

DECEMBER 1981

# TRS-80™ NEWSLETTER

SOUTH BAY - USERS GROUP

**Page - Contents**

1. Treasurer's note. Editor's note.
2. Faster Sorts
3. How About Joining The "Chain Gang"
4. Routine To Redefine Keys
5. Free Courses Available
6. Header For Basic Programs
8. A Little News About Script80
9. The Case For A Buglist



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

DECEMBER 15, JANUARY 19, FEBRUARY 16

Features: Election of a new steering committee  
Drawing for free courses  
Open rap session

\*\*\*\*\*  
The SBUG members would like to pass on a special thanks to DYSAN for the use of their new facility at Patrick Henry Drive. The convenience and space of the facility makes our meetings much more enjoyable. Thanks Dysan we really appreciate it.  
\*\*\*\*\*

Treasurers note:

I'm now accepting club dues for next year (82). If you wish to pay by mail make check payable to:

South Bay TRS-80 Users Group  
2348C Walsh Ave.  
Santa Clara, Ca 95051

Thanks,  
Allen Glesser

Editors note:

On Tuesday, December 1st: the following committee:

|              |                 |
|--------------|-----------------|
| Tom Anderson | Larry Gunderson |
| Bob Chapin   | Marv Wiley      |
| Gerald McKee | Robert Byrd     |

got together to evaluate the possibility of a bulletin board and put together a questionnaire to see how the rest of the members feel about this idea. We also felt that it is time to find out where the rest of the club stands, so the new steering committee can provide more subjects of your interest. Please fill out the questionnaire and either bring it to the next club meeting or staple it closed and drop it in the mail. It is very important that all members participate.

The committee believes that a bulletin board would be a great asset to the club. Here are just a few advantages:

- a) Message center for members.
- b) Helpful hints to common problems that many members encounter. (BUG \* LIST)
- c) Collection center for newsletter articles.
- d) An up to date file of members names addresses and phone numbers.
- e) Library of useful non-copyrighted programs.
- f) For sale board of the best hardware and software buys in town. Including items for sale by club members.

- g) Place for members interested in group buys to organize and set up the right deal.
- h) Stock investment club could be organized by members to share a common data base.
- i) Need help section for members with unusual problems.

This list could go on, it's actually up to our imagination and creativity the usefulness we can get out of such a system. If you're not a modem user you can still benefit by a much improved news letter. I believe that the bulletin board could possibly stimulate more contribution of articles. You may also have a friend in the club who does own a modem who could obtain various information for you. Just because you're not a modem user now doesn't mean that you might not be one in the future. A system of this nature may take several months to put together and by the time your ready it will be there for you to access. This is a very good way for us to share the complexities of our TRS-80s so pass the word, the password is: S H A R I N G.

Robert Byrd

\*\*\*\*\*  
 On the questionnaire it also asks for nomination for members of the new steering committee. Please only nominate those who wish to participate to save the nominee the embarrassment of declining. Remember you can nominate yourself.

If you wish to make a nomination and can not make the next club meeting then give your questionnaire to a friend who can make the meeting. If you do not wish to make a nomination then simply fill out the questionnaire and drop it in the mail.

\*\*\*\*\*  
**FASTER SORTS**

There appears to be a perennial interest in sort routines by SBUG Members. However, I can't help but note that all of those which I have seen published to date in the SBUG newsletter are relatively slow. At least so when measured by the fact that sort time quadruples with each doubling of items to be stored. These routines belong to the so-called square-law family of sort routines.

Here's a super-fast one which I have used since 1964. It was passed on to me by a programmer involved in the early development of sort routines for hard sector discs. With this routine, sort time will only increase 2.8 times for each doubling of items to be stored. (It is a three-halves power law sort routine). If that should seem to be only a marginal improvement, compare the following times as measured on my Model III TRS-80: A dimensioned array containing 700 items took four hours and 52 minutes by a standard square-law sort routine similar to the ones I have seen published. The same array took just 11 minutes by this procedure.

In the listing of the sort routine, Max is the upper limit of real data in the dimensional arrays D(I), LBL(I), and COD(I). Note that

two are string files and one is integer. On the first loop, the program deals with only one third of the arrays. It compares the first third of the array with the last third. In subsequent loops, it looks at the entire array. This occurs at statement 4030 when L=2.

The program is at its best when files are very much out-of-sort (as occurs when new data is appended to the end of an existing file). It is at worst when operating on a file that is almost in sort.

I haven't used it for actually sorting data on TRS-80 discs, for that is too slow. Instead, I use sequential file to store the disc addresses and read the data into arrays D(I), LBL(I), and COD(I). If readers are interested, I can go into that some other time.

```
10 CLEAR 14400:GOSUB6200:CLS'DIR IS "UPDATE",A
100 DEFSTR A-H:DEFINT I-N:DEFSNGO-Z:Y1$="YES":Y2$="NO"
110 DIM A(5),C(9),B(9),D(700),LBL(700),COD(700),C1(2,9),CD(6)
4000 'SORT ROUTINE
4020 L=MAX
4030 L=(11*L+10)/16
4040 I=1:LFLG=0
4050 FOR J=LTO MAX
4060 IF D(J)=>D(I) THEN 4090
4070 LBL(I)=LBL(J):LBL(J)=LBL(I):LBL(I)=LBL(J):LFLG=1
4072 COD(I)=COD(J):COD(J)=COD(I):COD(I)=COD(J)
4074 D(I)=D(J):D(J)=D(I):D(I)=D(J)
4080 PRINT "SORTING";L;"TO";MAX;"ON ";LBL(I)
4090 I=I+1:NEXT
4100 IF L<>2 THEN 4030
4110 IF LFLG=1 THEN 4030
4115 LBL(I)=MAX:D(I)="THIS REC. IS":COD(I)="MAX"
4120 RETURN
```

Jerry Hutcheson

=====

### How About Joining The "Chain Gang"

How many of you have NEWDOS 80 or LDOS or some other operating system which provides chaining? How many of you have been cowed by the thought of how you might use the capability and haven't tried. Here is a simple approach that provides rather good results and illustrates some of the tricks that you can use.

This example will provide a chain command that will run the ACCEL2 compiler to compile a basic program and all that you have to do is start the chain with a DO ACCEL from the DOS or CHAIN ACCEL if your DOS doesn't recognize the DO command.

The first thing to do is load SCRIPSIT because you will create the chain file with SCRIPSIT. Type into SCRIPSIT as follows:

```
LOAD ACCEL2/CMD
BASIC 59904
```

```

CMD"DIR :1
RUN"LOADER/BAS
DELETE63900-63904
SYSTEM
/59904
/FIX

```

Now save the file that you have created as ACCEL/JCL. Notice that all of the statements in the file are commands that you would type in from the keyboard without the chain file. The program that you enter from LOADER/BAS is the one that will be compiled. The DELETE command eliminates LOADER/BAS so it will not be compiled. I put in the directory command because I want to see the programs available for selection. As I have stated many times before, if you don't really know what you are doing just diddle. Try any number of things. Some work and some don't. That is how I created this file. I don't think you will break the computer. I didn't.

The BASIC program for loading the program to be compiled is LOADER/BAS and lists as follows:

```

63900 PRINT"ENTER THE NAME OF THE PROGRAM TO BE COMPILED"
63901 CMD"CHNON,N
63902 LINEINPUTA$
63903 MERGEAS$
63904 CMD"CHNON,Y

```

The program lines are given very high numbers so that they will not interfere with the program to be compiled. It is necessary to break out of the chain sequence with the CHNON,N otherwise the chaining will not stop to let you compile. The next two lines get the selected program into memory. If you are not using version 2 of NEWDOS 80 it will be necessary to save the basic program in ASCII before running the program. This alone may be enough to keep you from usin this particular program. After things are all merged then you go back to chaining with the CHNON,Y command.

Whether you use this program or not, it illustrates the preparation and use of chain files. The are very handy and simple to create. Just get SCRIPSIT out and type.

Tom Anderson

```

=====
10 '          THIS ROUTINE CAN BE USE TO REDIFINE KEYS.
20 '          Roger Anderson   Phone (408) 732-4307
30 'Z$=INKEY$:IF Z$="" THEN 30
40 'ON ASC(Z$)-<X> GOSUB LINE 1,LINe 2,LINe 3,.....LINE N
50 'GOTO 30
60 '<X> = an ASCII val 1 less than ASCII val of the lowest
70 'key to be redefined.
80 'ASC(Z$) Returns the ASCII value of the redefined key.
90 'For example if you desire to redefine the numbers 1-9
100 'then <X> would = 48.
110 'If it is desired to redefine the keys A-Z then
120 '<X> = 64

```

```

130 'Try this program.
135 CLS: CLEAR(2000)
136 PRINT @960, "PRESS ANYKEY FROM A TO J";
140 Z$=INKEY$: IF Z$="" THEN 140
150 ON ASC(Z$)-64 GOSUB 170,180,190,200,210,220,230,240,250,260
160 GOTO 140
170 POKE 15390,42: RETURN
180 POKE 15453,42: RETURN
190 POKE 15454,42: RETURN
200 POKE 15455,42: RETURN
210 POKE 15516,42: RETURN
220 POKE 15517,42: RETURN
230 POKE 15518,42: RETURN
240 POKE 15519,42: RETURN
250 POKE 15520,42: RETURN
260 PRINT @512, STRING$(63, "-");
270 PRINT @650, "SEE HOW IT WORKS?";
280 PRINT @768, STRING$(63, "-");
290 RETURN

```

-----

### FREE COURSES AVAILABLE

Learning Concepts, Fred Hebbel (executive director), is a new educational firm opening for buisness at 3065 Democracy Way - Santa Clara, near our club meeting place. Fred Hebbel has passed on to me, to give to SBUG members, five free introductory classes in programing and word processing. Course descriptions follow:

**COURSE TITLE: INTRODUCTION TO PERSONAL COMPUTING**

This course is designed for the individual who has never experienced the excitement of using a personal computer. The combination lecture, hands-on class covers such topics as: System Elements of Personal Computers, Powering On and Bootstrapping the System, Basic Operating System Software Using the Popular CP/M Operating System, Fundamentals of Computer Programming, Demonstrations of Various Applications Software, and Considerations of Purchasing a System.

**COURSE TITLE: PROGRAMMING IN BASIC**

This course is designed for individuals wishing to learn how to program a computer using the simple "BASIC" programming language. No previous experience in using a computer is necessary. The predominantly hands-on nature of this course allows the student to learn by practical exposure.

**COURSE TITLE: WORDPROCESSING FOR HOME AND BUSINESS**

This course is designed for the individual wishing to learn the fundamentals of wordprocessing using a personal computer. No previous experience is necessary either in using a wordprocessor or with using a computer.

\*\*\*\*\*  
\*  
\* Please fill out this questionnaire as completely \*  
\* as possible and either bring to the next club \*  
\* meeting or staple it closed, place a stamp in \*  
\* the appropriate place and drop it in the mail. \*  
\* The address has already been filled out. \*  
\* Thanks . . . \*  
\*\*\*\*\*

\*\*\*\*\* South Bay TRS-80 User Group Questionnaire \*\*\*\*\*

It is assumed that Radio Shack's TRS-80 is your computer!

Name:

Company Name (If any):

Address:

City, State:

Zipcode, Phone:

Please Circle Appropriate Answer

|                              |        |        |          |           |
|------------------------------|--------|--------|----------|-----------|
| Model:                       | I      | II     | III      | Color     |
|                              | LEV I  |        | LEV II   |           |
| Memory:                      | 16K    | 32K    | 48K      | 64K       |
| Disc:                        | YES    |        | NO       |           |
| If Yes to previous question: |        | 5 IN   |          | 8 IN      |
| Operating system:            | TRSDOS | NEWDOS | NEWDOS80 | LDOS C/PM |

Other:

Modem: YES NO

If you answered NO to previous question would you be interested in a modem group purchase?

YES NO

The club is considering purchasing a bulletin board system. The system will consist of a Model I with 48K of RAM, four double sided floppy discs and of course a 300 baud auto-answer modem. If this should happen the cost will be approximately \$2500.00. The more members that participate in the cost of the system the less it will cost per member.

|             |    |                 |
|-------------|----|-----------------|
| 50 members  | -- | \$50 per person |
| 100 members | -- | \$25 per person |
| 150 members | -- | \$17 per person |
| entire club | -- | \$12 per person |

Would you be interested in the club purchasing a bulletin board?

YES NO

Rank features of club from 1 to 8. <1> being the most liked feature <8> the least.

|                       |             |
|-----------------------|-------------|
| Disk Library          | ----->_____ |
| Tape Library          | ----->_____ |
| Documentation Library | ----->_____ |
| Newsletter            | ----->_____ |
| Raffles               | ----->_____ |
| Group Discussions     | ----->_____ |
| Presentations         | ----->_____ |
| Group Purchases       | ----->_____ |

There are five members in the steering committee; three discussion leaders, treasurer, and newsletter editor. If you wish to make a nomination for one of these positions enter name and qualifications below. Entry must be a member of SBUG.

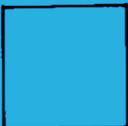
Name:

Position:

Qualifications:

We will happily accept any comments or suggestions for the members of the new steering committee.

Comments:



Editor, South Bay TRS-80 User Group  
Robert Byrd  
450 N. Mathilda Ave. # I-208  
Sunnyvale, Ca 94086

## HEADER FOR BASIC PROGRAMS

Vigo Smith

Need a header or box around your title in BASIC programs? Here is an Assembly Language program that will draw an attractive border around your title using only three BASIC statements (disk BASIC only). Following is a sample program to put the title "ACCOUNTS PAYABLE" on the screen:

```

10 CLS
20 CHD"L","HEADER/CHD"           'LOAD MACHINE LANG PRGRM
30 DEFUSR=&HBBB0:                 'STARTING ADDRESS
40 X=USR(0)                       'DRAW IT!!
50 NM="A C C O U N T S   P A Y A B L E"
60 PRINT &228-LEN(NM)/2,NM;
70 IF INKEY="" THEN 70           'HIT ANY KEY TO END
90 CLS;END
    
```

Note that statements 20, 30 and 40 put the border on the screen. Even statement 20 can be omitted if you load "HEADER" with a DO BUILD in TRSDOS.

I use this subroutine on many BASIC programs. It saves time when writing your BASIC program and it was fun doing the Assembly Language program. Here is what it looks like (had to write a special program to put it on the printer):



The Assembly listing looks long, but notice that the machine code only uses 98 bytes. The program is set up to run at 48000 in my 32K machine. It can be easily relocated to higher memory if you have 48K. Be sure to reserve user memory for the program when you run BASIC (MEMORY SIZE? 47999 for 32K machine).

```

00100 ;                               HEADER PROGRAM
00110 ;                               VIGO N. SMITH - SEPTEMBER, 1981.
00120 ;THIS ASSEMBLY LANGUAGE SUBROUTINE PRINTS A RECTANGULAR
00130 ;BORDER TO BE USED AS A HEADER FOR BASIC PROGRAMS
00140 ;
BBB0   00150           ORG           0BBB0H           ;STARTS AT 48000
BBB0   ED4BE1BB 00160 START        LD           BC,(DST) ;VIDEO RAM ADDRESS
BBB4   3E00      00170             LD           A,00H
BBB6   0B       00180             EX           AF,AF'      ;SAVE 0 IN A'
BBB7   3EAB     00190             LD           A,CHAR1
BBB9   02      00200             LD           (BC),A      ;DISPLAY FIRST CHAR
    
```

|       |              |       |        |             |                         |
|-------|--------------|-------|--------|-------------|-------------------------|
| BBBA  | 03           | 00210 | INC    | BC          |                         |
| BBBB  | 3E9C         | 00220 | LD     | A, CHAR2    |                         |
| BBBD  | 1E2A         | 00230 | LD     | E, TAB1     | ; SET UP LOOP OF 42     |
| BBBF  | CDBFBB       | 00240 | CALL   | REPEAT      | ; PRINT CHAR2 42 TIMES  |
| BB92  | 3EBC         | 00250 | LD     | A, CHAR3    |                         |
| BB94  | 02           | 00260 | LD     | (BC), A     | ; DISPLAY CHAR3         |
| BB95  | 211500       | 00270 | LD     | HL, TAB2    | ; SET UP TAB 21         |
| BB9B  | CDCCBB       | 00280 | CALL   | TBL         | ; EXECUTE TAB           |
| BB9B  | 1E05         | 00290 | LD     | E, 05H      | ; SET UP FOR 5 LOOPS    |
| BB9D  | CDD0BB       | 00300 | CALL   | EDGES       | ; DRAW EDGES            |
| BBA0  | 211500       | 00310 | LD     | HL, TAB2    |                         |
| BBA3  | CDCCBB       | 00320 | CALL   | TBL         |                         |
| BBA6  | 1D           | 00330 | DEC    | E           |                         |
| BBA7  | 3E00         | 00340 | LD     | A, 00H      |                         |
| BBA9  | BB           | 00350 | CP     | E           |                         |
| BBAA  | CAB0BB       | 00360 | JP     | Z, NEXT     |                         |
| BBAD  | C39DBB       | 00370 | JP     | LOOP        | ; RETURN FOR NEXT EDGE  |
| BBB0  | 3EBA         | 00380 | LD     | A, CHAR7    |                         |
| BBB2  | 02           | 00390 | LD     | (BC), A     | ; DISPLAY CHAR7         |
| BBB3  | 03           | 00400 | INC    | BC          |                         |
| BBB4  | 3EBD         | 00410 | LD     | A, CHAR8    |                         |
| BBB6  | 1E2A         | 00420 | LD     | E, TAB1     |                         |
| BBB8  | CDBFBB       | 00430 | CALL   | REPEAT      | ; PRINT CHAR8 42 TIMES  |
| BBBB  | 3EBF         | 00440 | LD     | A, CHAR9    |                         |
| BBBD  | 02           | 00450 | LD     | (BC), A     | ; DISPLAY CHAR9         |
| BBBE  | C9           | 00460 | RET    |             | ; RETURN TO BASIC       |
| BBBF  | 02           | 00470 | REPEAT | LD (BC), A  |                         |
| BBCO  | 03           | 00480 | INC    | BC          |                         |
| BBE1  | 1D           | 00490 | DEC    | E           |                         |
| BBE2  | 0B           | 00500 | EX     | AF, AF'     |                         |
| BBE3  | BB           | 00510 | CP     | E           |                         |
| BBE4  | 0B           | 00520 | EX     | AF, AF'     |                         |
| BBE5  | CACBBB       | 00530 | JP     | Z, RETURN   |                         |
| BBE8  | C3BFBB       | 00540 | JP     | REPEAT      | ; RETURN TO PRINT AGAIN |
| BBEB  | C9           | 00550 | RETURN | RET         |                         |
| BBEC  | 09           | 00560 | TBL    | ADD HL, BC  | ; TAB SUBROUTINE        |
| BBED  | 44           | 00570 | LD     | B, H        |                         |
| BBEE  | 4D           | 00580 | LD     | C, L        |                         |
| BBEF  | C9           | 00590 | RET    |             |                         |
| BBD0  | 3EAA         | 00600 | EDGES  | LD A, CHAR4 | ; EDGE PRINT SUBROUTINE |
| BBD2  | 02           | 00610 | LD     | (BC), A     |                         |
| BBD3  | 03           | 00620 | INC    | BC          |                         |
| BBD4  | 3E95         | 00630 | LD     | A, CHAR5    |                         |
| BBD6  | 02           | 00640 | LD     | (BC), A     |                         |
| BBD7  | 212A00       | 00650 | LD     | HL, TAB1    |                         |
| BBDA  | CDCCBB       | 00660 | CALL   | TBL         | ; TAB 42                |
| BBDD  | 3EBF         | 00670 | LD     | A, CHAR6    |                         |
| BBDF  | 02           | 00680 | LD     | (BC), A     |                         |
| BBE0  | C9           | 00690 | RET    |             |                         |
| 00AB  |              | 00700 | CHAR1  | EQU 0ABH    | ; CHR*(168)             |
| 009C  |              | 00710 | CHAR2  | EQU 09CH    | ; CHR*(156)             |
| 00BC  |              | 00720 | CHAR3  | EQU 0BCH    | ; CHR*(188)             |
| 00AA  |              | 00730 | CHAR4  | EQU 0AAH    | ; CHR*(170)             |
| 0095  |              | 00740 | CHAR5  | EQU 095H    | ; CHR*(149)             |
| 00BF  |              | 00750 | CHAR6  | EQU 0BFH    | ; CHR*(191)             |
| 00BA  |              | 00760 | CHAR7  | EQU 0BAH    | ; CHR*(138)             |
| 00BD  |              | 00770 | CHAR8  | EQU 0BDH    | ; CHR*(141)             |
| 00BF  |              | 00780 | CHAR9  | EQU 0BFH    | ; CHR*(143)             |
| 002A  |              | 00790 | TAB1   | EQU 02AH    | ; DECIMAL 42            |
| 0015  |              | 00800 | TAB2   | EQU 015H    | ; DECIMAL 21            |
| BBE1  | 4A3C         | 00810 | DST    | DEFW 3C4AH  |                         |
| BBB0  |              | 00820 | END    | START       |                         |
| 00000 | Total Errors |       |        |             |                         |

\*\*\*\*\*

The course in wordprocessing will probably use a more popular wordprocessing program such as "Word Star" operated under CP/M.

There will be a drawing at the next club meeting to see which one of the lucky members in the club get one of these free courses. Beginners might enjoy the BASIC class while more advanced computer users might find the course on CP/M a little more interesting. If you are interested in this opportunity get a ticket at Decembers meeting when you first arrive.

Good Luck,  
Robert Byrd

-----  
**A LITTLE NEWS ABOUT SCRIPT80**

A letter Bob Stormberg received concerning an article in Septembers 80 Microcomputing page 78. If you are an MX-80 user this letter could be of interest.

Dear Bob,

Your are right there have been quite a few requests for both of the programs mentioned. Enclosed you will find some additional information on the Scriptr program which you can purchase for \$35.00 now that you have purchased Script80. Hope that you get more out of Scripsit with the new routine. Scriptr is a universal paralell printer driver that will work with any printer that uses the paralell port. The article wasn't very clear on this point. Hope that the accompanying material helps to answer any questions that you may have.

Dennis works for 80 Microcomputing and has rather close proximity to the Instant Software offices in Peterborough. He knows a number of people there and gets a look from time to time at the latest things that they are working on. He had a number of letters about this control code problem when he saw my program being tested there and so he contacted me about providing a simple patch so that some of his reades could get their machines working now without waiting for the full program. I provided Script80 for that purpose. Scriptr is now of course ready and within two weeks or so we hope to have the Model III version up and running. Instant Software will not release either of the versions untill December issue of the magazines. You might be able to get a copy of it before then in some of their outlets but if you need it now you should get it from me as I am the only source at present. Thanks for your interest in Script80 and Scriptr. Hope to be hearing from you soon.

Sincerely,  
Jerry Goodwin  
1746 N.W. 55th. Ave #204  
Lauderhill, Florida  
33313  
1-305-739-2071

**The Case For A BUGLIST**  
(The second time around)

How many times have you found yourself fussing with a bug in a program that should work but doesn't. I have it happen to me quite often and I seem to waste a lot of time. I have probably had the same bug before but so long ago that I do not remember the cure. It occurred to me that a BUG checklist might save a lot of time, particularly if I could tap the brains of all of the club members. When a bug appears and the cure is not obvious I would consult the BUGLIST for possible causes.

One experience, for example, concerned the "SUBSCRIPT OUT OF RANGE" error. I had dimensioned the arrays but always got an error at VARIABLE (11). After much head scratching I finally found that I had dimensioned the array before I defined the variables. Normally I do not do it that way but, for some reason unknowns, this time I had. I have searched the documentation and have found no comments or warnings to define before dimensioning. Upon questioning a few people I found the reactions mixed. Most said "Of course you define before dimensioning". But few were able to say why. If you run a short program you will find that definition after dimension wipes out the dimension. This one is number one for my BUGLIST.

Another problem came from a sloppy habit. As I suppose that most of you do, I many times fail to close the quotes on BASIC commands. This time I found that I could not get a program saved in ASCII text. As you have probably guessed I did - SAVE"PROGNAME,A - instead of - SAVE"PROGNAME",A. This is about number two for the BUGLIST.

How about the times you have forgotten that FOR NEXT loops leave the loop with the loop counter set at one more than the number in the loop statement. When this happens you sometimes get an extra goody when you don't want or need them. The cure, of COURSE, is to subtract one as you leave the loop. This one is number three.

Number four --- When using the PRINT @ function in basic it is good to use a semicolon following the command. I have found that that when I fail to use it the next line is sometimes erased. Also it prevents, I believe, a line feed scroll when printing to the last line of the screen.

Number five --- If a function has been defined improperly the error statement may not appear as a syntax error upon definition. Most error statements do not occur until the function is called. If this happens save yourself a lot of time and look at the definition statement rather than the call statement.

Number six --- Here is a helpful bit of advice if you happen to have ACCEL2. Many times you cannot test all of the branches of a program to find errors without a lot of running and trying. I have found a number of hidden errors by using the compiler whether I really want the program compiled or not.

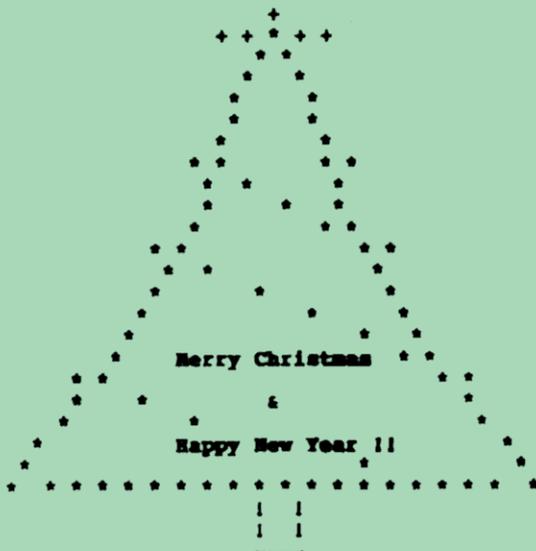
I have mentioned a few choice time wasters here that may save you some time and trouble. If you have any favorites that you would like to share I will compile the list from all of you and publish in the NEWSLETTER or put it in the documentation library. This is the second appeal that I have made to try to get this underway. If I don't make it this time I will give up and assume that you are all BUGFREE programmers. Come on now!! How about a few choice BUGS777?

Tom Anderson

-----

Send Newsletter articles to:  
Editor, South Bay TRS-80 User Group  
Robert Byrd  
458 N. Mathilda Ave. # I-208  
Sunnyvale, Ca 94086  
(408) 732-6775

Please if at all possible send articles saved on disc or tape. I will see that your disc or tape is returned to you. Thanks . . .



South Bay TRS-80 Users Group  
2348C Walsh Avenue  
Santa Clara, CA 95051

FIRST CLASS MAIL