BUGS, BY ROLAND Knight and David Shewchun, is the Grand Prize Winner in the assembly language category of the Summer Programming Project. Bugs is a fast-paced maze game with many move possibilities.

The Program Listings for Bugs are unfortunately too long to publish in the magazine. Send a note to "Bugs," The Color Computer Magazine, Highland Mill, Camden, ME 04843, and include your name and address, and we will send you the listings.

For your convenience, the loading and running instructions for typed-in listings follow the game description and operating instructions.

The Story

The time is far in the future. The space shuttle is a thing of the past, long outdated. Space travel is now common. The human race has spread throughout the galaxy.

Around the year 2198 AD, a small, backward little planet was discovered. This planet is inhabited by a race of funny little creatures known as Fesgges. Fesgges feed on iron found in the core of their planet. They live underground in miles of tunnels they created for the sole purpose of mining their iron. For transportation in these tunnels they use small "cars" that resemble bugs.

The human race considered this race of creatures and their planet to be backward and of no threat to anyone. Several
years later a startling discovery was made: the backward Feseggs had discovered the nuclear bomb. Man suddenly considered the race to be a threat. At first an attempt to form an alliance was made. This failed because the Feseggs consider the human race to be intruders. In fact, they planned to test their newly discovered bomb by attacking several human space stations in the vicinity of their planet.

Bugs In Progress

This is the point in the story where you come in. You have been sent to the Feseggs' planet to destroy the bomb and save the human race! As is always the way, your mission will not be easy. But give it a try anyway, please.

Operation

This game is a little complicated, and it is difficult to describe how it works. We recommend that you play the game as you read these instructions.

When the program starts, there is a brief introduction consisting of a short graphic animation. Press Enter to begin playing. The screen will clear and the playing field will be displayed.

You control the small bug that starts in the upper left hand corner. Movement is controlled with the four arrow keys. Your terrain is the mining tunnels of the Feseggs. Although you can run into walls without harming yourself, touching any Fesegg or a Fesegg's bullet results in the loss of one man. The bottom of the screen displays the number of men you have left, your score and the objects you are currently carrying.

Objects are very important in Bugs. Objects can be obtained in object squares (see below). To fire, press the space bar. You have limited rapid fire capabilities, allowing up to four of your bullets to be on the screen at any one time. You will notice that many tunnels run off the edge of the screen. Moving off the screen by means of these tunnels results in the screen clearing and a new section of terrain is displayed.

Your screen is actually a window displaying only a small section of a large maze of tunnels. There are several special areas you must know about to play Bugs. These areas are referred to as squares (of which there are several types).

Bug Creator Squares: All enemy bugs originate from these squares, so stay clear of them if at all possible!

Object Squares: Once you are fully in this square you can exchange the object you are currently carrying with the one in the square, by pressing Enter. The object in the square is not displayed, so you must pick it up to see what it is. Pressing Enter a second time will again exchange the object you are carrying with the one in the square.

Wall Squares: These walls include a colored wall running down their centers. This wall blocks your passage but can be destroyed by a missile. Missiles can be obtained from object squares. To fire a missile, face the wall you wish to destroy and press F. Note that missiles only destroy colored walls. Once a missile is fired it is gone forever (or at least until you start a new game).

Key Squares: These squares also contain a wall blocking your passage. To remove these walls you must be carrying a key. There are many keys in the game, all of which can be obtained from object squares. To remove the wall, move up against the wall and press Clear. If you are carrying the proper key the wall will disappear.

Transport Squares: These squares transport you to a different section of the Feseggs' mine shafts. You may or may not be transported off the screen. To transport, enter the square and press T.

Special Areas: There are two special areas in Bugs. At one point in the maze a wall crushes your bug out of existence. In another area a slippery section of tunnel sends you smashing into a wall (in this case you lose a man). Both these traps can be deactivated by the use of objects.

Your ultimate goal is to destroy the Feseggs' bomb, but to do this you must first find it. Once you have done so, you must obtain the long range missile. This is operated as normal missiles are, except it destroys only the bomb. To use it, carefully aim yourself at the hole in the side of the reactor and press F. If your aim is
good you will destroy the bomb and gain 
10000 bonus points. Unfortunately, 
after you do this the Feseggs quickly 
bUILD a new reactor and the whole thing 
starts over!

For your convenience, pressing Clear 
instead of Enter at the introduction page will 
pull the game in practice mode. In 
this mode you cannot be destroyed. To 
exit practice mode press the Reset but-
tton.

The following are instructions on how 
to type in and run Bugs. Note: To type in 
Bugs you will need two blank disks. In 
these instructions they will be referred to 
as disk 1 and disk 2. When saving pro-
grams typed in use the name given in the 
first line of the program.

1. If you are unsure whether or not 
your computer has 64K RAM then type 
in and run 64KTEST/BAS. This will tell you 
if you have 64K RAM or not.

2. Type in COMPIL/BAS and save on 
disk 1.

3. Leaving COMPIL/BAS in memory 
type in BUGDATA/BAS and save on disk 
1. Then type RUN. This will create BUDGET/ 
BIN and will point out any errors in the 
typing.

4. Type DE1990-

5. Repeat steps 3 and 4 for WALL 
DATA/BAS, MAZEDATA/BAS, TRANDATA/ 
BAS, TITTLEPAG/BAS, and CHRISET/BAS.

6. Type BG1/ASM into Editor Assem-
bler (Radio Shack Editor Assembler was 
used) and save the source code on disk 
2. Assemble BG1/ASM on disk 1 using 
the name BG1/BIN.

7. Repeat step 6 for BG2/ASM, BG3 
ASM, BG4/ASM, and BUGS3/ASM.

8. Type in CHECK/BAS and save on 
disk 1. Then type RUN. This will verify the 
assembly language part of Bugs and will 
point out errors and tell you where they 
are.

9. Copy BUGS3/BIN onto disk 2 from 
disk 1.

10. Type in MERGE/BAS and MERGE2/ 
BAS and save on disk 1. Run MERGE/ 
BAS, and when prompted by the pro-
gram insert disk 2 on drive 0 and press 
Enter.

11. Turn the computer off and then 
on. Type in BUGS/BAS and BUGS2/BAS 
and save on disk 2. To run Bugs type 
RUN"BUGS".
May 21, 1984

Dear Color Computerist,

Finally! The game you have waited so patiently for is here! The enclosed cassette holds, "BUGS", the winner of our Summer Programming Project, Assembly Language category. We have put it on tape for you due to the fact the listing is 65 long pages. Here are some hints for keeping your tape in good, running condition:

Tape recorders subjected to hard use or infrequent maintenance may load programs it just saved without error, but consistently fail to load certain commercial program tapes.

Heat, humidity, and postal service X-rays can substantially degrade the recording.

Mass duplicated tapes are somewhat quieter than those recorded directly by the machine, so you'll find that a higher volume setting on your recorder is more reliable.

When you do get a program to load that you plan on using later, save it on a fresh tape. Mass duplicated tapes aren't intended to stand up to daily use for weeks and weeks.

If you have any problems, please feel free to contact us. We hope you enjoy "Bugs" and, again, we appreciate your patience. Happy Color Computing!

Sincerely,

Karen Daniels
Operations Manager
To make a tape backup of BUGS, unplug any disk pack and:

1) Turn the computer on and CLOAD the first program on the tape. DO NOT RUN!

2) Type:

20 DEL 20

and press Enter. Now RUN the program. The screen clears, and a message appears:

64K RAM — followed by OK

Your machine is now in all RAM mode, with the Basic ROMs copied over into RAM.

3) Type:

CLOAD M "BUGS2" : CLOAD M "BUGS1"

and press Enter, to load the other two files on the tape. This takes a few minutes.

4) Put a fresh tape in the recorder, cue past the leader, press Record and Play, and type:

CSAVE "BUGS" : CSAVE M "BUGS2", 57344, 61754, 0:
CSAVE M "BUGS1", 5120, 32767, 21000

and press Enter to save a backup on tape.

Step 4 may be repeated for multiple copies.
Dear BUGS Enthusiast:

Here are the Program Listings you'll need to convert BUGS from tape back to disk. Just plug your drives in, turn on your computer, and follow the directions.

If you have bad luck with the both sides of the tape (?IO ERROR), and have tried everything, just give me a quick ring and I'll send you a replacement.

Sincerely,

Jamie Tietjen
Technical Editor
HOW TO GET "BUGS" ON YOUR DISK

10 'BUGS/BAS
20 CLS
30 PRINT "***************BUGS***************"
40 PRINT "BY ROLAND KNIGHT"
50 PRINT "AND DAVE SHERWIN"
60 PRINT "***************"
70 PRINT PRINT "NOW LOADING BUGS"
80 PCLEAR1;FILE1,0;CLEAR20,5119;RUN"BUGS2"

10 'BUGS2/BAS
20 LOADM "BUGS3";EXEC;LOADM "BUGS2"
";LOADM "BUGS1";EXEC

STEP 1
Enter these two Basic programs and save them to disk using the filename given in Line 10 of each. Don't forget to type NEW before starting each one.

2 PCLEAR1;CLEAR100,&H6FF;CLS
10 C=0;FOR X=&H7000 TO &H7016;READ
A$=B=VAL("&H"+A$);C=C+B;POKE X,B;
NEXT;READD;IF C<>D THEN PRINT "***"
DATA ERROR "***";END
11 DEFUSR=&H7000:X=USR(0)
12 PRINT "SAVING BUGS3/BIN TO DISK";SAVEM "BUGS3",&H7000,&H7016,&H7000;PRINT "DONE";END
17 DATA A,50,8E,80,00,7F,FF,DE,E,C,84,7F,FF,DF,ED,81,8C,FF,00,25,PL,1C,AF,39
18 DATA 3252

STEP 2
Type NEW and enter this program. RUN it to put your machine in 64K RAM mode and create BUGS3/BIN, which will do this each time you run the game.

1 FILES1,0;CLEAR20,5119
2 LOADM "BUGS2";LOADM "BUGS1"
3 PRINT "SAVING BUGS1/BIN";SAVE M "BUGS1",5120,32767,21000;PRINT "AND BUGS2/BIN";SAVEM "BUGS2",5
7344,61754,0;PRINT "DONE";END

STEP 3
Rewind your BUGS tape, and press PLAY. Type NEW, enter this program and RUN it. It will load BUGS2 and BUGS1 from tape and save them to disk.

STEP 4
Play BUGS by entering RUN "BUGS" and enjoy!