove line-feed characters ? Add line-feed characters ? Replace tabs with spaces ? Mask high bit of characters ? Convert lower to upper case ? Delete previous character if backspace or rubout encountered in text ? Remove control characters from text ? Terminate file with 00 BYTE ?

As you can see this is a very useful program when you want to clean up those "dirty" ASCII files. TEXTFIX is fast and does the job very well.

That about wraps up my tour of Public Domain Word Processing. The aforementioned programs are only a few that can be found through various Public Domain software sources, and as always, they can be found in the FILE CABINET'S TRS-80 Model 4 Disk Library (which by the way has finally shipped it's disk catalog to those who requested it).

(Ed. note: The delay in shipping the Disk library was caused by continuous, malicious burglaries and vandalism to Tim's residence by persons to this date still unknown. Hence Tim was forced to start from scratch several times and finally, to move to a different address.)

Next issue will be my review of the various HIGH RESOLUTION software available in the Public Domain. Maybe I can talk Lance into letting me show off some of the graphics!

Tim Sewell has been collecting software for the TRS-80 Model 3 and 4 ever since he bought his first Model 4P back in 1984. In less than four years he has put together what is considered to be one of, if not the largest collection of TRS-80 software in the country. He is currently going blind trying to catalog it all and refuses to have a social life until the job is done.

Tim welcomes ALL software submissions for review.

Tim can be reached via THE FILE CABINET
P.O. Box 4295, San Fernando, Ca. 91342
or through TRSTIMES.

MORE GOODIES FOR YOUR TRS-80

Get the latest issue of TRSLINK

TRSLINK is the new disk-based magazine dedicated to providing continuing information for the TRS-80. A new issue is published monthly, featuring Public Domain programs, "Shareware", articles, hints & tips, nationwide ads, letters and more.

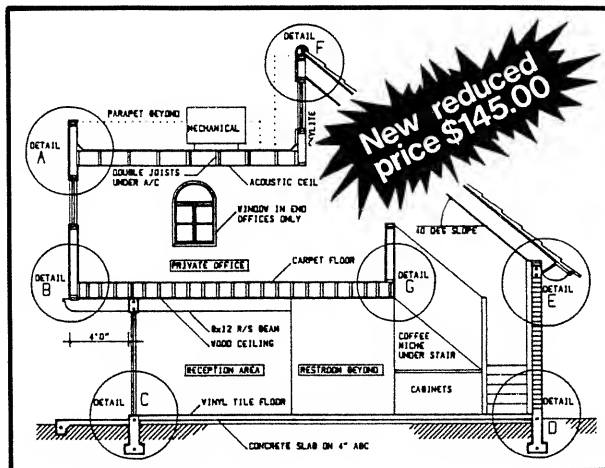
TRSLINK can be obtained from your local TRS-80 BBS, or download it directly from:

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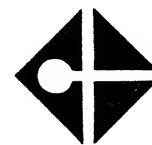
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Microdex Corporation
1212 N. Sawtelle
Tucson AZ 85716
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Write or call for details.



MICRODEX

STATES and CAPITALS

a Model 4 geography 'game'
by Lance Wolstrup

"Dad". Eight year old Steven turned to me, "why don't you make this into a computer game?"

I was driving him to school and, as usual, we were playing our geography 'game'. I would throw out the name of a state and he would tell me its capital, or I would say the name of the capital and he would tell me the state. Either way, he would also spell the answer.

I thought for a minute. Well, why not? I needed a break from editing, pasting, cutting, stapling, and all the other good stuff that goes with TRSTimes, so Steven did not need all of his many persuasive powers to make me agree. It would feel good to take time to program again, especially something simple that would also help with his education. I was looking forward to it.

By the time Steven returned from school, 'STATES and CAPITALS' was ready and after completing his homework, he proceeded to spend three hours with his new program.

Aren't kids amazing? Had I told him to study the names of states and their respective capitals for three hours, he would have objected loudly, but on a computer, now that's different. It becomes a game.

'STATES and CAPITALS' is a fairly straight forward Basic program. When RUN, the child is presented with the menu which allows three choices:

1. Name the CAPITALS
2. Name the STATES
3. Quit

Choosing option 1 will show the name of a state on the screen and the child will be asked to type the name of its capital. The answer must be spelled correctly or it will be counted as wrong. Don't worry about upper or lower case settings. The keyboard is automatically set to upper case immediately before any INPUT statement.

When the child has typed the answer and pressed the <ENTER> key, the response will be checked and an appropriate message will appear. In case of a wrong answer, the child will be shown what the right answer is.

The bottom three lines of the screen will display a 'scoreboard'. That is, the number of questions asked will be shown to the extreme left while the number of correct answers will be shown on the extreme right. In the middle is a feature that Steven really enjoyed: a school grade, complete with percentage and letter grade, which reflects the current progress in the game. It was this feature that kept him occupied for three hours. He had missed a couple of capitals and he didn't want to quit until his score was back to 'A'.

After answering a question, the child may press <ENTER> to continue or <Q> to quit, which brings back the menu.

Option 2 works exactly like the above. The only difference is that the child will be shown a capital and then asked to type the appropriate state.

Option 3, obviously, will end the game.

Though written in Basic, 'STATES and CAPITALS' will work **ONLY** on a Model 4 using either TRSDOS 6.2 or LS-DOS 6.3. Because of some very specific **POKEs** it will **Not** work on any other operating system, so for those of you who may wish to convert the program to Model I, III, another Model 4 DOS, an early version of TRSDOS 6. or even, heaven forbid, a non-TRS-80, here is a list of what these **POKEs** accomplish:

Line 10: POKE &H7C,PEEK(&H7C) OR 16
'disables the BREAK key

Line 120: POKE &HB94,8
'forces special characters

Line 230: POKE &H74,PEEK(&H74) OR 32
'forces upper case characters

POKE &H7C,PEEK(&H7C) AND 239
'enables the BREAK key

Line 320: POKE &H74,PEEK(&H74) OR 32
'forces upper case characters

Line 400: POKE &H74,PEEK(&H74) OR 32
'forces upper case characters

POKE &HD20,&H8F:POKE &HD21,&HFE
'shortens screen by 3 lines so PRINT CHR\$(31)
will not erase bottom 3 lines

POKE &HD20,&H7F:POKE &HD21,&HFF
'restores screen length to normal

(The last two pokes in line 400 were explained in detail in TRSTimes #2 (March 1988). The rest were covered in the January 1988 issue.)

There is plenty of room for enhancement. For example, I can visualize adding some graphic screens as a reward for getting a certain number correct in a row. Also, a fun ending screen would certainly make the program better. But that is up to you 'hackers' out there. Feel free to modify the program any way you like.

Type in STATES/BAS. RUN it and set your kids down in front of it. If they are anything like Steven, they will treat it as a game and spend time learning without realizing it.

STATES/BAS

Model 4 Basic
TRSDOS 6.2. or LS-DOS 6.3. ONLY

1 ' *****

2 ' Filename = STATES/BAS

3 ' Copyright <c> 1988 TRSTimes publications
and Lance Wolstrup

4 ' 20311 Sherman Way #221

5 ' Canoga Park, CA. 91306

6 ' WARNING: this listing will work only with
TRSDOS 6.2 and LS-DOS 6.3.

7 ' *****

10 POKE &H7C,PEEK(&H7C) OR 16:
GOTO 100

20 DATA ALABAMA, MONTGOMERY, ALASKA,
JUNEAU, ARIZONA, PHOENIX, ARKANSAS,
LITTLE ROCK, CALIFORNIA, SACRAMENTO,
COLORADO, DENVER, CONNECTICUT,
HARTFORD, DELAWARE, DOVER, FLORIDA,
TALLAHASSEE, GEORGIA, ATLANTA, HAWAII,
HONOLULU

30 DATA IDAHO, BOISE, ILLINOIS,
SPRINGFIELD, INDIANA, INDIANAPOLIS,
IOWA, DES MOINES, KANSAS, TOPEKA,
KENTUCKY, FRANKFORT, LOUISIANA, BATON
ROUGE, MAINE, AUGUSTA, MARYLAND,
ANNAPOLIS, MASSACHUSETTS, BOSTON,
MICHIGAN, LANSING, MINNESOTA, ST. PAUL

40 DATA MISSISSIPPI, JACKSON, MISSOURI,
JEFFERSON CITY, MONTANA, HELENA,
NEBRASKA, LINCOLN, NEVADA, CARSON
CITY, NEW HAMPSHIRE, CONCORD, NEW
JERSEY, TRENTON, NEW MEXICO, SANTA
FE, NEW YORK, ALBANY, NORTH CAROLINA,
RALEIGH, NORTH DAKOTA, BISMARCK

50 DATA OHIO, COLUMBUS, OKLAHOMA,
OKLAHOMA CITY, OREGON, SALEM,
PENNSYLVANIA, HARRISBURG, RHODE
ISLAND, PROVIDENCE, SOUTH CAROLINA,
COLUMBIA, SOUTH DAKOTA, PIERRE,
TENNESSEE, NASHVILLE, TEXAS, AUSTIN,
UTAH, SALT LAKE CITY, VERMONT,
MONTPELIER

60 DATA VIRGINIA, RICHMOND, WASHINGTON,
OLYMPIA, WEST VIRGINIA, CHARLESTON,
WISCONSIN, MADISON, WYOMING, CHEYENNE

70 DATA Great answer, Good work, Fantastic,
You got it, That's right

80 H = INT((80-LEN(A\$))/2)

90 PRINT@(V,H),A\$;:RETURN

100 DEFINT A-Z:DIM ST\$(50),CT\$(50)

110 FOR X=1 TO 50:READ ST\$(X),CT\$(X):
NEXT:FOR X=1 TO 5:READ C\$(X):NEXT

120 QA=0:CO=0:PRINT CHR\$(15):CLS:POKE
&HB94,8

130 A\$="TRSTimes Presents: "+CHR\$(143)+
CHR\$(244)+CHR\$(245)+CHR\$(246):V=0:H=0:
GOSUB 90

140 A\$="STATES and CAPITALS":GOSUB 80

150 A\$="1988 Lance Wolstrup":H=80-LEN(A\$):
GOSUB 90

160 A\$="TRS-80 Model 4 Basic":V=1:H=0:
GOSUB 90:A\$="TRSDOS 6.2./LS-DOS 6.3":
H=80-LEN(A\$):GOSUB 90

170 A\$="Written for Steven Wolstrup":V=2:
GOSUB 80

180 V=3:H=0:A\$=STRING\$(80,140):GOSUB 90

190 V=8:H=30:A\$="1. Name the CAPITALS":
GOSUB 90

200 V=10:A\$="2. Name the STATES":
GOSUB 90

210 V=12:A\$="Q. Quit program":GOSUB 90

220 V=16:A\$="Make your selection (1,2, or Q)":
GOSUB 80

230 POKE &H74,PEEK(&H74) OR 32:I\$=
INKEY\$:IF I\$="Q" THEN CLS:PRINT CHR\$(14):
POKE &H7C,PEEK(&H7C) AND 239:END ELSE
IF VAL(I\$)<1 OR VAL(I\$)>2 THEN X=RND(50):
GOTO 230 ELSE I=VAL(I\$)

240 PRINT@(6,0),CHR\$(31):V=0

250 IF I=1 THEN A\$="NAME THE CAPITALS"
ELSE A\$="NAME THE STATES"

260 GOSUB 80:V=21:H=0:A\$=STRING\$(80,
95):GOSUB 90

270 V = 22: A\$ = "Questions: 0": GOSUB 90

280 A\$ = "Correct Answers: 0": H = 80 - LEN(A\$):
GOSUB 90

290 X = RND(50): Y = RND(5)

300 V = 8: IF I = 1 THEN A\$ = "What is the capitol
of " + ST\$(X) ELSE A\$ = CT\$(X) + " is the capitol
of which state"

310 GOSUB 80: V = 10: IF I = 1 THEN H = INT((80 -
LEN(CT\$(X)))/2) ELSE H = INT((80 - LEN
(ST\$(X)))/2)

320 PRINT@(V,H),":POKE &H74,PEEK(&H74)
OR 32:PRINT CHR\$(14);:INPUT",AN\$:PRINT
CHR\$(15);

330 V = 12: IF I = 1 THEN IF AN\$ = CT\$(X) THEN
A\$ = C\$(Y): CO = CO + 1: GOSUB 80: ELSE
A\$ = "Wrong answer": GOSUB 80: V = 14: A\$ = "The
capital of " + ST\$(X) + " is " + CT\$(X): GOSUB 80

340 IF I = 2 THEN IF AN\$ = ST\$(X) THEN
A\$ = C\$(Y): CO = CO + 1: GOSUB 80 ELSE
A\$ = "Wrong answer": GOSUB 80: V = 14: A\$ =
CT\$(X) + " is the capital of " + ST\$(X): GOSUB 80

350 QA = QA + 1: P = INT(CO/QA*100 + .5)

360 IF P < 60 THEN P\$ = "F ": GOTO 380 ELSE IF
P < 65 THEN P\$ = "D ": GOTO 380 ELSE IF P < 70
THEN P\$ = "D ": GOTO 380 ELSE IF P < 75 THEN
P\$ = "C ": GOTO 380 ELSE IF P < 80 THEN P\$ =
"C ": GOTO 380 ELSE IF P < 85 THEN P\$ = "B ":
GOTO 380

370 IF P < 90 THEN P\$ = "B ": GOTO 380 ELSE IF
P < 95 THEN P\$ = "A ": GOTO 380 ELSE P\$ = "A "

380 V = 22: H = 11: PRINT@(V,H), USING"####":
QA: H = 76: PRINT@(V,H), USING"####": CO: H = 36:
PRINT@(V,H), USING"###": P: PRINT"% - "; P\$;

390 V = 20: A\$ = "Press < ENTER > to continue -
< Q > to quit": GOSUB 80

400 POKE &H74,PEEK(&H74) OR 32: I\$ =
INKEY\$: IF I\$ = "Q" THEN 120 ELSE IF I\$ < >
CHR\$(13) THEN X = RND(50): GOTO 400 ELSE
PRINT@(5,0),":POKE &HD20,&H8F:POKE
&HD21,&HFE:PRINT CHR\$(31);:POKE &HD20,
&H7F:POKE &HD21,&HFF:GOTO 290

MULTIDOS UPDATE

Registered owners of Multidos for Model I, III, 4 and Max 80 can now update to version 2.1. of Multidos. The new version extends the dated files feature in Multidos, which now uses a directory format compatible with LDOS, DOSPLUS and TRSDOS 6. All these DOSes would not record a date later than 1987 in the directory because the original plan for recording date did not use enough bits to store years later than 1987.

Multidos 2.1. now creates directories compatible with directories by LS6, and the current version of LDOS, which allow dates beyond 1987 but sacrifice the access password. Directories are now 'time stamped' when the files are created or updated in the directory.

Multidos, created by Vernon Hester, allows the user to enter the current time when the computer is first booted or allows the user to skip this step by pressing ENTER after providing the date, or to press ENTER to avoid entering either a date or time. This new date/time prompt aids the users in entering the correct date and time by providing the separating punctuation automatically. If the date has already been entered, Multidos skips the date/time prompt on a 'reboot'.

A new utility program, "FIXDATE", will convert a 2.0. or earlier directory to the 2.1. format. FIXDATE also will convert the format back from 2.1. to 2.0., if possible.

The DIR command now optionally displays files sorted by file date and time from most recent to earliest, or earliest to most recent. This feature was available only in Multidos 80/64 2.0., not in the Model I and Model III versions of the DOS.

Multidos' much praised, all inclusive file transfer and purge utility, "VFU" (for Visual File Utility), now uses the time stamp to decide if a file is an older version which may be overwritten by a later version. VFU also sports an expanded menu and new 'wild card' feature that can be used to restrict selection to only those files that match the wild card pattern. For example, the user could select only files with the extension "/TXT", then use the arrow keys to make the final selection of files to copy or purge.

VFU now allows the option of repeating the previous copy or purge operations on another disk, seeing the affected directory, or returning to the main menu. Fifteen programs or system files of the operating system have been changed from the previous 2.0. version of Multidos. Version 2.0. users can use VFU to move the new system to current 2.0. system disks. An install program is included for version 2.0. hard disk users. MULTIDOS 2.1. is available from:

AlphaBit Communications, Inc.
13349 Michigan Ave. Dearborn MI. 48126
(313) 551-2896 - David Welsh

HOW MICRO-LABS IMPROVES THE QUALITY OF LIFE

A Review by Eric Bagai

In the tradition of high-resolution hardware and software reviewers, I'll begin by saying that I am not an artist. But you wouldn't know it from the stuff on my screen.

I have coveted a hi-res board for years. When the price came within my means, I immediately sent away for the Graphics Solution, which is the high-resolution system from Micro-Labs. Radio Shack also has one, but more about that later.) The box contained a 52 page manual and a disk with GBASIC and assorted utilities and demonstration programs for both Model III and 4 operation. But the main ingredient was the hardware: a well-packed and neatly constructed high-resolution graphics board for my TRS-80 Model 4.

Installation was easy, especially after I read the instructions several times all the way through. If this is your first time opening the case on your machine, just move slowly, read the instructions, don't force anything, read the instructions, clear twice as much room as you think you'll need, and read the instructions. Then follow the instructions, exactly. Micro-Labs suggests a buddy system, where a friend follows the instructions with you, but you do the work. The actual work takes a half hour to an hour.

How good is it? Better than almost anything but an Atari ST, an Amiga, a Mac II, or an IBM with a Hercules board. The actual numbers are 640 by 240 pixels, plus three less-resolute modes for playing with. Swinish luxuries such as color are irrelevant (unless you have one of the old CHROMAts boards.) The Micro-Labs board and GBASIC can be used with any Model III or 4 DOS except Multidos. Also, the regular Model III and 4 screens are unchanged and always available to overlay or switch with the high-resolution display. Because the hi-res image is held in 20K of memory on the hi-res board itself, you can even reboot, run your accounts receivable in Model III mode, and then return to the hi-res image you left without having saved it to disk.

The graphics commands in GBASIC are very easy to use. Within hours of installing the Micro-Labs board I had typed in a GW-BASIC fractals program that I'd found in BYTE (Jan 88), and only a few small changes were required to make it work in GBASIC. More recently I adapted D. A. Goldman's Video Weaver for hi-res operation. Again, only a few changes were needed.

The utilities supplied by Micro-Labs are simple but comprehensive, and include printer drivers for the most popular machines (but call to make sure

yours is included.) One of the great joys of the Micro-Labs board, and almost worth the price alone, is the animation demo program: anyone who uses it begins to laugh in less than thirty seconds, guaranteed. The other demo programs can take up hours of your time as you just watch them ripple through their changes. And unlike most demonstration programs I've seen, these are genuinely informative.

The manual also includes procedures and examples for assembly programmers, showing how you can make self-contained hi-res programs, even in CPM. But most users will not be techno-wizards or even moderately acceptable programmers. Most users, like me, will depend primarily on the high-resolution graphics programs available from three sources: commercial products (mostly from Micro-Labs), public domain programs for the Micro-Labs board, and public domain programs for the Tandy high-resolution board. Let's begin with the last categories first.

Public domain programs for the high-resolution board include Macintosh conversion utilities and Mac pictures, Compuserve utilities, drawing and paint programs, business graphics, math function displays, and miscellaneous demos and games. These can all be down-loaded from GENIE or ordered from The File Cabinet (see the ad in this issue.) There are enough programs to keep you exploring for months before you decide which ones fit your needs best. Many of these programs run only under BASICG, Tandy's high-res BASIC, but this is not really a problem. The Micro-Labs board can run any of the programs written for the Model III or 4 Tandy board. Assembled programs run without change and Tandy's BASICG works on the Micro-Labs board as if designed for it. You can still get copies of BASICG from Tandy's National Parts or from a friend. The Tandy board is not so forgiving of programs written in Micro-Labs' GBASIC, and some commands have no equivalent in BASICG. The Tandy board is also more expensive and harder to install. The good news is that if you already have the Tandy hi-res board, Micro-Labs sells a version of GBASIC that will work for you.

The last category of programs for the high-resolution board consists of commercial packages made or distributed by Micro-Labs. These range from 3-D chess to a full-blown Computer Aided Drafting (CAD) package. One of the more interesting is GW-CONVERT, which does just that: converts GW-BASIC programs to run in Model 4 GBASIC. Short descriptions of these programs can be found in the Micro-Labs ads in this and previous issues of TRSTimes. Because I make most use of the drawing programs,

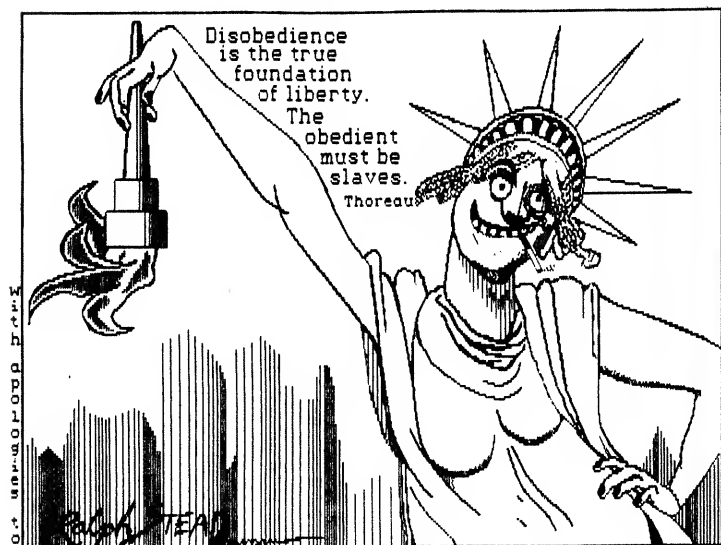
I'll finish this article with a closer look at Micro-Labs' Pro-Draw, and next issue I'll tell you about xTcad.

Pro-Draw is the most complete drawing program for the TRS-80 currently available. It is not perfect, and there are programs in the public domain with faster or more advanced features. But Pro-Draw does more, and is more comprehensive than any other drawing program. In my hi-res work I often use other drawing programs as utilities, but Pro-Draw is my principal drawing program. Like most users, I am not an original artist. I copy things that interest me. The original of Liberty is by Ralph Steadman, illustrator for the books of Hunter Thompson, and one of my favorite political artists. It took no great skill on my part to make a fair likeness of the original work, just lots of time and patience and Pro-Draw. Even assuming I had the talent, it would have taken me a thousand times longer to learn how to do a pencil sketch of the same piece. It was my third piece with Pro-Draw.

You can use any of the 80 types of paintbrush, or you can place individual dots to the limit of the screen's resolution by using a 10X zoom. Lines, circles, arcs, and boxes appear with a few keystrokes, and you can move shapes around and change their orientation and size. You can easily do schematics, floor plans, architectural renderings, circuit boards, graphs, oriental block prints, or anything else that requires libraries of repeated graphics. Pro-Draw has so many features that listing them all becomes boring. It is more useful just to say that Pro-Draw is no more difficult to learn and use than any good word processor, and works about as fast. So, if you have the ideas, Pro-Draw has the tools.

Adding the Micro-Labs board to your Model 4 is as sound an investment as moving from tape storage to disk, and less expensive. And Pro-Draw, like any fine tool, makes your work not only easier, but more enjoyable.

And Micro-Labs really does improve the quality of Life; the Conway version. You've really got to see it.



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FIXES & ENHANCEMENTS

A goof in the 'Hunting for Buried Treasure' article in Issue #1 occurred on page 4, lower half of column 2. We discussed the SFLAG\$ located at 7CH. This is correct, unfortunately all the examples used 74H instead of 7CH. Here are the corrections:

4 mhz - FAST:

POKE &H7C,PEEK(&H7C) OR 8:OUT &HEC,&H72

2 mhz - SLOW:

POKE &H7C,PEEK(&H7C) AND 247:OUT &HEC,8

Disable BREAK key:

POKE &H7C,PEEK(&H7C) OR 16

Enable BREAK key:

POKE &H7C,PEEK(&H7C) AND 239

David Goblen sends the following enhancement to the LDOS CAT program from Issue 1, page 15.

He says: 'This will run on all versions of Model I and III LDOS. On program entry, the HL register always points to the text following the command in the DOS command buffer. I also thought that the colon should be optional, as it is with the DIR command. Thus you could write the code:

START

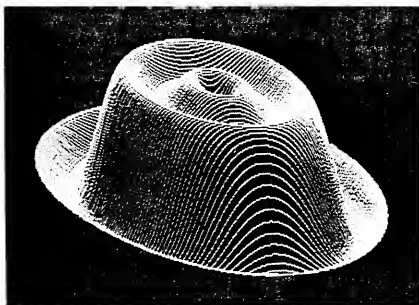
ERROR

```

ORG 7000H
LD A,(HL) ;get a character
INC HL
CP ''
JR Z,START
CP '' ;colon?
JR NZ,$+3 ;no
LD A,(HL) ;else get next
SUB '0' ;drop ascii
CP 8
JR NC,ERROR
LD C,A ;set drive
CALL 4209H ;check drive
JR NZ,ERROR
LD B,0 ;display DIR to *DO
LD A,(125H)
CP 'I' ;Model III?
JP Z,4419H ;yes, do III DIR read
JP 4463H ;else do I DIR read
LD A,32+40H ;illegal drive
JP 4409H
END START
    
```

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Superior Hardware. The Grafyx Solution provides 153,600 pixel elements which are arranged in a 640 x 240 or on the Model III a 512 x 192 matrix. Hundreds of new business, personal, engineering, and educational applications are now possible. The hi-res display can be shown on top of the standard display containing text, special characters, and block graphics. This simplifies program debugging, text labeling, and upgrading current programs to use graphics. The Grafyx Solution fits completely within any tape or disk based Model 4, 4D, 4P, or III. Installation is easy with the plug-in, clip-on Grafyx Solution board.

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Superior Software. The board comes with over 40 programs and files which make it easier to use, serve as practical applications, demonstrate its capabilities, and serve as programming examples. The software works with TRSDOS 1.3, 6.1.2, 6.2, 6.3; Dosplus 3.4, 3.5, 4; LDOS; and Newdos80. The Grafyx Solution is also supported by 30 optional applications programs: Draw, Bizgraph, xT.CAD, 3D-Plot, Slideshow, Mathplot, Surface Plot, Chess, etc.

The Grafyx Solution package is shipped complete for \$149.95 (reduced from \$299.95). The manual only is \$12. Payment may be by check, Visa/MC, or COD. Domestic shipping is free on pre-paid orders. Texas residents add 7% sales tax.

MICRO-LABS, INC. 214-235-0915
902 Pinecrest, Richardson, Texas 75080

CP/M - The alternate DOS for Model 4

by Roy Beck

As a child, I remember my mother often saying someone "had the pip", which meant they were suffering from a minor ailment such as a stomachache, etc. CP/M also has the PIP, but as a permanent affliction!

What is PIP?

The acronym stands for Peripheral Interchange Program. Is this any more enlightening? For us TRS types, if we just think of it as the COPY function, we will be on the right track. Naturally it is somewhat different from COPY (why would we expect standardization?) but not so bad when we get into it.

PIP is a transient program, meaning it is not an integral part of the DOS, but rather is a separate program called when needed. It is like FORMAT under many of our DOS's, and can be deleted from a DOS disk when it is desired to increase the FREE space on a DOS disk.

CAPABILITIES

In summary, PIP will do the following:

1. Copy one or more files from one drive to another. The name of the file can be changed in the process. This is probably PIP's most used function, and is very much like the COPY commands we are familiar with in TRS DOSes.
2. Make a copy of a file elsewhere on the same disk. The copy of the file can have any name you wish, even the same as the original (if you put it in a different "User Number").
3. Merge several files into one. This capability will merge two or more files into a larger file on any disk you specify, taking the files from whichever drive(s) you specify. The original files are not altered, only the new one is created.
4. Files can be copied to or from a disk and to or from a logical device. A logical device can be, for example, a peripheral such as your printer or your MODEM. In this application, you can send an ASCII file from a disk to a printer, or move any kind of file from one machine to another. The printer or MODEM is simply a peripheral, and that's the purpose of PIP, to interchange files between peripherals.
5. Optional PIP parameters. There are numerous parameters from which to choose, and I will discuss the more widely used of these.

COMMAND SYNTAX

There are two ways to call and use PIP. The command `A> PIP <CR>` will bring in the PIP program which will announce its presence with its own cursor, an asterisk (*). In this mode it will stick around and execute successive commands as long as you desire. When you are through with it, either type a `<CR>` with nothing else on the line, or do a warm boot (CTRL C). Either one will bring you back to DOS ready. Oops, that should be `A>`. Sorry about that!

The other way to use PIP is to call it with various parameters on the command line. After the command is complete, the DOS will come back to `A>`, or whichever drive you were logged onto before you called PIP.

COPY

PIP will perform like COPY and will move a file or program from here to there. To move a file named JOE.TXT from Drive C to Drive B, your PIP command line will be:

`A> B:JOE.TXT = C:JOE.TXT`

Note the new filespec appears on the left, and the old filespec appears on the right, which is just the opposite of TRS DOS.

Where the filename is unchanged, two alternative forms are available:

`A> B:JOE.TXT = C:` or `A> B: = C:JOE.TXT`

All three are legal, and you may use the one you like. By the way, Monte has assisted our use of PIP by giving us the SH + Function key macros. The shift key plus one of the function keys generates the following keystroke sequences on the screen:

`SH + F1 gives PIP A: =`

`SH + F2 gives PIP B: =`

`SH + F3 gives PIP M: =`

The third one allows us to copy to a MEMDISK, which is designated drive M on a Mod 4. The command strings generated by this means are incomplete. You have to add the source drive number and the source filename. But Monte does do almost half the work for us!

To change the file name enroute, use a command like: `A> B:DOTTY.TXT = C:JOE.TXT`

In this example, JOE.TXT becomes DOTTY.TXT. You can still use the shifted function keys, just backspace out the = sign from the end of Monte's string, add the new destination filename, followed by the = and the source filespec.

The greatest difference from TRS practice is to remember the reversed order; destination on the left, source on the right.

SECOND FILE COPY ON SAME DISK

There are two different ways to have two identical copies of a given file on the same disk.

One way is to give the second copy a name different from that of the first one. This is the simplest case, and CP/M has no objection to doing this for you. The syntax can be as follows:

A> PIP B:COPY2.COM = B:COPY1.COM

Since the filespec is not identical, CP/M has no confusion and no objections, even though the actual file contents are identical.

Ordinarily, you cannot have two identical filespecs in the same directory, as CP/M would not know which one you are addressing.

HOWEVER! And here we must digress to a significant extent. CP/M has a form of password protection known as the 'user area'. 16 different user areas are available, 0 to 15, with number 0 being the default.

The general rule is that you can only access the files in the user area you are logged into. Thus if you are in user area 3, you cannot access files over in user area 0, or any other area! While this is not a secret password system, it does serve to fence apart the user areas, and thus allows you to keep the Games in, say, user area 1, Word Processors in area 2, and so on. This is a useful method of reducing directory clutter.

Now, this is all well and good, but the sharpies among you have probably already spotted the apparent difficulty here. If you cannot access files in some other user area, how in the world do you get a desired file into a new user area?

As you might expect, the answer to this conundrum involves PIP. (Why else would I have brought up the subject of user areas at this time?)

Indeed, PIP can move files from another user area into the one PIP is located in. That's easy, all you need is a copy of PIP in the new user area. Yeah, but PIP cannot move anything into some other user area, so we still have the problem of first getting PIP into the new area.

In this matter, CP/M has a solution, but it is very definitely an around the barn method! To perform the exercise, we need not only PIP, but also STAT.COM and DDT.COM, both of which are also transient programs.

The procedure from user area 0 is as follows:

Issue the command **STAT PIP.COM**

If STAT and PIP are on the disk, STAT will report some statistics about PIP. Note and write down on paper the number of "Recs" or 128 byte records used. This number is close to the real file size, but being related to the number of sectors used, it is somewhat larger than the actual file size. For PIP, this value will ordinarily be 58, meaning 58 records of 128 bytes each were saved to disk.

Now issue the command: **DDT PIP.COM**

When this operation is complete, you should see the DDT prompt on the screen, which is "-" (minus).

Now, immediately perform a warm boot (CTL C). This will bring you back to the CP/M prompt A>, but with a difference. A copy of PIP.COM is now residing in RAM. Next, issue the user command for the user area you want to go to. **USER 3**, for example, will get you to area 3.

Next we will use the built-in command **SAVE** to copy the PIP.COM from RAM to the DISK. But, another of CP/M's quirks! the **SAVE** command must have a number appended to it representing the size of the file to be **SAVED**. While we know the size of the file in 128 byte records, the **SAVE** command needs to know the number of memory pages, which are each 256 bytes long! To get this number, divide the Recs as reported by **STAT** in half, rounding up if the result ends in 1/2. Since **STAT** will probably give PIP's size as 58 Recs, the **SAVE** command will then be: **SAVE 29 PIP.COM**

This will save a new copy of PIP in the present user area (3 in this example), on the currently logged disk. If **SAVE 29 C:PIP.COM** is used, the copy will be on Drive C, user area 3, regardless of the drive currently logged onto.

With PIP now available in user area 3, any program or file from elsewhere can be PIPed into this user area. The command sequence now might be: **PIP B: = C:FILE1.COM[G8]**

This would bring **FILE1.COM** from user area 8 of Drive C to the current user area of Drive B, same name. The name could be changed, if desired, by putting the new name after the B:. The [Gn] construction is required.

As I previously noted, this is a cumbersome method, but it does work. There are some other tricks which can be played by using CP/M's versions of Superzap, etc, but these require other utilities and a knowledge of CP/M's disk structure. That's for another day.

CONCATENATION

PIP will append two or more files together and will deposit these as a new file on a designated drive. A permissible syntax is:

A> PIP B:NEWNAME = A:FILE1.TXT,C:FILE2.TXT,FILE3.TXT

Note that there is no drive number for **FILE3.TXT** in this example. Since the drive number was omitted, this implies **FILE3.TXT** is to be found on the same drive as **FILE2.TXT**, the next previous file which did have a drive number specified.

The only limit on the number of source files which can be concatenated in this fashion is the length of the command line, which is 80 characters. Each successive source filespec requires a comma as a delimiter in front of it, with no spaces.

Files to be concatenated are not restricted to ASCII, or even one single type of file. CP/M will blindly concatenate anything you ask for, which could legally include ASCII, tokenized BASIC, source code, and COM files in any proportion. Of course, the resulting mess may be totally unusable,

but still legal! The usual use of PIP in this fashion is to merge ASCII (TXT) files, but you could also use it to merge library code sequences into source code files you are developing. COM files could also be merged, but offhand, I don't know what use you could make of the result.

ROUTE

PIP can perform a version of ROUTE, allowing data to be routed from a DEVICE to a file, from a file to a DEVICE, and from a DEVICE to a DEVICE. There are over a dozen DEVICE names which can be used in CP/M, but I will use only a couple of them to illustrate this function. CON usually refers to the keyboard and video display. LST usually refers to your printer. These assignments can be changed but again, that's for another time. An example of a syntax to copy from a device to a file is as follows:

```
A > PIP B:MEMO.DOC = CON
```

This would accept keystrokes from your CONsole and ROUTE them to the file MEMO.DOC on drive B. With this command you can type directly to a disk file. ^C would be necessary to terminate this arrangement. Similarly, an ASCII file on a disk can be routed to the printer, using syntax:

```
A > PIP LST = B:TEXT.DOC
```

OPTIONAL PARAMETERS

Any parameter attached to the source file introduces new wrinkles. The syntax is ,p1,p2,p3 etc, all without spaces.

The permissible parameters include:

V which verifies the accuracy of the copy. The V command is important, and should be used routinely for security.

E which echoes text to the screen as it is copied. This one is valuable when needed, but is not an everyday item.

L which converts all uppercase text to lower case during a copy. Off-hand, I don't know when you would use this one.

U which converts all lowercase text to upper case during a copy. This one would be useful when moving the source code of a BASIC file saved in ASCII, but it has the drawback of also converting your REMarks to all uppercase. Use with discretion.

Tn which converts TAB characters to n spaces. This could be very helpful when printing files with TAB characters on a dumb printer which cannot properly interpret TAB.

F which deletes FORM FEED characters during a copy. This would be helpful if the printer has automatic formatting capabilities which would supply redundant form feeds during a printing effort.

Gn which pulls a file in from some other user area.

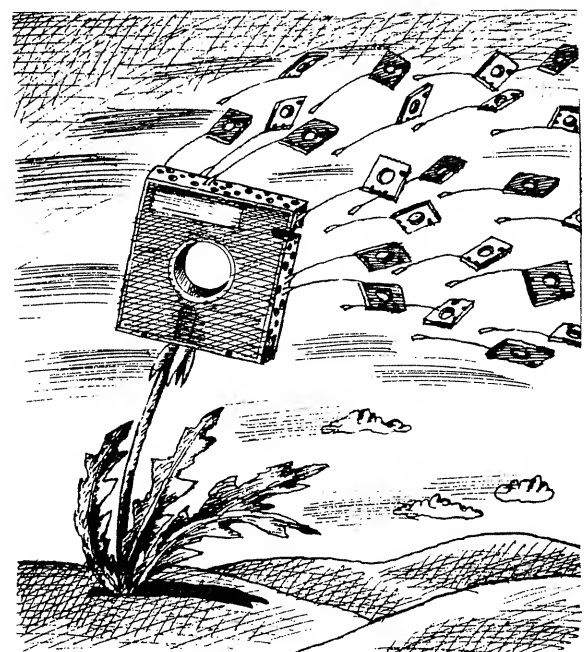
Pn which inserts FORM FEED characters after every n lines. Just the opposite of F, and is useful in crude formatting of file output through a dumb printer.

R which copies a file with "SYSTEM" status as set by the STAT command. Under CP/M, files are categorized either as DIRectory or SYSTEM. This really means the file is Visible or Invisible as understood by us TRS types, but does not really make a file a SYSTEM file as is familiar to TRS users, where most SYS files are used as overlays in the DOS area of RAM. Because CP/M "system" files are Invisible to DIR, etc, the PIP command normally ignores them unless the R parameter is included.

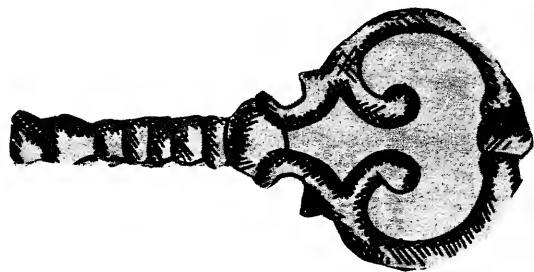
There are still more parameters which can be used, but in my opinion the others are too infrequently used to warrant mention here. Sometime you should read through all the PIP parameters at least once in order to know which other functions exist. This may prompt you to search out and make use of one of them when a specific need arises.

Also, you may use the wild cards ? and * as part of the source filenames. I won't go into that here, beyond reminding you that you can use wild cards in any of the source filenames. Wild cards are not permitted in destination file names, as CP/M does not have mind reading capabilities.

This column has been a long one, but even so we are far from having explored every nook and cranny of PIP. From here on, you are on your own with PIP, but careful reading and trial and error will lead you to your desired destination.



MASTERKEY



Unlocks all files

**Model III - LDOS
Model 4 - TRSDOS 6.x.**

by Lance Wolstrup

TRS-80 file password protection has been with us since the early Model I days. Simply speaking, the user has the ability to protect a disk file by attaching a password to the filename. The file then cannot be accessed unless the correct password is used along with the filename.

Originally, I suppose, this feature was implemented to protect the users from themselves. That is, all system files was, and is, password protected to make it as difficult as possible to destroy DOS information accidentally. However, somewhere along the way, the TRS-80 users started to password protect their own files to feel secure that his/her files could not be used or viewed by unauthorized eyes.

Yes indeed, the TRS-80 community went crazy. They 'passworded' every file in sight, wrote the passwords on little slips of paper and, of course, eventually managed to misplace their notes. This resulted in a multitude of important files that could not be accessed as well as quite a few very frustrated users.

Incidentally, an enhancement of this file protection scheme was used in the early days to keep TRS-80 owners from 'pirating' commercial software. By combining the file protection with a method to control BACKUP/CMD, Radio Shack did their best to keep us all honest. This was the infamous 'BACKUP LIMITED' programs. Remember them? You were allowed to BACKUP the disk only a certain amount of times (usually 3-5). When you had reached the allowable maximum, the BACKUP utility simply refused to make further copies. Trying to COPY the individual files over to another disk was useless because each file carried an unknown password. The disk simply could not be reproduced, at least not with conventional methods. If you crashed your last copy of such

a program, your only option was to trot down to Radio Shack and shell over some more cash for a new copy.

(TRSTimes will present an article on this subject, and a fix, in a future issue. Ed.)

As I am rather curious by nature, I have always found it annoying to be denied conventional access to a file which carried an unknown password. Using a 'zap' utility to manually undo a password on a few files is fine, but 'zapping' entire disks full of protected files becomes not only time consuming, but also boring.

MASTERKEY was written to solve this problem. It is an assembly language program that will strip all files on the target disk of their passwords. It is very fast. It takes just a few seconds to strip even a full disk.

Model III owners, use an editor/assembler to type in listing 1 and save it on an LDOS disk. I used good ol' EDTASM. Model 4 owners should also use an editor/assembler to type in listing 2 and save it on a TRSDOS 6.2. disk. I used the patched version of EDTASM that works on Model 4.

Keep in mind that the Model 3 version of MASTERKEY MUST be run from LDOS, and the Model 4 version MUST be run from TRSDOS 6.2. Both, however, will strip files of their passwords on target disks created by the following disk operating systems: LDOS, DOSPLUS, MULTIDOS, TRSDOS 6. It will also work on LS-DOS 6.3., MULTIDOS 2.1., and the latest version of LDOS, but in the process of unprotecting the files on these three systems, it will destroy the time stamps of the files.

The program has a couple of limitations. It will NOT work on TRSDOS 1.3. or NEWDOS/80, and it is only capable of 'stripping' single sided, double density disks. Time permitting, I will fix the latter before it appears on TRSTimes on Disk #2 in November.

MASTERKEY is easy to operate. Simply insert the diskette you wish to strip of passwords (the target disk) in drive :1 and press <ENTER>.

After a very few seconds the message 'Password protection removed....' will be displayed. Press any key to get back to the beginning of the program, where you may repeat the process on another disk, or press <Q> to quit and return to DOS.

For good measure it should be mentioned that it is possible to bypass password protection temporarily on TRSDOS 6.2. by using the MEMORY command.

From DOS type:

MEMORY (A = "N", B = 128) <ENTER>

All files are now accessible until reboot.

You now have a choice: Make it permanent with MASTERKEY or temporary with the MEMORY command. Either way, unlock only your own files.

Model III - LDOS 5.1.x

EDTASM
or other Editor/assembler

MASTERKEY - LISTING 1

Note: This program will work only with
single-sided, double-density disks.

```

00100 ;
00110 ; MASTRKEY/SRC
00120 ;
00130 ; <c> 1987 LANCE WOLSTRUP
00140 ;
00150 ; MODEL III - LDOS 5.1.x
00160 ;
00170 ; STRIPS PASSWORDS
00180 ; OF ALL FILES
00190 ; ON DISK IN DRIVE :1
00200 ;
00210 ;
00220 ;
00230      ORG 7000H
00240 START CALL 1C9H ;rom c1s
00250      LD DE,15376 ;display
00260      LD HL,MSG1 ;msg1 on
00270      CALL CHROUT ;screen.
00280      LD DE,15446 ;display
00290      LD HL,MSG2 ;msg2 on
00300      CALL CHROUT ;screen.
00310      LD DE,15500 ;display
00320      LD HL,MSG3 ;msg3 on
00330      CALL CHROUT ;screen
00340      LD HL,15552 ;put line of
00350      LD DE,15553 ;chr$(131)
00360      LD BC,63 ;on screen
00370      LD (HL),131
00380      LDIR
00390      BEGIN LD DE,15616 ;display
00400      LD HL,MSG4 ;msg4 on
00410      CALL CHROUT ;screen
00420      LD DE,15680 ;display
00430      LD HL,MSG5 ;msg5 on
00440      CALL CHROUT ;screen
00450 INPUT1 CALL 49H ;rom lnkey$
00460      CP 51H ;ls lt Q
00470      JP Z,QUIT ;yes-jump
00480      CP 71H ;ls lt q
00490      JP Z,QUIT ;yes-jump
00500      CP 0DH ;ls lt enter
00510      JR Z,CNTNUE ;yes-jump
00520      JR INPUT1 ;go back
00530 CNTNUE LD HL,15616 ;erase msgs
00540      LD DE,15617 ;same as
00550      LD BC,127 ;print string$
00560      LD (HL),32 ;(128,32)
00570      LDIR

```

```

00580 ;
00590 ; FIND DIRECTORY TRACK
00600 ;
00610      LD HL,TRKBUF
00620      LD C,1 ;drive #
00630      LD D,0 ;track #
00640      LD E,0 ;sector #
00650      CALL 4777H ;info to trkbuf
00660      LD A,(TRKBUF+2) ;dir track#
00670      RES 7,A ;allow for DOS + 3
00680      LD D,A ;store it in D
00690 ;
00700 ; READ DIR TRACK INTO TRKBUF
00710 ;
00720      LD HL,TRKBUF
00730      LD B,18 ;loop counter
00740 LOOP1 CALL 4B45H ;read sys sector
00750      INC E ;next sector
00760      PUSH DE ;save trk & sect
00770      LD DE,256
00780      ADD HL,DE ;next buf loctn
00790      POP DE ;get trk & sect
00800      DJNZ LOOP1 ;repeat
00810 ;
00820 ; REMOVE PASSWORD PROT IN TRKBUF
00830 ;
00840      PUSH DE ;save trk#
00850      LD HL,TRKBUF+0CEH
00860      LD A,96H ;stuff 96h into
00870      LD (HL),A ;gat + 0ceh
00880      INC HL
00890      LD A,42H ;stuff 42h into
00900      LD (HL),A ;gat + 0cfh
00910      LD HL,TRKBUF+512 ;dir
00920      LD B,128 ;loop counter
00930      LD DE,16
00940 LOOP2 LD A,(HL) ;get chr there
00950      BIT 4,A ;bit 4 is 0 = file is
00960      ;not active
00970      JR Z,NOPROT ;so jump
00980      RES 0,A ;set prot level
00990      RES 1,A ;to full
01000      RES 2,A
01010      LD (HL),A ;store modified
01020      ;back in trkbuf
01030      ADD HL,DE ;point hl 16
01040      ;bytes futher up
01050      PUSH HL ;in trkbuf-saveit
01060      POP IX ;put hl into ix
01070      LD A,96H ;lsb of no pwr
01080      LD (IX+0),A ;put in ix + 0 &
01090      LD (IX+2),A ;ix + 2
01100      LD A,42H ;msb of no pwr
01110      LD (IX+1),A ;put 42H in ix + 1 &
01120      LD (IX+3),A ;ix + 3
01130 NEXT2 ADD HL,DE ;next file
01140      DJNZ LOOP2 ;repeat
01150 ;
01160 ; WRITE NEW TRKBUF TO DIR TRACK
01170 ;
01180      LD HL,TRKBUF

```



```

01190      LD      C,1      ;c = drive#
01200      POP     DE      ;get trk#
01210      LD      E,0      ;e = sector#
01220      LD      B,18     ;loop counter
01230 LOOP3 CALL  4768H     ;write dlr sectr
01240      CALL  4759H     ;ls drive busy
01250      INC     E        ;next sector
01260      PUSH    DE       ;save trk & sectr#
01270      LD      DE,256
01280      ADD     HL,DE
01290      POP     DE       ;get trk & sectr#
01300      DJNZ    LOOP3    ;repeat
01310 ;
01320 ; PASSWORD PROTECTION DISABLED
01330 ; SO DISPLAY MSG6 & MSG7
01340      LD      DE,15616
01350      LD      HL,MSG6
01360      CALL    CHROUT
01370      LD      DE,15744
01380      LD      HL,MSG7
01390      CALL    CHROUT
01400      CALL    49H       ;rom inkey$
01410      LD      HL,15616 ;erase
01420      LD      DE,15617 ;msg 6 & 7
01430      LD      BC,191
01440      LD      (HL),32
01450      LDIR
01460      JP      BEGIN     ;repeat
01470 NOPROT ADD  HL,DE
01480      JR      NEXT2    ;jump to next2
01490 ;
01500 ; SUBROUTINES
01510 ;
01520 QUIT  CALL  1C9H       ;rom cls
01530      JP      402DH     ;back to dos
01540 ;
01550 CHROUT LD  A,(HL)     ;chr into a
01560      OR      A         ;ls it 0
01570      RET     Z        ;yes - return
01580      LD      (DE),A     ;chr to screen
01590      INC     DE        ;next screen
01600      INC     HL        ;loc & next chr
01610      JR      CHROUT   ;repeat
01620 ;
01630 ; SCREEN MESSAGES & BUFFER
01640 ;
01650 MSG1   DEFB  143
01660      DEFB  244
01670      DEFB  245
01680      DEFB  246
01690      DEFB  32
01700      DEFB  239
01710      DEFB  32
01720      DEFM  '1986 Wolstrup Software'
01730      DEFB  0
01740 MSG2  DEFM  '**** MASTER KEY ****'
01750      DEFB  0
01760 MSG3  DEFM  'Remove password protect
ion on all files.'
01770      DEFB  0
01780 MSG4  DEFM  'Insert target disk in drive:1'

```

```

01790      DEFB  0
01800 MSG5  DEFM  'and press ENTER or Q to quit'
01810      DEFB  0
01820 MSG6  DEFM  'Password protection
removed....'
01830      DEFB  0
01840 MSG7  DEFM  'Press any key to continue'
01850      DEFB  0
01860 TRKBUF DEFS  4608
01870      END    START

```

TRSTimes-ON-DISK

Issue #1 of TRSTimes-ON-DISK is now available. It features the following programs from the January, March and May 1988 Issues:

POKEDEM1/BAS	M4	TRSDOS 6.2 - 6.3
INKROUT/BAS	M1,3,4	ALL
CAT/CMD	M3	LDOS 5.1.4
CAT/SRC	M3	LDOS 5.1.4
STUTOR/BAS	M1,3	ALL
KILL/CMD	M4	TRSDOS 6.2 - 6.3
KILL/SRC	M4	TRSDOS 6.2 - 6.3
CUSTCMD/BAS	M4	TRSDOS 6.2 - 6.3
POKEDEM2/BAS	M4	TRSDOS 6.2 - 6.3
JUMP80/BAS	M4	ALL
CAT13/CMD	M3	TRSDOS 1.3
CAT13/SRC	M3	TRSDOS 1.3
STUTOR34/BAS	M3,4	ALL
COPYAID/BAS	M3	NEWDOS/80
TRSTEXT/BAS	M4	ALL
CLOCKMOV/BAS	M4	TRSDOS 6.2 - 6.3

Included on this disk will be two bonus assembly language programs that are just too long to publish in TRSTimes:

COPYAID/CMD is the enhanced machine language version of COPYAID/BAS for Model 3 NEWDOS/80.

DFIX89/CMD is the ultimate datefix utility for Model 4 TRSDOS 6.2. that fixes both system and data disks - CORRECTLY.

TRSTimes-ON-DISK #1 is reasonably priced:

U.S. & Canada:	\$5.00 (U.S.)
Anywhere else:	\$7.00 (U.S.) shipped air-mail

Send check or money order to:

TRSTimes-ON-DISK
20311 Sherman Way #221
Canoga Park, CA. 91306

Model 4 - TRSDOS 6.2.

EDTASM (patched)
or other Editor/assembler

MASTERKEY - LISTING 2

Note: This program will work only with
single-sided, double-density disks.

```

00100 ;
00110 ;Filename = MKEY4/SRC
00120 ;Model 4 - TRSDOS 6.X.X.
00130 ;& DOSPLUS IV
00140 ;1988 Wolstrup Software
00150 ;Removes password protection
00160 ;from all files on disk in
00170 ;drive 1. Single sided - double density only
00180 ;Written by Lance Wolstrup
00190 ;
00200 ;
00210 ;
00220 ;
00240 PSECT 2600H
00250 START CALL NOCURS ;cursor off
00260 CALL CLS ;erase screen
00270 LD HL,0019H ;cursor @1,25
00280 CALL LOCATE
00290 LD HL,MSG1 ;hl --> msg1
00300 CALL CHROUT ;display it
00310 LD HL,011EH ;cursor @1,30
00320 CALL LOCATE
00330 LD HL,MSG2 ;hl --> msg2
00340 CALL CHROUT ;display it
00350 LD HL,0214H ;cursor @2,20
00360 CALL LOCATE
00370 LD HL,MSG3 ;hl --> msg3
00380 CALL CHROUT ;display it
00390 LD HL,0300H ;cursor @3,0
00400 CALL LOCATE
00410 LD B,80 ;b = loop
00420 LD A,131 ;a = chr$(131)
00430 LINE80 CALL DSP ;display it
00440 INC L ;crsr to next
00450 ;horiz pos.
00460 DJNZ LINE80 ;go until b is 0
00470 BEGIN LD HL,0500H ;cursor @5,0
00480 CALL LOCATE
00490 LD HL,MSG4 ;hl --> msg4
00500 CALL CHROUT ;display it
00510 LD HL,0600H ;cursor @6,0
00520 CALL LOCATE
00530 LD HL,MSG5 ;hl --> msg5
00540 CALL CHROUT ;display it
00550 CALL CURSOR ;display cursor
00560 INPUT1 CALL INKEY ;inkey$
00570 CP 51H ;is it Q

```

```

00580 JP Z,QUIT ;if Q-jump
00590 CP 71H ;is it q
00600 JP Z,QUIT ;if q-jump
00610 CP 0DH ;is it ENTER
00620 JR Z,CNTNUE ;if enter jump
00630 JR INPUT1 ;jump
00640 CNTNUE CALL NOCURS ;cursor off
00650 CALL ERASE ;cls from line 5
00660 ;to eod
00670 ;
00680 ;find dir track
00690 ;
00700 LD HL,TRKBUF ;hl --> trkbuf
00710 LD C,1 ;c = drive number
00720 LD D,0 ;d = track 0
00730 LD E,0 ;e = sector 0
00740 LD A,49 ;@rdsec
00750 RST 28H ;@rdsec svc
00760 LD A,(TRKBUF+2) ;get dir trk
00770 RES 7,A ;for M3 Dos+
00780 LD D,A ;store it in d
00790 ;
00800 ;Read directory track into trkbuf
00810 ;
00820 LD HL,TRKBUF ;hl --> trkbuf
00830 LD A,85 ;set up for @rdssec
00840 LD B,18 ;b = times to loop
00850 LOOP1 PUSH AF ;save svc number
00860 RST 28H ;@rdssec svc
00870 INC E ;next sector
00880 PUSH DE ;save trk & sector #
00890 LD DE,256 ;add 256
00900 ADD HL,DE ;hl --> buf location
00910 POP DE ;restore trk & sector
00920 POP AF ;restore svc number
00930 DJNZ LOOP1 ;repeat until b = 0
00940 ;
00950 ;remove disk password & file password
;protection in trkbuf
00960 ;
00970 PUSH DE ;save track #
00980 LD HL,TRKBUF+0CEH ;point hl to
00990 ;disk password
01000 LD A,96H ;store 96h in a
01010 LD (HL),A ;store 96h in 0ceh
01020 ;of gat sector
01030 INC HL ;next byte
01040 ;of disk password
01050 LD A,42H ;store 42h in a
01060 LD (HL),A ;store 42h in 0cfh
01070 ;of gat sector
01080 LD HL,TRKBUF+512 ;hl --> 1st
;dir entry
01090 LD B,128 ;b = times to loop
01100 LD DE,16 ;16 to hl

```



```

01110 LOOP2 LD A,(HL) ;chr in hl to a
01120 BIT 4,A ;if bit 4 = 0 then
01130 ;file is not active
01140 JR Z,NOPROT ;so jump
01150 RES 0,A ;file is active
01160 RES 1,A ;so reset bytes
01170 RES 2,A ;0,1 & 2
01180 LD (HL),A ;modified buffer
01190 ;back in trkbuf
01200 ADD HL,DE ;point hl 16 bytes
01210 ;further in trkbuf
01220 PUSH HL ;and save it
01230 POP IX ;restor value to ix
01240 LD A,96H ;store 96h in a
01250 LD (IX+0),A ;96h in ix + 0
01260 LD (IX+2),A ;96h in ix + 2
01270 LD A,42H ;42h in a
01280 LD (IX+1),A ;42h in ix + 1
01290 LD (IX+3),A ;42h in ix + 3
01300 NEXT2 ADD HL,DE ;16 more to hl
01310 DJNZ LOOP2 ;repeat until b = 0
01320 ;

```

01330 ;write the modified trkbuf back to directory track

```

01340 ;
01350 LD HL,TRKBUF ;hl --> to trkbuf
01360 LD C,1 ;c = drive number
01370 POP DE ;get trk number
01380 LD E,0 ;e = sectr number
01390 LD A,54 ;set up @wrsec
01400 LD B,18 ;b = times to loop
01410 LOOP3 LD A,47 ;set up for @rsict
01420 RST 28H ;@rsict svc
01430 LD A,54 ;set up @wrsec
01440 RST 28H ;@wrsec svc
01450 INC E ;next sector #
01460 PUSH DE ;save trk & sectr#
01470 LD DE,256 ;use de to
01480 ADD HL,DE ;add 256 to hl
01490 POP DE ;get trk & sectr#
01500 DJNZ LOOP3 ;repeat until b = 0
01510 ;

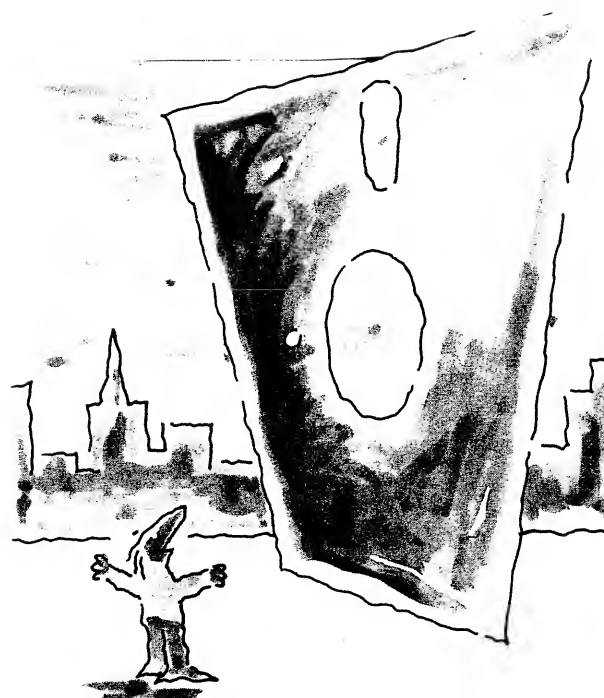
```

01520 ;password protection disabled - so display msg6 & msg7

```

01530 ;
01540 LD HL,0500H ;cursor at 5.0
01550 CALL LOCATE
01560 LD HL,MSG6 ;point hl to msg6
01570 CALL CHROUT ;display it
01580 LD HL,0700H ;cursor at line 7
01590 CALL LOCATE ;column 0
01600 LD HL,MSG7 ;point hl to msg7
01610 CALL CHROUT ;display it
01620 CALL INKEY ;get key press
01630 CALL ERASE ;erase from line 5
01640 ;to end of screen
01650 JP BEGIN ;go do it again
01660 NOPROT ADD HL,DE ;add 16 to hl
01670 JR NEXT2 ;go back to next2

```



```

01680 ;
01690 ;subroutines
01700 ;
01710 QUIT CALL CURSOR ;turn cursor on
01720 CALL CLS ;erase screen
01730 LD HL,0 ;hl = 0 means no error
01740 LD A,22 ;set up for @exit svc
01750 RST 28H ;@exit svc
01760 ;
01770 NOCURS LD A,15 ;a = chr$(15)
01780 CALL DSP ;turn off cursor
01790 RET
01800 ;
01810 CURSOR LD A,14 ;a = chr$(14)
01820 CALL DSP ;turn on cursor
01830 RET
01840 ;
01850 CLS LD A,1CH ;a = chr$(28)
01860 CALL DSP ;home cursor
01870 LD A,1FH ;a = chr$(31)
01880 CALL DSP ;erase to end of display
01890 RET
01900 ;
01910 DSP LD C,A ;put chr in a into c
01920 LD A,2 ;set up for @dsp svc
01930 RST 28H ;@dsp svc
01940 LD A,C ;chr in c back into a
01950 RET
01960 ;
01970 LOCATE LD A,15 ;set up for @vdctl svc
01980 LD B,3 ;param to move cursor
01990 RST 28H ;@vdctl svc
02000 RET

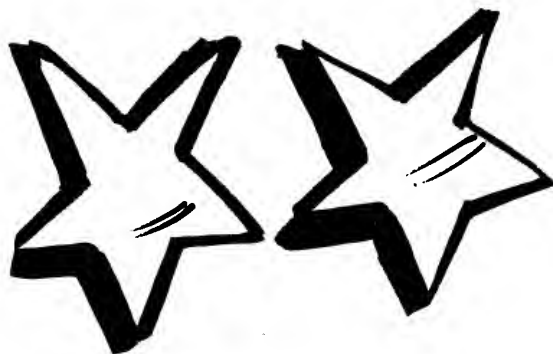
```



```

02010 ;
02020 CHROUT LD A,(HL) ;chr in hl into a
02030 OR A ;test if chr$(0)
02040 RET Z ;return if chr$(0)
02050 CALL DSP ;display chr
02060 INC HL ;next chr
02070 JR CHROUT ;jump to chROUT
02080 ;and do it again
02090 ;
02100 INKEY LD A,1 ;set up @key svc
02110 RST 28H ;@key svc
02120 RET
02130 ;
02140 ERASE LD HL,0500H ;cursor on line 5
02150 CALL LOCATE ;column 0
02160 LD A,1FH ;erase to end
02170 CALL DSP ;of display
02180 RET
02190 ;
02200 ;screen messages & buffer
02210 ;
02220 MSG1 DEFB 21
02230 DEFB 143
02240 DEFB 244
02250 DEFB 245
02260 DEFB 246
02270 DEFB 32
02280 DEFB 239
02290 DEFB 21
02300 DEFB 32
02310 DEFM '1988 Wolstrup Software'
02320 DEFB 0
02330 MSG2 DEFM '**** MASTER KEY ****'
02340 DEFB 0
02350 MSG3 DEFM 'Remove password
protection on all files.'
02360 DEFB 0
02370 MSG4 DEFM 'Insert target disk in
drive :1'
02380 DEFB 0
02390 MSG5 DEFM 'and press (ENTER)
or Q to quit'
02400 DEFB 0
02410 MSG6 DEFM 'Password protection
removed....'
02420 DEFB 0
02430 MSG7 DEFM 'Press any key to continue'
02440 DEFB 0
02450 TRKBUFF DEFS 4608
02460 END START

```



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xT.CAD

Review by Tim Sewell

Owners of a TRS-80 Model 3 or 4 with the High Resolution board have always been faced with a problem..."Now that I have all of this graphic capability, what am I gonna do with it?". Sure, you can use it to draw pictures or play games but the question is what can you DO with it.

Well, one answer is a computer assisted drafting program called xT.CAD. With xT.CAD you can plot and put together mechanical drawings that would normally take you hours to draw by hand. With it you can "zoom" in for detailed work or scale down for an over all view of the drawing. You can take a part of your drawing and copy, move, rotate, erase, or display as a mirror image. Drawing circles or partial curves are a snap and can be done by plotting them on the screen or entering geometric data.

xT.CAD works differently from other DRAWING programs. The computer stores every step you take while drawing into memory. By searching the memory, you can return to any exact point where you did your work and correct or modify the drawing. In this manner you can have a drawing that is up to 10 times your screen size in memory. The computer simply multiplies or divides the data and increases or decreases the screen display.

The enlargement or "zoom" function is one of the more impressive features of the program. Say you have completed your drawing of the house of the future (figure 1) and you want to add some detail to the arch way. You move your "pointer" to the spot on your drawing you want to detail and enlarge it up to 10 times its size. The enlarged drawing will be in High Resolution, not low resolution blocks like most drawing programs (figure 2). You can now add some solar windows to the arch way as well as one of those "stick" people that everybody has been talking about (figure 3). When you are finished, you can scale back down to the original drawing size and view your completed work (figure 4).

Another excellent feature of xT.CAD is the ability to store and recall any number of saved overlays for upgrading or starting new drawings. Using these "basics" will save you hours of drawing new screens from scratch. If you use the program for architecture or floor designs, the time you save not having to re-draw floor plans will give you more time to use your creative talents. Electronics designers will

benefit by saving their drawings one "sheet" at a time. Each sheet can be edited for maximum detail of the over all picture.

My one and only "gripe" about the program is its lack of ability to allow you to erase and touch up your mistakes. If you draw a circle and then decide you need to put something partially in front of it, you have to remove the entire circle and re-draw an arc. You can't simply draw what you need and erase the part you don't want over-lapping. I doubt if a feature like this is possible, though, because of the way xT.CAD stores its data into memory for recall later if needed.

xT.CAD is best used with a plotter for maximum drawing ability but excellent results can also be obtained by using a dot matrix printer. The drawings used in this article were all done on a Radio Shack DMP-200 printer and as you can see, the results are quite nice.

xT.CAD can be used with both the Radio Shack and The Graphyx Solution high resolution boards and takes full advantage of Micro-Lab's mouse adaptor as well as the Tandy GT2000 or Houston Instrument's "True-Grid" family of digitizers.

I found xT.CAD easy to install and was drawing within minutes of reading the manual. The manual is well written but tends to become a bit technical when it comes to drawing arcs and coordinating input formats. A slight knowledge of geometry is recommended when using these functions.

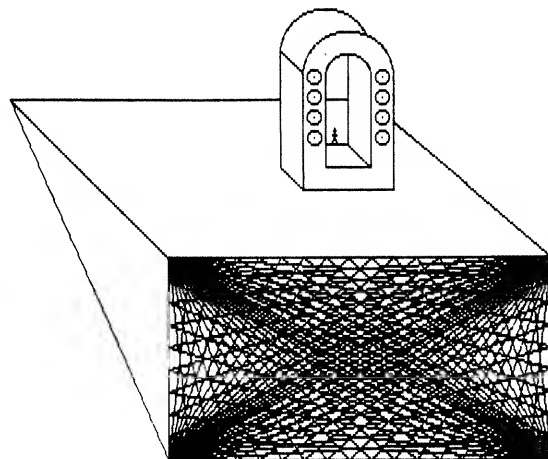
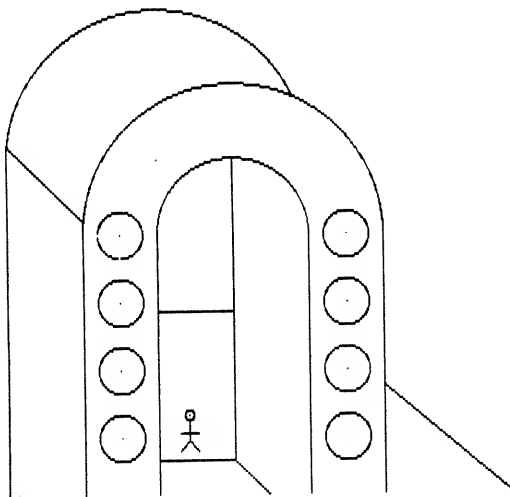
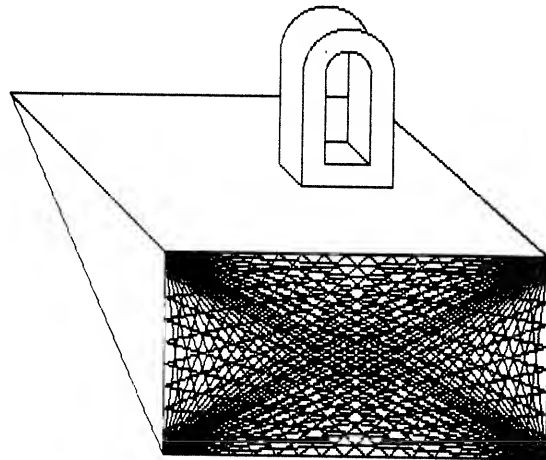
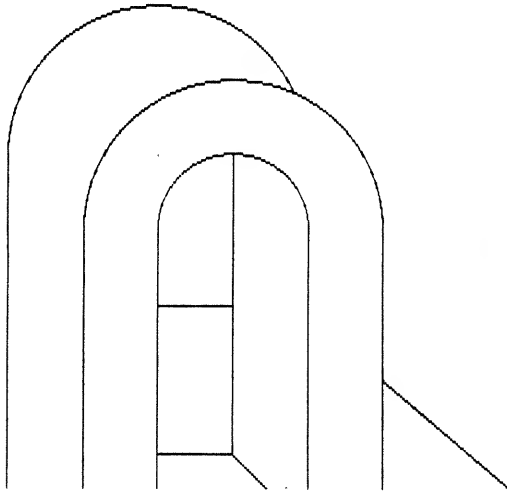
Be advised that xT.CAD is a DRAFTING program. It is intended for two dimensional mechanical drawings and applications. It is not intended to be used as a DRAWING program. There are several other programs available to DRAW with.

I have only talked about a few of the many features available with xT.CAD. This is without a doubt one of the finest and most powerful programs available for the TRS-80 Model 3 and 4. If you have a Hi-Resolution board installed, you should seriously consider adding xT.CAD to your library. It is a first class piece of software; the kind that makes you realize that you don't really need a PC clone.

For more information about xT.CAD contact:

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TIM'S ART GALLERY



HUNTING FOR BURIED TREASURE

Peeking & Poking Model 4 (in Model III mode)

by Lance Wolstrup

The Model 4 is incredible. It is actually three computers in one: A Model 4, a Model III, and a CP/M machine. As one who owned a Model III long before purchasing a Model 4, I use the III mode frequently. Whenever there, though, I miss the 80 column screen display. Thinking that it ought to be possible to capture Model 4's 80x24 screen while in Model III mode, I spent a little time with the Technical Reference Manual.

Sure enough! It can be done. Even better, it can be done with simple Basic code. Great!! An 80x24 screen while in Model III mode.

Well, almost!!!

We cannot get a true 80x24 screen. Instead we can get two separate screens that can be viewed simultaneously, and accessed individually.

The first screen has 1024 pixels. It has twelve true 80 column lines (0-11) plus the first 64 columns of line 12.

These pixels can be addressed using their normal PRINT@ numbers (0-1023) or PEEK and POKE addresses (15360-16383).

The second screen begins immediately where the first screen ends. That is, it begins on the 65th column on line 12 and goes on for 896 pixels. This breaks down to:

Line 12 has the remaining 16 pixels to create the 80 column line not finished by screen 1.

Lines 13-23 all have 80 pixels.

This screen is also addressed by normal PRINT@ numbers (0-895) or PEEK and POKE addresses (15360-16255).

PORT &H84 controls the video functions of the Model 4 in its native mode, as well as the III mode. Bit 2 of this port determines whether 80 or 64 is used as the screen width:

If bit 2 is ON (1), 80 columns are employed.

If bit 2 is OFF (0), the 64 column mode is active.

Bit 7 is the 'Page' bit. It controls which of the two screens will be active:

If bit 7 is OFF (0), the top screen is addressable.

If bit 7 is ON (1), the bottom screen can be used.

With this information let us boot up our Model 4 in Model III mode. You can use any available Model III DOS. This little goodie works on all of them. Get into Basic and type: **OUT &H84,4 <ENTER>**

Wow, what a mess! The screen changed to 80 columns, but as everything is still geared to 64 columns, things look somewhat lopsided.

Now type: **OUT &H84,0 <ENTER>**

This restores the screen to a normal 64 column display and we can now write a simple program to show off our Model III with 80 columns.

5 CLEAR 500

10 OUT &H84,4 'bit 2 ON - use screen 1

20 CLS

30 PRINT@33,'80 Column Mode'

40 PRINT@116,'Screen 1'

50 PRINT@160,STRING\$(80,131)

55 POKE 16383,191 'show end of screen 1

60 OUT &H84,132 'bit 7 & 2 ON - use screen 2

70 CLS

80 PRINT@16 + 33,'80 Column Mode'

90 PRINT@16 + 116,'Screen 2'

100 PRINT@16 + 160,STRING\$(80,131)

105 POKE 16255,191 'show end of screen 2

110 IF INKEY\$ = "" THEN 110

120 OUT &H84,0 'restore 64 column mode

Keep in mind that, because screen 2 begins on column 64 of line 12, normal screen lines for screen 2 begin @16, 96, 176, etc. This minor confusion can easily be conquered by simply adding 16 to the normal PRINT@ numbers.

(See lines 80 - 100 in the above program.)

Along with a simulated 80x24 screen, we have gained some powerful tools. For example, the CLS command will erase the current screen while leaving the other screen untouched. PRINT CHR\$(31), while in screen 1, will erase ONLY to the end of that screen. It will NOT interfere with whatever is displayed on screen 2. Not Bad!

Let's use the Model III's new capability and have some fun at the same time. Type in the program listing to CHANGO80/BAS. It is a game written some years ago for Basic Computing (80 U.S). Originally written for the CoCo, it has been adapted to fit the Model III mode 80 column screen.

The object of the game is to turn eight boxes from white to black. The following rules apply:

To change a box from white to black, or from black to white, press the number associated with the box. The box will change IF

its immediate neighbor to the right is white

AND all other boxes to the right are black.

Trying to change a box not fitting this description will cost a move. Perfect score is 169 moves.

The rules are displayed when the program is first RUN, but can be redisplayed at any time by pressing R. Pressing Q will Quit the game and return to Basic in 64 column mode. Have fun. It "ain't" easy.

CHANGO80/BAS

a game for

Model 4 In Model III mode ONLY

```

10 GOTO 100
30 OUT &H84,132:RETURN
40 OUT &H84,4:RETURN
50 POKE 16409,1:
I$ = INKEY$:
IF I$ = " THEN 50 ELSE RETURN
60 FOR X=1 TO 3: PRINT@LO,HI$;
LO = LO + 80:NEXT:RETURN
70 FOR X=1 TO 3:PRINT@LO,LO$;
LO = LO + 80:NEXT:RETURN
80 GOSUB 30:CLS:
PRINT@131,"R U L E S :":PRINT@278,
"Box no.8 can be changed at any time.":
PRINT@353,"Box no.7 can be changed if box
no.8 is white."
90 PRINT@421,"Other boxes can be changed IF
the box to its immediate right is white":
PRINT@535,"AND":
PRINT@597,"ALL other boxes to its right are
black.":
PRINT@679,"OBJECT: Change all boxes to
black.":
PRINT@844,"Press any key to continue ":
RETURN
100 CLEAR 500:M = 0:B = 255
110 FOR X=1 TO 9:READ A:
A$ = A$ + CHR$(A):NEXT:
A$ = A$ + "1987 Lance Wolstrup":
DATA 21,143,244,245,246,32,239,32,21
120 B$ = "**** C H A N G O 8 0 ****":
C$ = "A puzzle for the mentally superior":
ER$ = STRING$(80,32):L$ = STRING$(80,131):
HI$ = STRING$(7,191):LO$ = STRING$(7,32)
200 GOSUB 30:CLS:GOSUB 40:CLS:
PRINT@27,A$:PRINT@108,B$:
PRINT@183,C$:PRINT@240,L$
210 LO = 642:
FOR Y=1 TO 3:
FOR X=LO TO LO + 70 STEP 10:
PRINT@X,HI$:NEXT:
LO = LO + 80:NEXT:
Y = 1:FOR X=484 TO 554 STEP 10:
PRINT@X,Y:Y = Y + 1:NEXT
300 GOSUB 80
310 GOSUB 50:CLS
320 PRINT@129,"Moves: ";USING"####":M:
PRINT@285,"Change which block: "
330 GOSUB 50:
IF I$ = "Q" THEN OUT &H84,0:CLS:END
ELSE IF I$ = "R" THEN GOSUB 80:GOTO 310
ELSE I = VAL(I$)
340 IF I OR I8 THEN 330
ELSE LO = 642 + ((I-1)*10):GOSUB 40:
ON I GOTO 480,470,460,450,440,430,420,410
410 IF B AND 1 THEN B = B-1:GOSUB 70:
GOTO 500

```

```

ELSE B = B + 1:GOSUB 60:GOTO 500
420 A = B AND 3:
IF A = 3 THEN B = B-2:GOSUB 70:GOTO 500
ELSE IF A = 1 THEN B = B + 2:GOSUB 60:
GOTO 500
ELSE 500
430 A = B AND 7:
IF A = 6 THEN B = B-4:GOSUB 70:GOTO 500
ELSE IF A = 2 THEN B = B + 4:GOSUB 60:
GOTO 500
ELSE 500
440 A = B AND 15:
IF A = 12 THEN B = B-8:
GOSUB 70:GOTO 500
ELSE IF A = 4 THEN B = B + 8:GOSUB 60:
GOTO 500
ELSE 500
450 A = B AND 31:
IF A = 24 THEN B = B-16:GOSUB 70:GOTO 500
ELSE IF A = 8 THEN B = B + 16:GOSUB 60:
GOTO 500
ELSE 500
460 A = B AND 63:
IF A = 48 THEN B = B-32:GOSUB 70:GOTO 500
ELSE IF A = 16 THEN B = B + 32:GOSUB 60:
GOTO 500
ELSE 500
470 A = B AND 127:
IF A = 96 THEN B = B-64:GOSUB 70:GOTO 500
ELSE IF A = 32 THEN B = B + 64:GOSUB 60:
GOTO 500
ELSE 500
480 A = B AND 255:
IF A = 192 THEN B = B-128:GOSUB 70:GOTO 500
ELSE IF A = 64 THEN B = B + 128:GOSUB 60:
GOTO 500
500 IF B = 0 THEN GOSUB 30:GOTO 510
ELSE GOSUB 30:M = M + 1:GOTO 320
510 PRINT@256,ER$:
IF M = 169 THEN
PRINT@285,"Perfect score - GENIUS":
GOTO 600
520 IF M < 180 THEN
PRINT@288,"Very good score":
GOTO 600
530 IF M < 200 THEN
PRINT@289,"Average score":
GOTO 600
540 IF M < 220 THEN
PRINT@286,"Below average score":GOTO 600
550 PRINT@289,"Terrible score"
600 PRINT@439,"Would you like to try again
(Y/N) ";
610 POKE 16409,1:I$ = INKEY$:
IF I$ = "N" THEN OUT &H84,0:CLS:END
ELSE IF I$ = "Y" THEN M = 0:B = 255:
GOSUB 40:GOTO 210
ELSE 610

```

PRINT-SHOP & PRINT-MASTER FONTS FOR DOTWRITER

P2DOT V.1.0

review by Steven C. Jerkins

The proliferation of Desktop publishing for the MS-DOS world is proceeding at warp speed. The TRSDOS world has had desktop publishing for many years. Yes, I refer to "Dotwriter".

A few months ago, I ran across a program that was labeled as a Printshop to Dotwriter graphics converter. I downloaded it but, having neither a copy of Dotwriter myself nor access to "Printshop" graphics files, it languished on a disk of downloads. This past weekend, I found three files of "public domain" graphics for the Printshop program. Well, I dug out the copy of P2DOT, converted the graphics, and beat feet to a compadre's house to use his dot matrix printer and Dotwriter.

P2DOT consists of three files:

LISTER/CMD	Lists the names and number of the Graphics in the Printshop file
P2DOT/DOC	Instructions on how to use.
P2DOT7/CMD	Makes 7 bit Dotwriter fonts.
P2DOT8/CMD	Makes 8 bit Dotwriter fonts.

To use P2DOT you must first have access to Print Shop or Print Master graphics files. Converting them to a disk you can use is your own problem (Supercross or downloading public domain graphics is the solution).

First, obtain a listing of the names and number of the graphics. LISTER/CMD is used for this. LISTER accesses the /NAM (Print Shop) or the /SHP (Print Master) and produces a hardcopy of the names and number.

Run the appropriate P2DOT program (P2DOT7 for 7 bit fonts, P2DOT8 for 8 bit fonts). You will be prompted for the name for the graphics file (/DAT for Print Shop, /SDR for Print Master) then the graphic number.

The graphic will then be partially displayed on the screen in a TRS block graphic approximation along with four options:

C - Convert Graphic to Dotwriter
M - Mirror Image (turn around left to right)
R - Reverse Image (complement all pixels - make like a "photo negative")
OTHER - Any other key will return to the Prompt for a new graphics file name and number.

Upon hitting the "C" for convert you are prompted to insert the disk for your Dotwriter fonts.

After hitting <ENTER> you are prompted for the name of the file to save the Dotwriter font to. The

screen will display what character will call the graphic from Dotwriter.

You may keep adding to a dotwriter file until you have 53 graphics added to it then you have to start on a new file. Print Shop and Print Master can have up to 54 graphics in them so a given graphic file will have to be split into two Dotwriter files.

One thing is not clearly explained in the documentation. If you hit <ENTER> at any filename prompt, the program will retain the last value. This makes processing a file easier.

System Requirements: P2DOT is written for Model III mode. It works well under LDOS 5.3 on a Model 4. I have not tried it under TRSDOS 1.3. It should work under Model I LDOS as well.

Limitations: P2DOT is compiled BASIC using ZBASIC 3.0. ZBASIC is a memory hog. If you compile a ZBASIC file with himem at one point and you try to run it later with more programs resident to lower the himem pointer you may get a "Not Enough Memory" error from the program. I had this problem as my Aerocomp harddisk driver resides in himem. I had to reboot without KI/DVR resident to free up enough memory to use P2DOT.

The author requests a \$10.00 donation as an incentive to keep supporting TRS-80 computers. I heartily recommend sending the donation if you find the program useful. I am sending him my \$10.00 along with some suggestions.

P2DOT wishlist: A Model 4 native mode version so Model 4 Dotwriter users don't have to shift DOS to convert graphics. Compile to support the hires board so the graphics will appear true on the screen instead of in block graphics approximation. (Compiling in Mode 9 vice Mode 7 should do this - Zbasic command) An "AUTO" mode to automatically extract a whole /DAT file. The program as I received it will work well if you only have a two drive machine and have to shift disks but it is redundant to do so when you are using a hard drive or have more than two Disk drives.

In conclusion, I would call P2DOT a very useful program if you are in need of Desktop publishing capability on a TRS-80 machine. I hope to see Paul F. Barnett producing more such useful programs and continuing to support the TRS-80 world.

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REC Newsletter

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Over the past months I have received several letters saying something to the effect of: "If you are still in business, we would like to subscribe!" I don't blame any of you for the obvious caution when it comes to subscribing to magazines, especially the ones catering to computers. It seems that even long established publications with respectable reputations will eventually do a number on you.

I continued to subscribe to 80 Micro even after they cut out TRS-80 coverage. I also own MS-DOS machines, so it just seemed reasonable to continue on with them. Now that they have officially folded, I receive a notice that the remainder of my subscription will be filled with PC-WORLD. Very disappointing, but at least I am getting something for my money.

The less respectable companies will simply fold and you, the subscriber, can take a flying leap. You will usually never get your unused money back. This has happened to me in the past and, obviously, to many of you as well. TRSTimes will NOT do business that way.

I stated in Issue #1 that TRSTimes was a commitment for one year. A promise was made that 6 issues, hopefully entertaining and informative, would see the light of day in a timely manner in 1988. With this issue, I hope you agree that the promises have been kept so far.

The difficulty appears, however, when a new subscriber wants to start with, for example, Issue #3. If I accepted that subscription I would automatically commit myself to producing at least 9 issues, instead of 6. That is why TRSTimes advertises this offer: "subscribe anytime in 1988 and receive all back issues by return mail." This is not only a nice feature, it is also policy. This leads to the next question also asked frequently: "Will you continue in 1989?"

I originally limited TRSTimes to one year because I had no idea of the support it would receive, the amount of work involved, if it could pay for itself, and most importantly, I didn't want to promise more than I could deliver.

So far the support has been tremendous, thank you all, it has been one heck of a lot of work and, yes, TRSTimes is self-supporting. I don't have a firm answer about next year at this time. The plan is to take some time not even thinking about TRSTimes, maybe take my sons down to San Diego for a Cincinnati Reds 3-game sweep of the Padres (yes, we are all die-hard Reds fans). Then I will ask my wife if she will stay married to me for another year of TRSTimes and let you know her response in the next issue.

Meanwhile, this issue brings a nice variety of TRS-80 information. Tim Sewell, the Guru of GENie, talks about some fine writing tools available in the public domain. He has also played around with XT.CAD and reports his opinion on this program.

Eric Bagai recently bought a Hi-Rez board from Micro-Labs. Does he like it? Well, read his review and DRAW your own conclusion.

Roy Beck continues his CP/M writings with an in-depth tutorial on the PIP command. When it comes to CP/M, I am a novice, but I learned a whole bunch from that one.

Steven Jerkins gives us a nice review/tutorial on Paul Barnett's program that allows us to use all the fancy fonts from PRINT-SHOP and PRINT-MASTER with our own DOTWRITER.

HUNTING FOR BURIED TREASURE focuses on the Model III mode of the Model 4. It shows us that we can get a full 80x24 screen from BASIC.

The other Basic program, STATES AND CAPITALS, is a geography tutorial for kids, or adults who wants to broaden their knowledge of the U.S.A.

Lastly, MASTERKEY is the long promised assembly language program that will strip passwords from files. Both a Model III LDOS version and a Model 4 TRSDOS 6.2. version is here.

Thank you to all the contributors for their hard work that produced this excellent material.

NEWSFLASH

We have just received an advance copy of David Goben's latest effort, called T62DOSXT.

It is a complete patching program that will upgrade your TRSDOS 6.2. disks to accept dates all the way to December 31, 1999 and is 100% compatible with the dating standards set by LS-DOS 6.3. and LDOS 5.3. T62DOSXT not only extends the dating capabilities, it ENHANCES it as well. For example, date and time entries are now more lax, in that single-digit values no longer need to be padded with a leading zero. Running JCL files will no longer abort if they execute a SYSTEM (SYSTEM = d) command. New SVC's introduced with LS-DOS 6.3. are now supported. Also, ALL known system bugs have been fixed, INCLUDING those not discovered until in LS-DOS 6.3.

The T62DOSXT package also includes a baker's dozen of OPTIONAL system patches, such as boot-up in all-caps, default 2-sided disk formatting, faster MEMdisk formatting, and scroll-protect of up to 15 lines (and fully supported by the @VDCTL SVC).

Additional programs are also included:

UTILITY4 - Model 4 zap program. **NEWDOS** - a NEWDOS CONV-like utility. **ONEPASS** - single pass backup utility. **DATECONV** - convert disk to new dating system. **UNDATE** - UN-convert a disk, if the need arises.

T62DOSXT is only \$18.00 (U.S.), plus \$2.00 shipping & handling for U.S. destinations. Canada, Mexico, APO, FPO, and US territories with US zip codes add \$3.00 S&H. \$7.00 S&H anywhere else.

Send your order to:

DAVID GOBEN
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WILLIMANTIC, CT. 06226

Until September.....think TRS-80
Lance W.