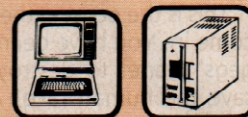


MORE Summer Programming Project WINNERS

Illustration by Rod McCormick



64K Disk Basic



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 much 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 The space shuttle is a thing of the past, long outdated.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 Fesgegs. Fesgegs 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 Fesgegs 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 Fesgegs 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 Fesgegs' 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 first 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 Fesgegs. Although you can run into walls without harming yourself, touching any Fesgeg or a Fesgeg'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 dis-

playing 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.

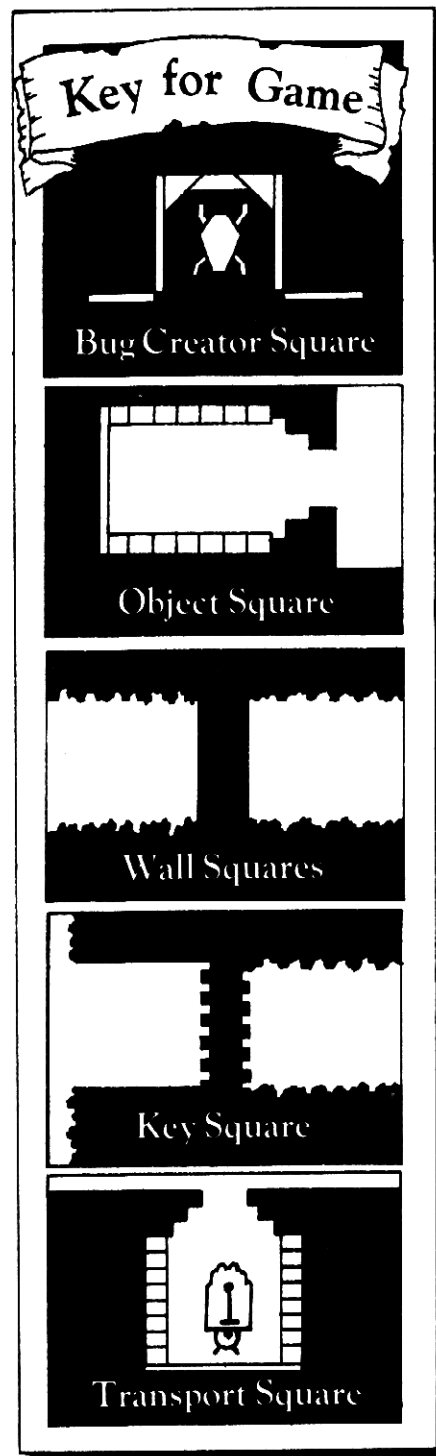
Wall Squares: These walls include a colored wall running down their centers. This wall blocks your passage but can be destroyed by a missile. Missiles can be obtained from object squares. To fire a missile, face the wall you wish to destroy and press F. Note that missiles only destroy colored walls. 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 Fesgegs' 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 Fesgegs' 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



Control Keys

Arrow keys: Movement of your bug ship
 Enter: Used to get objects in object squares
 Clear: Used with a key to open key squares
 T: Used in a transport square to transport to a new area
 Space bar: Fires a bullet from your bug ship
Scoring
 Small white bug: 100 points
 Spider bug: 300 points
 Star bug: 250 points
 Up down bug: 150 points

good you will destroy the bomb and gain 10000 bonus points. Unfortunately, after you do this the Fesgegs quickly build a new reactor and the whole thing starts over!

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

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 programs 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 COMPILE/BAS and save on disk 1.

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

4. Type DEL990--.

5. Repeat steps 3 and 4 for WALL DATA/BAS, MAZEDATA/BAS, TRANDATA/BAS, TITLEPAG/BAS, and CHRSET/BAS.

6. Type BG1/ASM into Editor Assembler (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 program insert disk 2 in 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".



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THE Color Computer... MAGAZINE

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

THE Color Computer...

MAGAZINE

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.

THE Color Computer...


MAGAZINE

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 YOU DISK

```
10 'BUGS/BAS
20 CLS
30 PRINT"*****BUGS*****"
40 PRINT"* BY ROLAND KNIGHT *"
50 PRINT"* AND DAVE SHEWCHUN *"
60 PRINT"*****"
70 PRINT:PRINT"NOW LOADING BUGS"
:PRINT"PLEASE STAND BY...."
80 PCLEAR1:FILES1,0:CLEAR20,5119
:RUN"BUGS2
```

```
10 'BUGS2/BAS
20 LOADM"BUGS3":EXEC:LOADM"BUGS2"
":LOADM"BUGS1":EXEC
```

```
2 PCLEAR1:CLEAR100,&H6FFF:CLS
10 C=0:FORX=&H7000 TO&H7016:READ
A$:B=VAL("&H"+A$):C=C+B:POKEX,B:
NEXT:READD:IFC<>D THENPRINT"***
DATA ERROR ***":END
11 DEFUSR=&H7000:X=USR(0)
12 PRINT"SAVING BUGS3/BIN TO DIS
K":SAVEM"BUGS3",&H7000,&H7016,&H
7000:PRINT"DONE":END
17 DATA1A,50,8E,80,00,7F,FF,DE,E
C,84,7F,FF,DF,ED,81,8C,FF,00,25,
F1,1C,AF,39
18 DATA 3252
```

```
1 FILES1,0:CLEAR20,5119
2 CLOADM"BUGS2":CLOADM"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 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.

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.

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!