TRS-80™
NEWSLETTER

South Bay TRS-80 Users Group

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ALSO!! QUESTIONAIRE CENTERFOLD

SBUG meetings are held the 3rd Tuesday of each month in the
north east corner of Dysans' building at:
                                  5401 Patrick Henry Drive
      Time - 7:15 to 10:30 PM   Santa Clara, Ca

            December 21, January 18, Feburary 15

Features: 1) Old timer's night! (Nostalgia)
          2) Random access...

Your Steering Committee   **

                              SBUG-80
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          Gerry McKee   (GMCKEE)   (408) 926-4063
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If the need arises feel free to give one of us a call.

===

Send Newsletter articles to:
                    Editor, South Bay TRS-80 User Group
                    Robert Byrd
                    P.O. Box 60116
                    Sunnyvale, Ca 94088

Deadline for the January newsletter is; 25 Dec 82.
If at all possible send articles via modem or saved on
disc/tape. I will see that your media is returned to you.
Thanks . . .
===

THANKS DYSAN!!

Dear Dysan,

      The members of the South Bay TRS-80 Users Group wish
to extend to Dysan Corporation our appreciation for the use
of your meeting facilities at 5401 Patrick Henry Drive.
Furthermore the cooperation of Dysans' staff has made our
use of these facilities an enjoyable experience.

      It is our sincere hope that the relationship between
our two organizations will continue with the same spirit of
harmony for a long time.

                          Happy Holidays from,
                          The Officers and Members of
                          South Bay TRS-80 Users Group

===

THE EDITOR'S TWO BYTES

At the last meeting you elected a new steering committee
(for 1983) and the democratic way paid off nicely. Those
that you chose are fine individuals and I'm sure will do a
great job in making next years experience with SBUG
exciting. The following is a list of your steering
committee for 1983:

	SBUG-80	
Discussion Leaders:	Username	Phone
Mike McHenry	(MCHENRY)	(408) 245-4704
Eric Brewer	(BREWER)	(408) 252-9332
Sabri Kawash	(SABRI)	(408) 732-5484
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(tape)	Gary Dixon	(GDIXON)	(408) 262-6937
(doc.)	Bill Richerson		(408) 257-8267

The discussion leaders have been reduced from five members to three members. Your steering committee found that five was too many discussion leaders and that three would be adequate to do the job.

Another important event that happened at the last meeting was the vote on increasing the dues to $18. It was unanimous in favor of increasing the dues! So, next years dues will be $18 beginning January 1, 1983. The reason for the dues increase? As I mentioned in last months newsletter, the money will be used to improve the quality of the software in the libraries and possibly improve the SBUG newsletter. While we are on the subject of the SBUG newsletter what do you think of this idea? We are thinking of changing the name of the SBUG newsletter, as of January 1 she will be called DYNAMIC MEMORIES instead of TRS-80 NEWSLETTER. To the staff at SBUG, TRS-80 NEWSLETTER sounded kind of blase' so Dave Fox dreamed up the name STATIC MEMORIES. Eric Brewer mentioned that the TRS-80 doesn't use static memory but dynamic memory hence the name DYNAMIC MEMORIES. What do you think, any better ideas? Let me know at the next meeting good or bad.

I anticipate an exciting year for SBUG. The new steering committee seems to be a cooperative group and I'm sure will have many new ideas for SBUG in 83. Go SBUG Go!!!

P.S.- At the last meeting I noticed a comment on a ballot concerning the Editors' spelling... I am currently using Microproof for almost every article that goes into print. I must admit I'm not a professional writter. I will galdly let anyone who feels they can do better, proof read any or all articles. They are always on SBUG-80 for review well before publishing time. I wonder why that person didn't have his/her name on the ballot for the Editors' possition?

Robert Byrd
EDITOR @ SBUG-80

1983 DUES

First off, I wish to thank all the members of SBUG for the past year and for reelecting me treasurer. Now, I must start acting out my duties. PAY UP OR ELSE!!! Yes, it's that time again!

Dues for next year will be $18.00 and due before 1 January 1983. To avoid the turmoil and hassle of long lines at the meeting P L E A S E mail your check, payable to: South Bay TRS-80 Users Group. (Address on newsletter cover)

Note to SBUG-80 users:
Remember that you have to be an SBUG member to have access
to SBUG-80. So, get your dues in right away...

Larry Gunderson
TREAS @ SBUG-80

NEW TAPE LIBRARIAN
TAKES OFFICE!!

Hi, my name is Gary Dixon and I am SBUG's new tape
lirarian. Those of us that are still on tape need to
establish methods where by all members have access to the
Bulletin Board (SBUG-80). It's the wave of the future.
Last meeting I made the offer to help others get on the
board, using the program that I am using right now. I was
a bit disappointed in not being approached, but now I feel
that I may have more access to these users thru the
LIBRARIAN position. The Tape Terminal Program that I have
at this point is still in development (what software isn't)
but, it performs most of the basic functions including R.A.
BLAINES implementation of DFT. The software needs some
modification (I'll help) to work on most systems, or ask
how I got on SBUG-80 for less than $60.

I hope to see you at the upcoming meetings.

Gary Dixon
GDIXON @ SBUG-80

FOUR FROM TWO

As many of us have discovered, the TANDON TM100-2 and other
similar double sided drives can be a way to double floppy
storage at very little additional cost over single-sided
equivalent drives. For about 50-75 dollars extra per
drive, you can take advantage of the opportunity to greatly
increase drive capabilities.

The double sided drives are not without their disadvantage
however. A primary disadvantage is, if you routinely use
double sided capabilities, you have to transfer anything
you want to use on a machine with single sided drives to
that format. Another disadvantage is that not all
operating systems support the double sided drives. To get
over this last problem, some people wire their double sided
drives so that the select lines see each drive as two
single sided drives. This removes the limitations of
programs which the double sided operating systems don't
support or for which one doesn't have the proper patching
information. However, you are then obligated to always use
the drives as if they were two single sided drives each.

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This article tells how I wired up two TM100-2 drives in a Model III so that I can use them in any possible configuration: with NEWDOS 80 V.2, as 40 track drives with 36 sectors per track or as two single sided drives with 18 sectors per track or as conventional single sided drives. With TRSDOS each drive looks like two drives, thus supporting the programs that will presently only run under TRSDOS.

This modification is not difficult, but it does require some wiring skill and it would be desirable for you to be able to read a schematic and have the Model III Technical Manual (RS 26-2109). You must have a drive cable which has all select pins and side select available. If you turned your RS cable over as I mentioned in an earlier article, you are all set. If you have a non RS cable, you should be in fine shape. The side select is effectively gated with the secondary drive (back of drive) select line so that when the secondary drive side select is activated, the side select automatically switches to the back side head. Those of you who follow the schematic will notice that I haven't put in as many diodes as would seem to be needed. I found that not all drives worked properly when this was done and the scheme I have used seems to be reliable with a month or so of almost every day use involving lots of disk input and output operations.

Before I tell you how I did this, I should mention a disadvantage. It is much slower when the operating system in drive 0 tries to access drive 2 which is what I have made the other side of that drive. A copy from drive 0 to drive 2 takes an unusually long time and seems to be making an awful lot of noise, due to the need for the head(s) on those drives to hunt back and forth as things go from one side to the other. In other words, NEWDOS80 is almost as slow as TRSDOS always is when using a drive as a double drive. Other than that, nothing would let you know that anything was unusual.

The problems in allowing your Model III to access drives 2 and 3 internally stem from the fact that those drive select connections DO NOT come to the edge connector on the top of the drive controller where the internal drives are connected. This must be corrected. In addition, the RS controller uses a multiplexer to differentiate between a request to an internal or external drive. This must be "locked" into the internal position or the machine won't recognize a request to an "external" drive which is really an "internal" drive. This does involve some wiring and one trace cutting. These modifications have been used in my Model III for about a month now and all seem to work well and pass all tests for exercising the system in all configurations.

MODIFICATIONS TO DRIVE CONTROLLER

The Model III must be disassembled down to the disk controller board. If you installed your own disk controller or RS 232 board, this should be a familiar operation to you. It takes about 10 or 20 minutes to remove the case, being careful not to catch the CRT neck, remove the shield on the CPU board if yours is a later machine and remove the CPU board and associated cables.

On the disk controller board, you need to run two wires from the bottom (external) drive connector to the upper (internal) drive connector. This will enable the select lines for drives 2 and 3 which are not presently on the internal drive edge connector. There is a hole in the board through which small wire wrap wire may be run since you go from one side of the controller board to the other, and you may wish to tape the wire to the edge of the board with a small piece of electrical tape. Run two wires. One starts from edge connector pin 10 at the bottom connector and runs to edge connector 14 at the top of the controller. The other starts at the bottom pin 12 and goes to the top pin 6. These connections may be soldered away from the edge of the PC connector so that they won't interfere with a mating cable.

The trace that must be cut goes from U17, pin 1 to U22, pin 1. It passes through a test point, TP16. You need to severe this trace on the board, nearest U17. From either TP16 or U22, pin 1, you need to solder a 470 ohm resistor to +5 volts. This will effectively lock the multiplexer, U22 in the disabled position and the machine will always acknowledge that an internal drive is being used. I have not provided much detail here. If you aren't able to do this modification on your own at this point, you shouldn't be attempting it and should seek help from someone with more background and experience. This completes the controller modifications and the machine can be reassembled.

DISK DRIVE MODIFICATIONS

On your drives, remove any terminating resistor packs and put them aside; they aren't needed. Remove the programming shunts from the drives. Remove the electronics board on your drive for better access. This is easily accomplished by carefully unplugging each of the connectors at the board ends, removing two Phillips head screws and sliding the board slightly to to align the cutouts so you can remove the board from the housing of the drive.

Pin 32 on the bottom of the drive electronics board goes to a socket. You must break this lead near the terminating resistor socket and solder a small signal diode (1N4148 or 1N914 work fine) with its cathode away from the socket to bridge the gap in the trace which you cut. This will

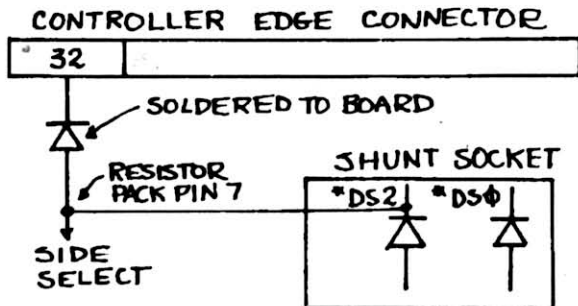provide a "gate" on the side select line.

In the shunt socket, put a diode for the shunt that is to select the PRIMARY drive side. (DS 0 on drive 0) This diode goes with its cathode towards the PC board edge connector. Just trim and bend the leads and insert the diode in the DIP socket which had the shunt in it. Do the same thing for the SECONDARY drive select. (DS 2 on drive 0/2 the way I did it.) Put a solid jumper from the PC connector side of the diode which selects the SECONDARY drive side to pin 7 of the terminating resistor pack socket. You will probably need to solder this short jumper to the diode lead.

This completes the modification. The same procedure can be used to modify drive 1/3 putting the diodes in the proper socket positions. The diagram shows schematically how this modification looks for drive 0/2.

GENERAL

When this modification is done, under TRSDOS, you will automatically have a four drive system with two physical drives. Under NEWDOS 80, the system will look like whatever system you configure using PDRIVE: two single sided 40/35 track drives, four single sided 40/35 track drives, two 40 track 36 sector drives, or any combination of them. With this change you can have your cake and eat it too.

Ian Webb

==

CONTROLLER EDGE CONNECTOR

```
 * 32
```

— SOLDERED TO BOARD

RESISTOR PACK PIN 7

SHUNT SOCKET

*DS2   *DS0

SIDE SELECT

* SELECT PROPER
CONNECTIONS FOR DRIVES

HOW TO USE THE *NAME
ROUTINE IN NEWDOS80

Most of us who have NEWDOS80 have found the manual
confusing, to say the least. Usually the information you
want is there, but the style is very terse and the simplest
operations sometimes are made to seem difficult.

A good example of this problem is the use of DOS CALL 4461H
to set up a *NAME routine. What does a *NAME
routine do for you? It simply allows you to put your own
machine language routine into the DOS command queue so that
it will behave the same as any other DOS command. For
example, you can run your routine from BASIC by using
CMD"*NAME" or you can run it from MINI-DOS by entering
*NAME. Without this type of routine you cannot run
programs while in MINI-DOS. It will also run from DOS, of
course, by entering *NAME. It is also possible to pass
a parameter to or from your routine by using the form
*NAME, parameter. Passing parameters is not covered in
this article.

OK. So you have a routine that you use frequently and you
would like to convert it to a *NAME routine. How do
you go about setting it up? It is actually very simple.
First add two lines to the beginning of your routine
(immediately after the ORG statement) as follows:

```
(100           ORG        ENTRY)
 110 ENTRY     DEFS       04H
 120           DEFM       'NAME    '
```

The first new line (110) reserves four bytes for use by
DOS, and the second line (120) supplies the name of the
routine (1 to 8 characters, padded on the right with spaces
to make a total of 8 characters). IMPORTANT! When you use
*NAME, DOS will jump to the 13th byte; so be sure that
your routine starts immediately after the above two lines.
If the next byte is not the normal starting point, add a JP
to START in the next line. Easy enough so far?

That is all the routine needs to run when you enter
*NAME, after it has been activated by the following
short routine:

```
         XXX BEGIN      LD         HL,ENTRY      ;ENTRY ADDR
         XXX            CALL       4461H         ;DOS CALL
         XXX            JP         402DH         ;RET TO DOS
         XXX            END        BEGIN
```

This routine may be assembled as a separate program or it
may be appended to the *NAME routine itself (I prefer
to include it with *NAME). When you append this to
your program, be sure that the END statement is changed to
start at BEGIN (or whatever label you have chosen) and not
at ENTRY. Otherwise you will have a disaster when you try

to activate your $NAME routine. When you assemble the routine, give it a name such as SETUP or ACTIVATE. After assembly the $NAME routine is activated from DOS by simply running SETUP (or ACTIVATE). Thereafter, your routine may be run by entering $NAME wherever a DOS command is legal. Be sure that your routine is in a protected area of memory, because if it is wiped out or altered, you may have a DOS FATAL ERROR!

The short program listed below is a DEMO to illustrate how to use the $NAME facility. The concept is great and not really difficult at all. You can easily use the AUTO function to activate your $NAME routine every time the computer is started or re-booted. I hope I have not made it even more confusing. Good luck!

<div align="right">

Vigo Smith
VIGO SBUG-80

</div>

```
100 ;DEMO PROGRAM FOR USE OF $NAME ROUTINE
110 ;VIGO N. SMITH
120 ;NOVEMBER 1982
130 ;
140        ORG     0FE00H          ;LOCATE IN HIGH MEMORY
150        DEFS    04H             ;4 BYTES FOR USE BY DOS
160        DEFM    'D              ;NAME OF RTN.$D WILL
170                                ;RUN THE ROUTINE AFTER
180                                ;IT HAS BEEN ACTIVATED
190 ;
200 ;ROUTINE TO BE RUN BY COMMAND $D
210 ;
220 START CALL    01C9H           ;ROM CALL TO CLEAR SCREEN
230                                ;THIS IS THE 13TH BYTE.
240                                ;$D JUMPS HERE TO RUN
250        LD      HL,MSG1         ;POINTS TO MESSAGE ADDR
260        CALL    021BH           ;ROM CALL TO DISPLAY A
270                                ;LINE
280        LD      HL,MSG2         ;POINTS TO SECOND MESSAGE
290        CALL    021BH           ;DISPLAY IT
300        CALL    0049H           ;WAIT FOR A KB CHARACTER
310        CALL    01C9H           ;CLEAR SCREEN
320        RET                     ;RETURN TO DOS
330 ;
340 ;FOLLOWING IS THE SETUP PROGRAM FOR $D
350 ;
360 BEGIN LD      HL,0FE00H       ;POINTS TO FIRST BYTE OF
370                                ;THE $D ROUTINE
380        CALL    4461H           ;DOS CALL TO SET UP
390                                ;THE ROUTINE
400        CALL    402DH           ;TO RETURN FROM SETUP
410                                ;ROUTINE
420 ;
430 MSG1  DEFM    'THIS IS A DEMONSTRATION OF $NAME'
440        DEFM    ' ROUTINE OF NEWDOS80'
450        DEFB    0DH             ;MUST END WITH 0D OR 03
460 MSG2  DEFM    'PRESS ANY KEY TO RETURN TO DOS'
470        DEFB    0DH             ;MESSAGE TERMINATOR
```

```
480        END     BEGIN               ;RUNS ONLY THE SETUP
490                                    ;ROUTINE STARTING AT
500                                    ;BEGIN.
```
===

YOUR FIRST
TIME ON SBUG-80

By popular demand I will again go over some of the commands
that one can execute on SBUG-80. SBUG-80 is really easy to
use and the $HELP file contains the descriptions of all
the SBUG-80 commands. While you are on SBUG-80 READ
EVERYTHING CAREFULLY!! It is possible, without reading
pertinent information, for you to miss a key function and
never have the opportunity to observe that function again.
Just imagine what would happen if after logging in you
didn't notice the $HELP function explained in the log
on message. Unless you previously knew something about the
system you would be LOST!

Command #1:   *HELP

Explaination of this functions' capabilities will be
displayed on entering: $HELP from SBUG-80 READY.

Command #2:   *MAIL

$MAIL activates the mail facility and is simple to use.
Entering a '?' from any of the mail programs command levels
will give you detailed information of the commands that
could be executed from that level. Here is an example of
sending mail to 'ALL', this file is readable by any system
user.

Command :S<cr>

Send mail   <cr> = ENTER

Username :ALL<cr>
Send Command :R<cr>
RE: This is the regarding line & should always be used.<cr>
Send Command :A<cr>
 1 >This is where you begin writing your message. <cr>
 2 >Never use more than 61 characters per line. <cr>
 3 >When you are done with your message then from <cr>
 4 >a new line press enter. (Example: see line 5) <cr>
 5 ><cr>
Send Command :S<cr>   <---- This will process your message.

That is all there is to it. This is probaly the most
difficult function on SBUG-80 and as you can see even this
isn't that difficult.

Command #3:   *USERS

This function displays a list of users and their user name.

Command #4:   DO INDEX

This will put you into the INDEX program. The INDEXer contains a description of all the programs that are available on SBUG-80. Downloading and uploading should always be done through this program. Pressing ENTER after receiving the 'FUNCTION:' will give you a menu of commands.

Command #5:   *LOGOUT

PLEASE! PLEASE! Always use this command when you are finished using SBUG-80.

Important note to HAYES Smartmodem users: Never use the '+++' function to log off the system. This function is used to get the attention of your modem but (SBUG-80 uses the HAYES) this also bring SBUG-80s' modem to attention! Use the *LOGOUT this will automatically hang-up your end.

I hope you will enjoy SBUG-80. This system has taken over a year to develop and we are always making improvements where we feel they're necessary. We welcome any suggestions or comments.

Robert Byrd
EDITOR @ SBUG-80

==

UPPERCASE TO LOWERCASE
MODS TO MODEL I

This is the second article on the lowercase mod to the Model I TRS-80 Computer. This article will be fairly short because we are going to use most of the information from the last article (Oct 82 newsletter) to make the Electric Pencil Modification.

First let me explain the difference between the standard Radio Shack Modification and the Electric Pencil Modification.

The Radio Shack Modification does not require a switch like the Electric Pencil Modification because the Character Generator that we installed has the necessary characters in the chip. When you boot up the system you get standard characters. With the Radio Shack Modification you also get a cassette tape with a driver to use in level II so that lowercase can be used without DOS. If you don't have the new character generator, you will need a switch so you can get out of the so called MARTIAN CHARACTER MODE. Remember that with the correct character generator, there is no need for the switch because the MARTIAN CHARACTERS are no longer

there. You would have standard Uppercase Characters. Enough discussion, lets get into the Electric Pencil Modification.

First lets do the mechanical things that need to be done before we do any electrical stuff. When looking at the back of the keyboard you should see a black plastic insert that surrounds the Video, Power and Cassette plugs. You are going to drill a hole for a switch between the Video and Power plugs in the insert. The hole should be drilled exactly in the center because there is little room for the switch you will be attaching to this insert. You will need a sub-miniature single pole single throw switch. These switches are usually available from Radio Shack or other parts houses. The part number for the Shack switch is 275-624 and it sells for $1.59.

Take the switch and attach three different colored wires from the cable that you stripped in the Radio Shack Modification The wires should be about 8 inches long to begin with. After the wires are soldered to the switch, mount the switch in the insert making sure the toggle is on the outside. The body of the switch should be vertical so it will fit between the Video and Power connectors on the circuit board.

You should now have the switch assembly mounted in the insert. Take the insert and mount it on the circuit board as it was when you removed it. It's going to fit tight. Now look at the toggle and make sure it is down. In the DOWN position you will be normally in the standard UPPERCASE MODE. In the UP position you will be in LOWERCASE MODE if the DRIVER is active.

Now lets prepare for the electrical assembly. Remember the small trace you cut in half in the Radio Shack Modification, well we are now going to solder two of the leads from the switch to those little buggers. How about that!!! Before we solder the leads we must make sure that the traces are clean of solder mask (the green stuff). Take an Exacto knife and some kind of magnifying glass and scrape the traces clean leaving as much attachment surface as you can without damaging the traces. Now apply some solder to the traces. Remember YOU DON'T NEED MUCH SOLDERa!! Now measure the length of wire off the switch and route the middle wire and the top wire over to the area of the cut traces. Make sure there is enough length of wire to prevent the trace from pealing up after the soldering is done. Cut and strip the two wires. Take the middle wire and solder it to the cut trace nearest Z29. CAUTION!!! DO NOT OVER HEAT THE TRACE. IT WILL ONLY TAKE A LITTLE SOLDER AND TIME TO ATTACH THE WIRE. Next, take the top wire coming off the switch and solder it to the cut trace nearest Z30. Inspect your work and make sure the wires are reasonably free and not putting strain on the trace. Make sure the wires are routed cleanly to the

switch.

The remaining wire on the switch should be routed over to the PIGGYBACK chip that we installed in the Radio Shack Modification In the Radio Shack Modification, pin 12 of Z46 was routed and soldered to Z27 pin 13. For the Electric Pencil Modification we will === NOT === solder Z46 pin 12 to Z27 pin 13. If you have a wire attached to pin 12 remove it. Remove the wire that was connecting to Z27 pin 13. Take the bottom wire of the switch that you just routed and solder it to Z46 pin 12.

The primary LOWERCASE MOD for Electric Pencil is now complete. If you want to add the special control key that Electric Pencil recommends, that is optional and has nothing to do with Upper and Lowercase characters.

Reassemble the keyboard and the case and make DOUBLY SURE THAT THERE ARE NO OPENS IN THE KEYBOARD CABLE. If you have any questions please get in touch with me at SBUG-80.

William K. Jibby
JIBBYTRM ON SBUG-80

==

SBUG-80 MAIL CORNER

<Message from CHOW   at SBUG-80   11/07/82 22:40:09>
RE: FOR SALE

I HAVE A COUPLE OF 5 1/4", SINGLE SIDED, DOUBLE DENSITY, 80 TRACKS DISK DRIVES FOR SALE. THEY ARE LISTED AT $300 OR MORE, I WILL LET THEM GO AT $180. THEY ARE ALL LIKE NEW AND ARE IN EXCELLENT CONDITION. IF INTERESTED, LEAVE ME A MESSAGE OR CALL ME AT (408) 988-5022.

KAM CHOW

<Message from PETE   at SBUG-80   11/14/82 09:06:42>
RE: ' ZBASIC 2.2'

ANYONE WITH EXPERIENCE USING ZBASIC 2.2 COMPILER PLEASE CALL PETE 408-227-7125 OR LEAVE ME A MESSAGE HERE.... OH YES... GLAD TO BE ABOARD FINALY FIGURED SBUG-80 OUT.
PETE.

<Message from RON   at SBUG-80   11/15/82 12:49:29>
RE: BBS, 'C', HWD BUILDERS

ANY MASOCHISTIC HARDWARE BUILDERS OUT THERE INTERESTED IN SPENDING $200 FOR A (MY) DESIGN SOLUTIONS AN7000 MOD 1 EQUIV. KIT??? OR HOW ABOUT $600 FOR MY 2ND KBD & SOMETIMES INTERMITTENT LNW E/I & 1 35-TRACK MICROPOLIS DRIVE IN MARGINAL CONDITION & MODEM (NO CASE FOR E/I, MODEM CIRCUIT BOARD, & DRIVE!)

(AN7000 KIT IS UNTOUCHED, I.E. NOT RUINED YET!)

<Message from MARV   at SBUG-80   11/23/82 00:33:06>
RE: FOR SALE....BEAUCOUP DE STUFF

TRS-80, MODEL I, LEVEL II, LOWER CASE, AND
NUMERIC KEY PAD..............................$435
EXPANSION INTERFACE, 32 K.................... 315
PERCOM DOUBLER II........................... 120
RS-232 BOARD................................ 90
2 MPI DISK DRIVES IN CASE WITH POWER
SUPPLY, 40-TRACK, DOUBLE DENSITY............ 425
MODEM I..................................... 115
LDOS 5.03 (YES, IT'S ORIGINAL)............. 50

DOCUMENTATION FOR MOST EVERYTHING
THE WORKS FOR $1295.00
MARV WILEY (408) 255-1438

<Message from BMCKEE   at SBUG-80   11/25/82 18:16:14>
RE: FOR SALE

REMEMBER GREEN/ORANGE SCREEN DEAL!!! CLUB PURCHASERS
ONLY GET GREEN OR ORANGE CRT TO FIT MOD I OR MOD III
FOR $64.50. CONTACT BMCKEE (408) 926-4063 & LEAVE MSG.

ANY HARD 8" DISC USERS OUT THERE? HAVE FRESH BOX OF 12
DISCS, HARD SECTOR CD BRAND AT MY COST $22.90!
ANYONE READY FOR OMIKRON MAPPER II, GET IN TOUCH WITH ME
FOR A GREAT DEAL... BY THE WAY, A DOUBLER MOD IS ON THE
WAY FOR BOARD AS WELL!
BMCKEE (408)926-4063

<Message from LNW2MDX   at SBUG-80   11/25/82 20:59:29>
RE: F O R   S A L E

IN CASE NOBODY REMEMBERS I STILL HAVE FOR SALE:
MDX-2 E/I BARE BOARD........$69.00
MDX-2 E/I FULLY ASSEMBLED..$350.00

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