

# **WormWars**

James Jacobs

**COLLABORATORS**

	<i>TITLE :</i> WormWars		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY	James Jacobs	October 23, 2022	

**REVISION HISTORY**

NUMBER	DATE	DESCRIPTION	NAME

# Contents

<b>1</b>	<b>WormWars</b>	<b>1</b>
1.1	Worm Wars V3.1 . . . . .	1
1.2	Overview . . . . .	1
1.3	Usage . . . . .	2
1.4	System Requirements . . . . .	2
1.5	Archive Contents . . . . .	2
1.6	Installation and Startup . . . . .	3
1.7	How to Play . . . . .	3
1.8	Title Screen . . . . .	4
1.9	The Playfield . . . . .	4
1.10	Status Display . . . . .	5
1.11	Controls . . . . .	5
1.12	Letters . . . . .	7
1.13	Worms . . . . .	7
1.14	Orbs . . . . .	9
1.15	Fragments . . . . .	11
1.16	Killers . . . . .	11
1.17	Objects . . . . .	11
1.18	Ammo . . . . .	12
1.19	Armour . . . . .	13
1.20	Bias . . . . .	15
1.21	Bomb . . . . .	15
1.22	Bonus . . . . .	16
1.23	Diagonal . . . . .	16
1.24	Eater . . . . .	16
1.25	Grower . . . . .	17
1.26	Ice . . . . .	18
1.27	Life . . . . .	18
1.28	Missile . . . . .	18
1.29	Multiplier . . . . .	20

---

---

1.30 Nitro . . . . .	20
1.31 Powerup . . . . .	20
1.32 Protector . . . . .	21
1.33 Slayer . . . . .	22
1.34 Tongue . . . . .	22
1.35 Teleports . . . . .	23
1.36 Scoring . . . . .	23
1.37 Strategy . . . . .	25
1.38 Field Editor . . . . .	26
1.39 Other Information . . . . .	27
1.40 Contact Details . . . . .	28
1.41 Development System . . . . .	31
1.42 History . . . . .	32

---

## Chapter 1

# WormWars

### 1.1 Worm Wars V3.1

```
=====
|          W O R M   W A R S          |\
|for the Commodore/Escom Amiga||
|          Version 3.1              ||
|          Tue 16 Apr 1996          ||
|                                   ||
|          by Amigan Software       ||
|=====|\
|\-----\
```

Overview

Usage

Other Information

How to Play

Field Editor

### 1.2 Overview

Worm Wars is a game reminiscent of Tron/Snake type games but has advanced features. It is an attempt to combine the simple playability of the basic concept with interesting objects and opponents, for more diverse and strategic gameplay.

One to four worms travel around a rectangular maze leaving a deadly trail behind them. Each must attempt to outscore and outlast the others and also Amiga-controlled creatures, and complete ten levels.

The Field Editor allows you to load, edit and save your own fields to play on, for greater lasting attraction.

It is enjoyable either for the one player, where your objective is to amass huge scores and complete the levels, or for competitive multiplayer games. Computer controlled worms are also available for demo

games with zero humans; to provide practise against a single human; and for greater challenge and opportunities for cooperation when playing with two or three humans. Doubled keyboard play, one joystick and mouse are supported.

MED files can be loaded as background music to enhance your enjoyment.

The game is an example of an Intuition-friendly game, with menus, gadgets and so on, and of course it fully multitasks. And it is free.

## 1.3 Usage

System Requirements

Archive Contents

Installation and Startup

## 1.4 System Requirements

Hardware...

Required: 288K free RAM

Recommended: PAL capability a PAL 640\*256 screen is used.

Joystick for blue worm

Mouse for yellow worm and for Field Editor

Firmware...

Required: Kickstart R2.04+ namely, intuition.library and gadtools.library both need V37+

Software...

Recommended: MEDPlayer.library for music support

MultiView to view this file

## 1.5 Archive Contents

```
WormWars/WormWars
WormWars/WormWars.info
WormWars/WormWars.guide
WormWars/WormWars.guide.info
WormWars/WormWars.MED
WormWars/MEDPlayer.library
WormWars/1
: : :
WormWars/10
WormWars/Source/WormWars.c
WormWars/Source/WormWars.h
```

## 1.6 Installation and Startup

It is better to move the MEDPlayer.library to your LIBS: directory if you need it. The version included is 5.0.

Everything else can go anywhere, but it should all be on the same directory level (we suggest inside the WormWars directory).

You will need your current directory to be the WormWars directory before executing from the CLI (Workbench handles this automatically). This will allow it to load the music and field files, and the music library if it has not been moved.

If the joyport cannot be allocated on startup, the blue worm cannot be selected as human.

If the audio cannot be set up properly then it is disabled.

MED files must be in MED, as opposed to OctaMED, format.

Fields are loaded as required. If one is required and cannot be loaded, a blank field will be substituted.

## 1.7 How to Play

Worm Wars is an arcade game for one to four players. Each player controls a worm. The worms move around a rectangular playfield, leaving their tails behind them. Each worm begins with 50 lives and aims to amass the most possible points and to stay alive longer than the other worms.

Worms

Protectors

Orbs

Killers

Title Screen

The Playfield

Status Display

Controls

Letters

Objects

Scoring

Strategy

---

## 1.8 Title Screen

```

                Esc F1 F2 F3 F4
1 2 3 4 . . . . .
. . . . . Ret
. . . . . ur      .      4 . .
Shift . . . . . M . . . . . Shift . . . 1 2 3 E
      -----Spacebar-----          -.- . n

```

The keys 1-4, or F1-F4, will toggle the worm controls through NONE, HUMAN and AMIGA. They will do likewise when shifted but in the other direction.

Esc will exit to Workbench immediately.

RETURN (or ENTER on the numeric keypad) will begin the game.

The spacebar will enter the

Field Editor

.

M toggles the music on and off.

Project|Quit: Amiga-Q As Esc.

Module|Field Editor: As spacebar.

There are four worms to choose from:

Colour	Human Controls	Status Info	Toggle Key	Letters
	Green C and L	Left Keyboard	Top left	1
	Red O and E	Right Keyboard	Top right	2
	Blue M and T	Joystick	Bottom left	3
	Yellow P and E	Mouse	Bottom right	4

Any combinations of human and Amiga control are acceptable, but at least one worm must exist. Each worm can be:

Human: Select the worm which supports your desired controls

.

Amiga: The worm will be controlled by the Amiga, but in every other respect is a normal worm. Note that green (worm one) is the poorest Amiga player, through to yellow (worm four), the best player.

None: The worm will not be used.

## 1.9 The Playfield

The playing field measures 50\*39 squares.



The edges of the field are mostly toroidal. Worms, orbs and protectors can cross sides. Killers, bullets, missiles and bombs will respect the field edges.

Wall: These are indestructable, except when killers die on them.

Brick: These are roughly equivalent to worms' tails, except that they cannot be destroyed by bombblasts.

Empty: 1 point.

Silver: 100 points.

Gold: 500 points.

## 1.10 Status Display

In the text area will be a timer reporting the total time for this game so far (not including paused time, of course).

Near the edges of the field will be a square showing your most recent cause of damage, and which letters you have collected.

Score: Highlighted if you have any multipliers. You can clock it at 10 million.

Lives: Highlighted if above original (50). Maximum is 100.

Bias: Your current bias level. Maximum is 100.

Ammo: Remaining ammo . Maximum is 100.

Power: Your current power . 'Quint.' and 'Sept.' are for quintuple (5x) and septuple (7x) power.

Armour: Armour strength. Maximum is 100.

Tongue: Tongue strength. Maximum is 100.

Eater: Eater strength. Maximum is 100.

Speed: Current speed. Highlighted if you possess nitro.

Diagonal: 'On' if you have it, 'Off' otherwise.

## 1.11 Controls

---

Esc

```

. . . . .
  Q W E . . . . . P . . .
    A S D . . . . .      U      7 8 9
Shift . Z X C . . . M . . . Shift  L D R  4 5 6
      -----Spacebar-----          -0- .
    
```

Player 1

Player 2

Esc will exit to the main menu. Shift-Esc exits to Workbench immediately.  
 P will pause until it is pressed again.  
 M toggles the music on and off.

Keyboard [Red and Green]:

2 players may use the keyboard, playing at each end.  
 X and C are both down-right for the green worm.  
 5 and 2 are both down for the red worm.  
 Spacebar fires for the green worm; 0 on the keypad fires for the red worm.  
 If only one human is on the keyboard, both sets of keyboard controls are available for that player, whether it is the green or red worm.

Joystick [Blue]:

The blue worm can use a joystick plugged into port 2. If the joystick could not be set up during initialization then the Human option will not be available.

Mouse [Yellow]:

The yellow worm can use a mouse plugged into port 1.  
 Using the mouse is slightly different from the other controls:  
 Turning is relative rather than absolute. Use the left button to turn left from your current heading, and the right to turn right from it. This is done when the cursor is within the playfield.  
 Firing is accomplished by pressing either button with the cursor over the green or red worm areas.

Speed changes are done in the blue or yellow areas. The left button will speed you up and the right button will slow you down.

```

.....|-----|.....
.      .|          |.      .
.  Click any  .|  Click LEFT in playfield  |.  Click any  .
. button here .|          to turn left     |.  button here .
.   to fire   .|          |.               |.   to fire   .
.             .|          |.             |.             .
.....|          |.....
@      @|          |@      @
@  Click LEFT  @|          |@  Click LEFT  @
@  Click RIGHT @|  Click RIGHT in playfield |@  Click RIGHT @
@             @|          to turn right     |@             @
    
```

## 1.12 Letters

The main objective of the game is to complete all the levels, of which there are currently 10. The level will be completed and the next loaded whenever a worm has all eight letters, which together spell the word COMPLETE. All worms will then lose all their letters.

There will always be one, neither more nor less, letter onscreen at any given time. When a worm collects it, another, which that worm needs, will appear.

Collecting a letter is normally worth 1 000 points, but if it is also your own colour you will instead receive 2 000 points.

Collecting a bonus will give you a random letter.

Each level is slightly faster than the previous one, and the fields themselves are more fiendishly designed, although also containing greater treasures.

The player who completes the final level receives 1 000 000 points and the game ends.

The first player to reach 10 000 000 points, thereby clocking the game, will win (and the game ends, of course).

## 1.13 Worms

Worms are obviously the primary focus of Worm Wars and can be controlled by humans or the Amiga.

A worm consists of a head, 1 square in size, and a tail, which is formed in the wake of the head's passing. As the worm moves, the tail stretches out behind its head.

The head's appearance indicates the 'mode' the worm is in, and also the direction it is currently travelling. It will flash when the current mode is at low power.

Worms begin with 50 lives. 1 life is lost every time the worm takes damage, which can be by various calamities.

Lives will increase your lives by 1-5. Whenever you are taking damage your head will change to a skull \*temporarily\*. When 0 lives is reached, the worm is dead and the skull is permanent. Every 10000 points go will be awarded an extra life.

Any orb, worm, protector

or  
 worm bullet  
 which hits the  
 skull of a dead worm will receive 1000 points.

The cool part is that if a worm's head or protector hits it, as well as the 1000 points you will get everything the worm had at the time of death (

multi  
 ,  
 bias  
 , power ,  
 ammo  
 ,  
 armour  
 ,  
 tongue  
 ,  
 eater  
 ,  
 nitro  
 ,  
 diagonal  
 ), in addition to what you already had.

The skull will absorb any  
 missiles

,  
 killer bullets  
 or

fragments  
 which collide with it. It is immune to  
 bomblasts  
 .

Collision with any part of a worm by the head results in the loss of a life, unless a  
 tongue  
 or  
 eater  
 is in use.

A worm with no

ammo  
 can jump instead. If the  
 destination is a wall or killer you will not jump. The distance varies according to speed, and is shown below.

Eaters  
 will also temporarily prevent more tail  
 from being created. Instead, empty spaces are left behind, except when passing over tails, in which case points are received and silver or gold is created.

Worms can move in the 4 orthogonal directions; diagonal movement is also allowed if a

---

diagonal  
is collected. There are normally  
3 available, although this may be increased to 5 with a  
nitro  
.

Tongue, armour and eater are 'modes' and only 1 at a time can be used.  
The current selection will be whatever was most recently collected. When  
the power of one of these runs out you will instantly switch to another  
type, if possible.

Each time you cause another worm to lose a life, it is worth 1000 points for  
you.

If you are the last worm remaining (in a multiplayer game) you will get a  
grand prize of 5000 points. Despite this is still possible, of course,  
to lose even if you were last remaining, as the other worms could have been  
very successful points-wise except took too much damage.

Speeds available are:

* Very Slow	quarter speed	1 square
. Slow	half speed	3
. Normal	normal	5
. Fast	double speed	7
* Very Fast	quadruple speed	10

\* The speeds 'Very Slow' and 'Very Fast' are only available to worms  
with

nitros  
.

If you press a direction you are already going in, you will double your  
speed. You can also slow down by pressing against your direction.

Worm can die by collision with:

wall	always
killer	always
brick	except with tongue or eater
worm head	except with tongue or eater
worm tail	except with tongue or eater
	(if multi-worm game, armour will protect against your own tail)
orb fragment	except with armour
worm bullet	except with armour
killer bullet	except with armour
enemy missile	except with armour
enemy protector	except with armour
orb	except with armour

## 1.14 Orbs

Orbs are controlled by the computer. They bounce whenever they hit ←  
a

solid object, so their motion can be predicted by the skilled player.

There can be up to 7 orbs at a time. Normally, they are yellow, although their colour can change according to their 'mode'.

Orbs have their own points. Each begins with 200 (so that even a new orb is worth something) and racks them up similarly to how a worm would. Their points are always yielded to those that kill them (except to killers, which do not have their own scores).

Orbs can be slain in these ways:

1. \* Orb collects
    - ammo
    - or
    - slayer
    - , when
    - unarmoured
    - .
  2. \* Worm gets a
    - slayer
    - . All points of the orbs go to
    - the worm responsible.
  3. \*
    - Fragment
    - of an
    - exploding
    - orb,
    - when
    - unarmoured
    - .
  4. # Becoming trapped (ie. unable to move).
  5. # Collision with an unarmoured orb, unless
    - armoured
    - .
  6.
    - Bomb
    - , when not
    - armoured
    - . All
    - points of the orb go to the worm or orb responsible.
  7. Collision with a
    - protector
    - .
  8. Collision with an
    - armoured
    - worm.
  9. # Getting hit by a
    - missile
    - when not
    - armoured
    - .
  10. Being
    - shot
    - by a worm, when not
    - armoured
    - .
  11. Collision with an armoured orb.
-

12. Collision with an unarmoured worm, unless armoured.

\* will cause the orb to explode .  
 # will leave a  
     bonus  
     at the site of death.

## 1.15 Fragments

8 fragments will be generated by each explosion. They travel ←  
     outwards at a  
 uniform speed, and are bounded by the screen edges.  
 Fragments will not harm those with  
     armour  
 .

## 1.16 Killers

Killers walk along the top of walls, bricks and tails, firing at ←  
     worms.  
 Unlike shots fired by worms, killer bullets travel at a finite rate;  
 therefore, they can be evaded. You will die if you hit a killer.  
 Up to 9 killers can exist. Each killer can only have one bullet  
 onscreen at a time.

Killers can be slain in 5 ways:

1.  
    Worm bullet  
    .
2. Killer bullet.
3.  
    Slayer  
    .
4.  
    Orb  
    bouncing off it.
5. Orb  
    fragment  
    .

Dead killers turn into  
     bonuses  
     . This is the only way  
 to destroy walls.

## 1.17 Objects

---

Ammo  
 Armour  
 Bias  
 Bomb  
 Bonus  
 Diagonal  
 Eater  
 Grower  
 Ice  
 Life  
 Missile  
 Multiplier  
 Nitro  
 Powerup  
 Protector  
 Slayer  
 Tongue  
 Teleport

## 1.18 Ammo

Frequency: Uncommon  
 Points Value: 200

\* WORMS \*

This will provide 1-6 bullets. If you have powerups

you will fire a wider shot, but this will still only cost you one bullet, of course.

Bullets are fired by pressing your appropriate fire control

If a bullet is available, you will fire. This bullet is virtually



instantaneous. If you have no bullets, you may  
 jump  
 .

Bullets can freely pass through, without destroying:

your own protectors

Bullets can freely pass through and destroy:

worm tails  
 bricks

objects

unarmoured

orbs  
 chasers

unarmoured  
 worm heads

They will destroy, but be stopped by:

killers  
 They cannot destroy, and will be stopped by:

other worms' protectors  
 walls  
 armoured worm heads  
 armoured orbs

A bullet which hits a teleport will be teleported and continue on its way, without harm to the teleport. You will get the teleport bonus, too.

Any silver, gold, objects or skulls destroyed by your bullet's journey will be credited to your score.

In the absence of obstructions, a bullet continues going until it reaches the edge of the field.

\* ORBS \*

The orb will

explode  
 , unless it is  
 armoured  
 .

## 1.19 Armour

Points Value: 200      Frequency: Common

---

\* WORMS \*

Armour will protect worms from getting killed by:

1. Bullets of any type, whether from  
worms  
or  
killers  
.
2. bombs  
.
3. fragments  
.
4. missiles  
. In fact, the missile will not even  
hunt the worm.
5. protectors  
.
6. collisions with  
orbs  
. The orb will always die,  
regardless of whether it itself had armour.
7. unarmoured orbs.
8. your own tail, in multi-worm mode.

Armour is only temporary. Its power will count down at a constant rate, regardless of the worm's speed.

While you have armour your head-image will show you wearing a helmet. When your armour is nearly gone your head will flash.

Armour power can be extended by the acquisition of more armour.

\* ORBS \*

Armour will protect orbs from getting killed by:

1. Bullets, whether from  
worms  
or  
killers  
.
2. Bombs  
.
3. Fragments  
.
4. Missiles  
. In fact, the missile will not even  
hunt the orb.

Armour is only temporary. Its power will count down at a constant rate, regardless of the orb's speed.

---

While it has armour the orb will be green.  
Armour power can be extended by the acquisition of more armour.

## 1.20 Bias

Frequency: Rare  
Points Value: 500

\* WORMS \*

This item does these:

- . missiles will not home in on you.
- . orbs with eater will leave gold in your tail instead of silver.
- . whenever you acquire armour, tongue, eater, ammo, bias, ice bomb or lives you will get the maximum possible amount.
- . when you get bonus, the letter will be one you actually need.
- . your protectors can turn killers into bonuses.
- . you can shoot through brick.
- . whenever you shoot you will also launch a missile.

\* ORBS \*

This will remove all bias from all worms.

## 1.21 Bomb

Frequency: Uncommon  
Points Value: 300

As soon as you go over one of these the bomb will go off, clearing the area around you. The blast radius is random. The only things that are not destroyed within the radius are:

- .
  - armoured
  - heads.
- .
  - armoured
  - orbs
- . walls and bricks.
- .
  - killers
- . the triggerer's
  - missile
  - , if any.
- .
  - teleports
- .

.  
                   protectors  
 .  
 .  
                   skulls  
 .  
 . silver and gold.

Any

                  orbs  
                   or objects that are destroyed yield their  
 points to the triggerer of the blast.  
 The blast is always contained by the edges of the field.

## 1.22 Bonus

Frequency:           Common  
 Points Value:       100

\* WORMS \*

You will be given a random letter. Note that it may be one you already have, and also you are only given 100 points, not the amount you would get from collecting a real letter.

If you have  
                   bias  
                   , the letter will be one you  
 actually need.

\* ORBS \*

These have no purpose other than to increase its score.

## 1.23 Diagonal

Frequency:   Uncommon  
 Points Value: 300

\* WORMS \*

Once you have this item, you will be able to move diagonally.

\* ORBS \*

Each of these will double the orb's speed, to a maximum of 'very fast'.

## 1.24 Eater

Frequency: Rare

Points Value: 900

\* WORMS \*

This item will provide these benefits:

1. heaps of points.
2. the effects of a  
tongue  
.
3. the worm can clear areas of the field by going over them.

It provides points this way:

1. whenever the worm eats a tail square it receives:  
50 points if it eats its tail  
100 points if it eats another worm's tail
2. you stop leaving a tail behind you, and instead leave:  
empties  
or silver if it goes over its tail  
or gold if it goes over another worm's tail

Your

protectors

will not eat any tails while you are

in eater mode, to help you maximise your score.

While you have eater your head will change shape. Eater counts down at a constant rate. When it is nearly gone your head will flash. More eater will replenish it.

\* ORBS \*

This item provides these benefits:

1. heaps of points.
2. the effects of a  
tongue  
.
3. the orb can clear areas of the field by going over them.

It provides points this way:

1. whenever the orb eats a tail square it receives 50 points.
2. it leaves:  
empties  
or silver if it goes over a worm without  
bias  
or gold if it goes over a worm with  
bias  
While eater is in use the orb will be red.

## 1.25 Grower

Frequency: Very rare

Points Value: 500

\* WORMS \*

---

This will cause all gold and silver onscreen to 'grow', expanding into their neighbouring squares if those neighbouring squares are empty.

\* ORBS \*

This will cause the orb to split, as if it had collected a life  
life  
.

## 1.26 Ice

Frequency: Very rare

Points Value: 600

\* WORMS \*

Ice will freeze all  
orbs  
,  
killers  
and  
other  
worms  
for a short period of time. There is no defence against  
ice.  
Additional ice will be added onto your amount remaining.

\* ORBS \*

If any orb gets ice it will freeze all worms for a short period.

## 1.27 Life

Frequency: Uncommon

Points Value: 500

\* WORMS \*

1-6 extra lives. You can exceed your starting number (50).

\* ORBS \*

This will cause the orb to split into up to 4 orbs, depending on the number of orbs already in play.

Each orb will be an exact clone of the original in all attributes, except starting direction.

## 1.28 Missile

---

Frequency: Uncommon

Points Value: 400

\* WORMS \*

Missiles are automatically guided and will hunt down the nearest vulnerable worm or orb.

They can be destroyed by:

1. a wall.
2. a
  - killer
  - .
3. other
  - worms'
  - heads and tails, if that worm has
  - armour
  - .
4. an enemy protector .
5. a
  - bombblast
  - (except yours).
6. an
  - orb
  - collecting a missile object.

Missiles will not cross field edges.

An

- orb
- can be destroyed by a missile if it is not
- armoured
- .

All missiles will be destroyed if any

- orb
- collects a

missile object.

Only 1 missile can be active for each worm at a time.

Unlike bullets, missiles do not collect points for their firer on they journey.

If you collect a missile:

1. while you already have an active missile; or
2. there are no other worms, orbs or chasers alive

then you will receive only points.

\* ORBS \*

All missiles currently active will be destroyed.

---

## 1.29 Multiplier

Frequency: Very rare  
Points Value: 500

Each time you get a multiplier, your scoring for the rest of the game will be doubled.

Your points bonus for actually getting the multiplier will *\*not\** be affected by the new multiplier itself.

If you get more than one it is doubled again. You can collect up to 4 multipliers.

Multipliers	Scoring
0	*1
1	*2
2	*4
3	*8
4	*16

## 1.30 Nitro

Frequency: Uncommon  
Points Value: 100

\* WORMS \*

A nitro will enable you to obtain five speeds instead of the usual three. The new speeds are 'very slow' and 'very fast', at quarter and quadruple normal speeds respectively. These are used in the same manner as normal speed changes.

Once obtained, a nitro is kept until the end of the game and its mere possession is enough to grant the abilities.

\* ORBS \*

Each of these will double the orb's speed, to a maximum of 'very fast'.

## 1.31 Powerup

Frequency: Uncommon  
Points Value: 300

\* WORMS \*

This is power for your  
bullets  
. Each bullet you  
fire becomes wider, requiring less accuracy for your firing.

```

|           |||           ||||           |||||           |
          bullets

```



```

          |          |||          ||||          |||||          : ←
          head
:         :         :         :         # tail
#         #         #         #
#         #         #         #

Single      Triple      Quintuple      Septuple
(no powerups) (one powerup) (two powerups) (three or more)

* ORBS *

```

Each of these will double the orb's speed, to a maximum of 'very fast'.

## 1.32 Protector

Frequency: Rare

Points Value: 500

\* WORMS \*

Acquisition of this item will give you a companion who orbits around you (as best he can) collecting objects for you exactly as if you had moved over them yourself.

You can have up to 3 protectors, each orbiting at a greater distance than the last.

They can destroy on contact:

1. Bullets of all types, whether fired by worms or killers.
2. Orbs .
3. Worm tails, except yours. With eater, no tails are eaten.
4. The other player's head, if unarmoured.
5. Enemy missiles.
6. Fragments.

Protectors can be slain in these ways:

1. If any orb collects a protector object, all

protectors will instantly be slain.  
 2. If protectors collide, they will be slain.

\* ORBS \*

This will slay all protectors.

### 1.33 Slayer

Frequency: Rare  
 Points Value: 400

\* WORMS \*

Slayers are used immediately upon acquisition. They will destroy all  
 orbs and

killers  
 instantly, and  
 take a life from all  
 unarmoured  
 enemy worms.

All

orbs  
 will  
 explode  
 simultaneously,  
 so it must be used with care.

\* ORBS \*

The orb will

explode  
 , unless it is using  
 armour  
 .

### 1.34 Tongue

Frequency: Uncommon  
 Points Value: 200

\* WORMS \*

Tongue allows you to go through bricks and worms (heads or tails) without  
 taking damage.

You can kill other

worms  
 with tongue by 'crossing heads' (ie.  
 your head and their head are both in the same square). If the other worm  
 also has tongue then neither will die and you will both receive 1000  
 points every time you cross heads.

Tongue is only temporary. Its power will count down at a constant

rate, regardless of the worm's speed.

While you have tongue your head-image show your tongue poking out. When your tongue is nearly gone your head will flash.

Tongue power can be extended by the acquisition of more tongue.

\* ORBS \*

This will allow the orb to pass through bricks and tails instead of bouncing off them.

While it has tongue the orb will be blue.

## 1.35 Teleports

Frequency: Rare

Points Value: 400

You will never get just one of these; there will always be a pair. Going through one will teleport you to the other, and bestow points also.

The following are teleported:

- . worms
- . orbs
- . bullets (
  - worm
  - and
  - killer
 ).
- . fragments

Protectors

are invisible over teleports. You will get points for them being there, though.

Two teleports can be defined in the

Field Editor

; another two

may appear randomly during play.

## 1.36 Scoring

Unless otherwise indicated these apply to both orbs and worms.

--OBJECT POINTS--

+100 Bonus

+100 Nitro

+200 Ammo  
 +200 Armour  
 +200 Tongue  
 +300 Bomb  
 +300 Diagonal  
 +300 Powerup  
 +400 Missile  
 +400 Slayer  
 +500 Bias  
 +500 Life  
 +500 Multiplier  
 +500 Protector  
 +500 Grower  
 +600 Ice  
 +900 Eater

--SQUARE POINTS--

+1 Empty  
 +100 Silver  
 +500 Gold

--LETTER POINTS--

+1000 Another colour  
 +2000 Your colour

--ORB SCORES--

Orbs  
 have points, which are yielded to those that slay them, whether  
 they be worms or other orbs. (They begin at 200, unless 'cloned' by collecting  
 life  
 , in which case they will have the score of the  
 parent.)

--SKILL POINTS--

\* WORMS \*

+500 Kill a  
                   killer  
 .  
 +500 You shoot an orb, killer or worm's head.  
 +1000  
                   Cross heads  
 .  
 +5000 You are the last surviving worm.  
 +1000000 You complete the final level.

\* ALL \*

+400 Each time you  
                   teleport  
 .

+1000 Damage a worm.  
+1000 Collect a  
skull  
.

There are also the bonuses for going over tails with  
eater  
.

## 1.37 Strategy

Killers  
can only shoot at an edge (ie. if they are  
adjacent to a free space).

You will get more points by actually  
shooting  
something than  
killing it by other methods, and more from collecting real letters than  
getting  
bonuses  
.

Remember that  
bullets  
, bombs ,  
missiles  
and  
fragments  
will \*not\* wrap around through wall gaps. Therefore you will be ←  
safer if  
you cross over.

If you have  
bullets  
, save them until you have a few  
  
powerups  
, to use the bullets to maximum effect.

The best way to avoid a  
missile  
is to try and get it  
to follow another creature.

Going quickly between  
teleports  
(usually done while you have tongue  
or eater) will yield many points.

Crossing heads while you have  
tongue  
or  
eater  
is a good

---

maneuver.

The only way to destroy a wall is to kill a killer which is on it.

If you are moving fast you will be getting more points, but slower speeds are required for fine maneouvering.

## 1.38 Field Editor

The Field Editor allows you to load, edit and/or save the playfields which the worms compete on. You can create any pattern you desire, subject to a few minor rules, and therefore the onus is on the creator to ensure that the field is well-designed.

The format of V3.0 field files is incompatible with V3.1, and vice versa.

```
Project|New:      Amiga-N   Clear the current field.
Project|Revert:   Amiga-R   Reload current field from disk.
Project|Save:     Amiga-S   Saves the current field.
Project|Quit:     Amiga-Q   As Shift-Esc.
Module|Title Screen:  As spacebar.
```

Esc

```

. . . . . Del Hel
. . . . . Ret
. . . . . ur
Shift . . . . . M . . . . . Shift . . . . . E
-----Spacebar----- -.- . n
```

Esc, Enter or the spacebar will exit to the title screen.

Shift-Esc will exit to Workbench immediately.

M toggles the music on and off.

Del and Help change the current level (lower and higher, respectively).

If you are have modified your field since you saved it and want to do something which will lose the changes you will be asked if you would like to save first.

The 5 gadgets to the left of the field will change your current 'brush' to the appropriate type, as would be expected. The pointer imagery will be altered to reflect this.

Note that the right mouse button, when over the playfield, will function as EMPTY rather than bringing up the menus, but you have to click it over each square you wish to affect (ie. no dragging).

The 3 gadgets to the right are slightly special:

Teleports: 2 teleports may be defined in the Field Editor. The gadget to the left of the skull is for teleport #1 and the gadget to the right of the skull is for teleport #2. These teleports

will teleport to each other during game play. They are completely independent of any teleports that may be created randomly as the game progresses. It is illegal to have only 1 teleport as it would lead to

nowhere. Therefore, whenever the field is saved or you return to the Title Screen, any lonely teleport is removed.

**Skull:** In the context of the Field Editor, the skull is used to represent the starting location of all the worms. This is invisible during gameplay. It is important to leave some empty squares in the four cardinal directions from this square so that worms are not injured as they begin play.

```

      ^
      |
      |

Blue

<--- Green  SKULL  Red --->

Yellow

      |
      |
      v

```

#### Hints for Field Creation

One starting location is specified for all worms. It must be a considerable distance from all barriers as worms may emerge from it in any direction. Also, try not to make any starting configuration give an unfair advantage. (The easiest way to ensure this is through the use of symmetry.)

Avoid the temptation to make mazes which have their corridors only 1 tile wide, unless you realize that it will be very difficult to play. 3-5 tiles width is usually more appropriate for less skilled players.

Point-squares should be used with restraint, and generally only as a reward for difficult maneuvering. The average field should give have only about 5% point-square density. Richer fields can be made for experienced players, but they should be as a reward for tricky maneuvering.

The more walls and bricks there are, the more prevalent killers will be.

Killers only fire when they are on the edge of the wall or brick, but they move randomly. Therefore some wall configurations will be more deadly than others. For example, thin lines provide maximum contact between worms and killers, and thick square areas will quickly generate new killers.

The field is not as large as I would like it to be, and as a result you need to consciously give the players some room when you are designing your fields.

## 1.39 Other Information

Contact Details

---

Development System

History

Catalogue

Amigan Software are an attempt to create quality Canberran software for all the Amiga's loyal users worldwide.

This software is completely free.

## 1.40 Contact Details

### BUGS

There are no known bugs in V3.1. The bugs which existed in V3.0 should now all be fixed. It has been tested [and played :-)] heavily on the

development system

and not formally beta tested on any

other Amiga. Anyone wishing to become a beta tester is welcome to do so.

Unfortunately due to the limitations of the

development system

(specifically, insufficient memory and lack of an MMU) we were unable to run this program through a debugger, and certainly not through any sort of Enforcer-type program. (In fact, we were not able to compile it with any optimization options on, either, so recompilation on a powerful Amiga with such options on should reap benefits.) We have followed the documented RKM standards and have not deliberately used any unsafe tricks.

Despite this, the usual disclaimers are in order:

No warranties are made expressly or implied in regards to this product. It is provided 'as is'. Any usage made of it is at your own risk.

If you do find any bugs, please contact us immediately.

### FIELDS

If you create a field that you wish to share with others, you can send it to us and it will most likely be included as a level with the next update of Worm Wars. If any had been received from V3.0 users then we would very likely have converted them to V3.1 format and included them as levels in this release, with full acknowledgements. That did not happen so all levels have been created by Amigan Software.

### MUSIC

Send in a SoundTracker or MED module and we may use it in the next release, with acknowledgements, of course.

### SOURCE CODE

---



C source code is provided. It should have been included also with V3.0 but was not, due to an archiving error [sorry! :-([)].

If you recompile it with optimizations turned on, it will run faster. You are welcome to modify the code to produce enhanced versions.

#### COMMENTS AND SUGGESTIONS

These are always welcome. All improvements thus far have been the initiative of Amigan Software due to lack of any user input. I have created the following list of things which *could* be added to Worm Wars. It is most unlikely that they all will be implemented, certainly not by V3.2. Therefore you could 'vote' for those you like (or of course feel free to suggest anything we haven't thought of):

- . Support for a second joystick.

This would also require support for non-mouse input into the Field Editor. Which would be quite easy.

- . Icons created for field files.

Rather unnecessary. Perhaps double-clicking such an icon could bring up the Field Editor automatically with the appropriate field.

- . Sound effects.

Main problem would be getting some good quality effects.

- . Scrolling, larger-than-window playfield.

I'm not sure how smoothly the OS libraries could do this. Perhaps I could bash the hardware directly, after legally obtaining permission from the OS, but half the idea of Worm Wars is to use the official function libraries. Also it would require either separate windows for each player or some mechanism to force them to be always near each other, for playability reasons.

- . 256-colour graphics.

I do not have the Native Developer's Kit, only the R2.04 ROM Kernal Manuals. So somehow I would have to get the appropriate R3.0+ AGA documentation. Also, it would be much slower due to 8 bitplanes instead of 4, and may not look much better due to my limited artistic skills. (Any grafix designers who want to help are welcome!) And it would reduce the potential audience also (by excluding OCS and ECS users).

- . Other resolutions.

It did support NTSC in some earlier versions. Screen real estate is too valuable however to sacrifice 56 raster lines. Also, fields created in NTSC mode would not be compatible with those created in PAL mode, due to different playfield

---

sizes.

Interlaced mode is possible but many Amigoids unfortunately still do not have the necessary chipsets and/or monitors to make use of it properly. [This includes me, by the way :-) !]

Superhi-res could be done but only for AGA users. (ECS supports it but only in a very limited way.) It is feasible, if I had the NDK (because I would only support AGA superhi-res), but I would not do it unless I also doubled or quadrupled the vertical resolution. (It would look very tasty I must admit.)

. Modem or null-modem link.

An interesting possibility, although a hassle to implement.

. More objects.

There are already 17 objects, not counting teleports, point-squares or letters. The upper limit will be 20. Thereafter I will remove an object for each that I put in, mainly for performance reasons. I have currently run out of ideas for new objects anyway...

. More creatures.

There are already worms, orbs, killers and protectors, all of which need to be moved, checked, etc., and also missiles, bullets (worm and killer), fragments, bombs and growers, which slow the system down when they are in use. This is unavoidable due to the complexity of the rules and the number of different collisions which need to be checked for. There may be room for a new creature type if good enough, however, or modifications to existing creature behaviours.

. More levels.

This is extremely easy. All that is required is to change the LEVELS constant. It is currently at 10 so that: a) we don't have to design more fields than that; and b) it is possible to achieve victory.

. Assembly language.

Certain critical areas of the game could be coded in assembler for performance reasons.

. Context-sensitive pointer in game.

This would be for the benefit of yellow human worms. The pointer would change to indicate whether it was over a firing, speed-changing or turning region of the screen. Also, the pointer could be sensitive to skulls and teleports in the Field Editor.

. ARexx support.

This would be treading new ground for games. The only two

---

useful reasons I can think of for ARexx capability is to enable users to create algorithmic field generators or to control the AI strategy for worms. In fact, a CRobots-style 'programmers' game' could be offered. I am not sure it is currently justified.

We believe most of the important features are already there. Please contradict us with new suggestions.

Snail mail:

James Jacobs  
Amigan Software  
11 Yate Gardens  
Rivett ACT 2611  
Australia

Voice:

Australia (06) 288 2278

EMail:

rhett@ise.canberra.edu.au

## 1.41 Development System

Hardware...

Commodore Amiga 1200HD/40 too slow  
40Mb 2.5" IDE hard disk too small  
2Mb chip RAM too little  
2400 baud modem too slow  
Philips television too blurry

Firmware...

Kickstart 3.0 And a lovely chip it is!

Software...

Workbench 3.0 The world's best operating system, by far.  
SAS/C 6.3 What a compiler! (and debugger :-) )  
CygnusEd Professional Old and full of bugs but I'm used to it.  
Deluxe Paint 4 Not the AGA version! :-(  
MultiView Hypertext.  
MEDPlayer Programmer's  
Sources The excellent play routines.  
CodeWatcher Tells me it all works :-)  
Lha To make the archive.

Thanks to all those whose software was used to create Worm Wars, and also to the composers of the excellent muzak. Thanks also to Ken D. Miller of MIT for his commentaries regarding the game.

---

## 1.42 History

Note: 'Miscellaneous bugfixes' and 'Rule changes' are not explicitly mentioned, as they generally occur with every new release. There are also always hundreds of code-level improvements.

1.0 [MS-DOS]: 1993. Not released.

1.1 [MS-DOS]: 1993. Not released.

- . Colour.
- . Selectable gamespeed.
- . Scoring.
- . EGA textmode.

1.2 beta [MS-DOS]: Oct 1993.

- . Guns.

1.2 [MS-DOS]: Thu 4 Nov 1993.

- . Helmets.
- . Bombs.
- . Remaining helmets shown on worm heads.

1.3 beta [MS-DOS]: Nov 1993.

- . New colour scheme.
- . More sound routines.

1.3 [MS-DOS]: Fri 11 Feb 1994.

- . Speedups/slowdowns.
- . Improved blast routines.

1.4 [MS-DOS]: Wed 9 Mar 1994.

- . Shields.
- . More sound routines.
- . Improved scoring system.
- . The ability to enter the speed selector whenever desired.

1.5 [Amiga]: Sun 10 Jul 1994.

- . Bonuses, nitros and cannons.
- . Improved scoring system.
- . Orbs.

1.5a [Amiga]: Thu 25 Aug 1994.  
(Maintenance release.)

1.6 [Amiga]: Sun 9 Oct 1994.

- . 1-player mode.
- . Wall gaps.
- . Shadowing and other graphics changes.
- . Killers.
- . Slayers.
- . Monochrome support.
- . More keyboard support.

1.7 [Amiga]: Wed 26 Oct 1994.

- . Orb explosions.
- . Revised scoring.

---

- . Objects can use helmets and nitros.
- . Shields now used immediately.
- . High scores.
- . Field sizes can be set.
- . Reorganised status window.

#### 2.0 [Amiga]: Sat 3 Dec 1994.

- . Opens its own screen.
- . New 16-colour graphics.
  - . Games are now played in rounds.
  - . Cause of death.
  - . Symbols of objects on status bar.
  - . Protectors.
  - . Power-ups.
  - . Optimized code.
  - . Improved multitasking.
  - . Improved keyboard routines.
  - . Joystick support.
  - . Number of players can be reselected for each game.

#### 2.1 [Amiga]: Tue 27 Dec 1994.

- . Title logo.
- . Missiles.
- . Colour alterations.

#### 3.0 [Amiga]: Thu 18 Jan 1996. First version on Aminet.

- . Amiga-controlled worms.
- . Music.
- . New graphics.
- . Field editor.
- . Mouse control.
- . Menus.
- . Up to 4 worms are now supported.
- . Name change.
- . CLI arguments.
  - . Lives.
  - . Multipliers.
  - . Ice.
- . Gadgets.

#### 3.1 [Amiga]. Tue 16 Apr 1996.

- . Growers enlarge all silver and gold.
  - . Verification before losing field data.
  - . Letters.
  - . Levels.
  - . Custom pointers in Field Editor.
  - . Field Editor supports right mouse button.
  - . Amiga-worms have differing skill levels.
  - . Name change of developers.
-