

# Worms Armageddon Update Documentation

20<sup>th</sup> December 2012

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## 1.0 Introduction

Since its initial release in 1999, Worms Armageddon has undergone continual evolution, with two programmers, Deadcode and CyberShadow, continuing to add new features and implement community-requested improvements to the game. This document lists the changes which have been introduced in each version and provides a list of known issues and bugs in the current software.

## 2.0 Supplementary Documentation

This section is an overview of major improvements introduced in the Worms Armageddon updates, starting with v3.5. As such, it is supplementary to the official game documentation. If one wasn't included with your copy of the game, an electronic copy of the original manual can be downloaded from [ftp://ftp.team17.com/pub/t17/manuals/Worms\\_Armageddon.pdf](ftp://ftp.team17.com/pub/t17/manuals/Worms_Armageddon.pdf). Detailed information about the improvements can be found in section **3.0 Version History**. Features affecting game logic may not work unless all players are using a recent enough version of the game.

### Manual Errata

- Page 11 (certain versions): The **Banana Bomb** does not have a bounce setting; it is always on maximum bounce.
- Page 12: **Girder Starter-Pack** is incorrectly documented as "Bridge Kit".
- Page 14: **Earthquake** does not cause the water to rise.
- Page 18: The strike weapons **Mail Strike** and **MB Bomb** are also affected by wind.
- Page 25 (certain versions): The **Invisibility** utility only appears in the weapon panel in network games, regardless how many teams there are.
- Page 25: The **Invisibility** utility remains active until any damaging weapon is used — specifically, anything other than Girder, Girder Starter Pack, Prod, Freeze, Ninja Rope, Bungee, Parachute, Teleport, Select Worm, Skip Go, Surrender, and all Utilities.
- Page 25: **Laser Sight** is incorrectly documented as "Laser Target".
- Page 25: **Fast Walk** and **Laser Sight** last for just one turn.
- Page 27 (certain versions): The PASSWORD option does not exist.
- Page 39: Players can be kicked by clicking on their name, not their team. Clicking on a team removed the team from play.

- Page 39 (certain versions): The "Kick Player" button does not exist.
- Page 45: The default port used for hosting games is **17011**, not 17217.

## General

- Worms Armageddon now runs under the majority of Windows 2000 / XP / Vista / 7 Platforms. (introduced in v3.5 Beta 1, improved in 3.6.30.0)
- It is now possible to successfully minimise W:A in all areas, within the front end and in-game. To minimise the game in the front end, position the mouse cursor at the bottom of the screen and click; to minimise from in-game, select the appropriate option from the Escape menu. **Shift+Escape** also works as a minimisation hotkey both in the front end and in-game. (introduced in v3.5 Beta 1, improved in v3.6.28.0)
- The language used for front end and in-game text can now be chosen manually from the Options menu. (introduced in v3.6.26.4)
- The game has been fully translated to **Russian**, and support for Cyrillic has been added for chat, WormNET game names, worm and team names. (introduced in v3.6.29.0)
- Translatable strings have been moved into external text files, located under the DATA\User\Languages directory. (introduced in v3.7.0.0)
- It is possible to take screen-shots, both in the front end and in-game. To do so, press the **Pause** key. Screenshots are saved in PNG format, are named **screenNNNN.png** and are stored in **User\Capture** under your main W:A folder. (introduced in v3.6.19.17, improved in v3.6.24.1, v3.6.28.0)
- W:A now uses 32-bit color graphics modes both in the front end and in-game. Internally it still uses 8-bit palettised graphics, with a software renderer converting to 32-bit color in real time. DirectDraw and Direct3D rendering backends are available. (introduced in v3.6.31.2b, improved in v3.7.0.0)
- The colour scheme used for allies (red, blue, green, yellow, magenta, cyan) can now be modified to allow those with certain types of colour deficiency to be able to easily distinguish problematic colour pairs. (It is targeted particularly towards protanomaly.) This switch has been added to the Options menu, replacing the terrain editing button in that screen. (introduced in v3.6.22.1)
- In case of an unrecoverable error, W:A will save an error report to the file **errorlog.txt**, and a minidump to **crash.dmp**. (introduced in v3.6.28.0)
- An option has been added to load WormKit modules (DLL files beginning with "wk") on startup. Previously this was achieved by using a loader program (WormKit.exe) or a modified DLL (WormKitDS). (introduced in v3.7.0.0)
- Certain settings may be configured with the help of included registry scripts, which can be found in the **Tweaks** subdirectory. Before v3.6.30.0 introduced a graphical user interface to configure these options, using the registry scripts and direct registry editing was the only way to set these options. (See **Footnote 4.**)
- Updates for CD editions of the game are distributed as a self-contained installer, which can automatically download and install prerequisites and detect common mistakes. (introduced in v3.6.28.0)

## Front End

- If you have achieved a Gold Medal in a mission, you can now adjust the number of Attempts by left- or right-clicking the number. (introduced in v3.6.29.0)
- It is possible to precisely adjust certain game settings by holding **Shift** and left- or right-clicking the settings to increase or decrease the values by 1. (introduced in v3.6.28.0)
- The Scheme combo box now allows you to navigate to subfolders under the **User\Schemes** folder. (introduced in v3.6.29.0)
- A new utility option editor has been added, allowing to edit the crate probabilities, delays etc. of utilities. (introduced in v3.6.30.0)
- It is possible to play TCP/IP online games directly, bypassing WormNET. To host, click the **Direct TCP/IP** button on the network selection screen; to join, enter the host's IP address in the field near the **Direct TCP/IP** button, and click the button or press **Enter**. A port may be specified using the **IPAddress:Port** format. (introduced in v3.6.19.7, improved in v3.6.28.0)
- It is now possible to set the TCP port used for hosting games. This setting is in the Network Configuration screen, and affects both WormNET and Direct IP games. Games hosted on a port other than the default one, **17011**, will be inaccessible to game versions prior to 3.6.28.0. (introduced in v3.6.28.0)
- W:A will now attempt to automatically forward the port used for hosting using **UPnP** when hosting WormNET and Direct IP games. (introduced in v3.6.29.0)

- W:A now auto-detects the user's IP address using a reply from the WormNET server. This should make manually configuring the external IP address unnecessary in most cases. The IP address can still be overridden using the "Force IP address" checkbox. (introduced in v3.6.28.0)
- The default Server List file will now automatically log you onto WormNET using the nickname entered in the main Network Menu (this works because logins are currently not enabled). (introduced in v3.6.23.0, improved in v3.6.30.0)
- WormNET flags have been added for the following countries: [Chile](#), [Serbia](#), [Slovenia](#), [Lebanon](#), [Moldova](#), [Ukraine](#), [Latvia](#), [Slovakia](#), [Costa Rica](#), [Estonia](#), [China](#), [Colombia](#), [Ecuador](#), [Uruguay](#), [Venezuela](#), [Algeria](#), [Belarus](#), [Bulgaria](#), [Egypt](#), [El Salvador](#), [Guatemala](#), [Jamaica](#), [Kazakhstan](#), [South Korea](#), [Lithuania](#), [Macedonia](#), [Marshall Islands](#), [Peru](#), [Saudi Arabia](#), [Taiwan](#) and [United Arab Emirates](#). (introduced in v3.6.23.0, v3.6.24.2, v3.6.28.0, v3.6.29.0, v3.6.30.0)
- An "Ignore" feature was added in WormNET. To ignore/unignore someone, hold **Ctrl** and double-click on their nickname in the nickname list, or type **/ignore** or **/unignore** followed by their nickname. Ignored nicknames are shown in red in the nickname list. (introduced in v3.5 Beta 2)
- Web and E-mail URLs are now automatically parsed and converted to hyperlinks in message histories (WormNET, LAN and host/join screen). (introduced in v3.6.30.0)
- A host can now limit the number of players joining, by resizing the player list box. To do so, click and drag the thick bottom edge of this box. (introduced in v3.6.19.7, improved in v3.6.25.1a)
- In front end network screens, entering the command **"/u"** or **"/url"** will now copy a **wa://address-of-host** URL into the clipboard, which can be used by other players to join the game directly (even for a WormNET game). (introduced in v3.6.29.0, improved in v3.6.30.0)
- An **Advanced Options** screen has been added, which allows configuring settings previously only configurable using registry scripts and direct registry editing. (introduced in v3.6.30.0)

## Maps and the Map editor

- While clicking rapidly through map thumbnails, you may accidentally skip past a good looking one. Now you can backtrack with a Shift+Click. (introduced in v3.6.19.7)
- Imported colour maps are saved in PNG format (with metadata) and usable in online games. (introduced in v3.6.19.7)
- Colour PNG maps may be loaded directly in the map editor, with the following limitations:
  - Maps may have up to **64** colours (65 including black) if graphical glitches are to be avoided; (introduced in v3.6.19.7)
  - Maps may have up to **96** colours (97 including black), but then soil textures (the background that appears when land is blown up) and the background graphics (clouds, etc.) will be disabled, and the destroyed-soil border will be solid gray; (introduced in v3.6.19.7, improved in v3.6.25.1a)
  - Maps may have up to **112** colours (113 including black), but then (additionally to the limitations above) the background gradient will be re-rendered using the map colours and whatever free space there will be left in the colour palette. (introduced in v3.6.25.1a, improved in v3.6.28.0)
  - Maps can be organised into folders underneath User\SavedLevels, which can then be navigated in the map editor combo box. (introduced in v3.6.19.7)
  - PNG maps may have dimensions other than 1920×696. A cavern map may now be up to 32504 pixels wide or 32600 pixels tall; an island is limited to being 28408 wide or 30552 tall. The minimum map size is 640×32. A map's width and height must be divisible by 8. (introduced in v3.6.28.0)
- To draw lines: click a point with the brush, hold down Shift and click an end point. This can be used to draw many connecting lines if Shift is held down the whole time. (introduced in v3.5 Beta 1)
- To cycle through available brush sizes, rotate the mouse wheel; to draw vertical/horizontal lines, hold Ctrl; to move the mouse cursor at ¼ speed, hold Alt. (introduced in v3.5 Beta 1)
- In the Map Editor, you may now fine-tune the number of Placement Holes instead of being constrained to either 0 or 18. This is done by left- or right-clicking the circled-girder icon, which displays the current number of Holes; holding **Shift** allows you to fine tune the value, otherwise it skips from 0 to 18 to 32 to 48 and then to the maximum of 300. Holding **Ctrl** while clicking Reseed will force it to try for as many Holes as it can get. (introduced in v3.6.28.0)
- A slider has been added to the map editor, which allows controlling the range of complexity in randomly generated maps. (introduced in v3.6.31.0)

## Game

- Resolution modes up to 1920×1440 are now supported (dependent on video driver / hardware capability). (introduced in v3.5 Beta 1)
- It is now possible to play with up to **48** Worms if all players are using v3.6.28.0 or later. (introduced in v3.6.28.0)
- It is now possible to play games with just one team, or with teams of just one allied colour. In such cases, the game will only end in a draw (when all teams surrender or are eliminated). This works for both "multiplayer" and "online" games. When an online game is started without anyone else joining, it will act like an offline game. (introduced in v3.6.28.0)
- Holding the **Shift** key when walking causes controlled worms to not change the direction in which they are facing. (introduced in v3.6.20.1)
- Utilities can be selected with the key usually located under the Escape key (the key used for typing the ` and ~ characters on U.S. keyboard layouts). (introduced in v3.5 Beta 1, improved in v3.6.28.0)
- A thought bubble can be displayed above the active worm by pressing **T**.
- It is now possible to enable certain "testing" game options, which are meant to allow playtesting certain game options which may be buggy or significantly change the game's behaviour. See the change log for v3.6.28.0 for more information. (introduced in v3.6.28.0)
- An AFK (Away From Keyboard) mode was added, activated by entering **/afk** or **/away** in the chat. The game will automatically skip your turns while this mode is activated. If enabled during worm placement, the worm will be automatically teleported to a random spot. (introduced in v3.6.19.7, improved in 3.6.23.0)
- During a game, players may now use **Ctrl+PageDown** to initiate "chat pinning", in which the chat panel is displayed even when it is not "in focus". This allows a player to play while reading what the other players are saying. (introduced in v3.6.28.0)
- The network chat panel can now be resized using **Ctrl+Up** and **Ctrl+Down**. (introduced in v3.6.28.0)
- Pressing **Ctrl+Home** will enable "Home Lock", making the camera remain centred on the current worm. Pressing **Home** disables it. (introduced in v3.6.30.0)
- Players may now view the weapon panel for their team at any time, including during other players' turns. (introduced in v3.6.28.0)
- When there are several local teams with different team colours, a menu of team colours is displayed at the bottom of the weapon panel in these cases, allowing the inventory of any local team to be viewed by clicking the team's colour swatch. Similarly, it is possible to view the weapon panel of all ally team colours. (introduced in v3.6.30.0)
- Replays (both instant-replays in offline games, and automatic game recordings): (introduced in v3.6.19.7, improved in v3.6.19.17, v3.6.24.1, v3.6.23.0)
  - To pause playback, press **S**.
  - To step one frame while paused, press **S**.
  - The playback speed can be controlled with the top number keys 1 – 9. The progression is geometric in pairs: the keys correspond to 1×, 1.5×, 2×, 3×, 4×, 6×, 8×, 12×, 16×.
  - Holding 0 allows setting higher coefficients: pressing 1 – 9 while holding 0 corresponds to 24×, 32×, 48×, 64×, 96×, 128×, 192×, 256×, 384×. The speeds are, however, limited to the processing capacity of your machine.
  - Holding Shift while pressing a speed key or key combination will slow down playback, otherwise it will be speeded up.
  - To set a "bookmark" at the current position during playback of a game recording, press **M**. When using "Playback at", the game sets the bookmark at the specified position and fast-forwards the replay until the position is reached.
  - To rewind an automatic game recording to the current bookmarked position, or to the beginning of the replay file if no bookmark has been set, press **R**.
  - To clear the bookmarked position and restart playback from the beginning, press **Shift+R**.
- Holding down the left mouse button, or enabling **Scroll Lock** will prevent the game from automatically moving the camera. (introduced in v3.6.21.1, improved in v3.6.26.4)
  - Holding **Shift** while activating **Scroll Lock** will cause it not to be deactivated at the beginning of your next turn. (introduced in v3.6.29.0)
  - Holding **Control** while activating **Scroll Lock** will make mouse movement not move the game camera, unless the left mouse button is held down. (introduced in v3.6.29.0)
- Holding **Shift** now causes the mouse sensitivity to be multiplied by **4**. Holding the middle mouse button does the same. With both combined, the multiplier becomes **16**. (introduced in v3.6.28.0)

- The Mortar and Homing Missile now have shiny new launchers that are coloured differently, to make them easily distinguishable from the Bazooka and Homing Pigeon. The Bazooka also has a makeover. (introduced in v3.6.22.1)
- In-game sound effects are now played in **stereo**. (introduced in v3.6.29.0)
- The hotkey **Alt+Delete** toggles transparency for labels. (introduced in v3.6.26.4)
- Pressing **Space** during the playback of a recorded game will now skip to the beginning of the next turn. (introduced in v3.6.30.0)

## Game settings (schemes)

- The turn time can now be set to an infinite value. The game will then display a forward turn time counter, starting at zero. (introduced in v3.6.19.17, improved in v3.6.25.1a)
- The number of in-game hazardous objects (Mines and Oil Drums) is now customisable. The setting can be adjusted in the Scheme Options editor by Shift+clicking the Mine/Oil Drum button. (introduced in v3.6.28.0)
- The Round Time is normally measured in minutes, however it can also be adjusted up to 128 seconds in steps of 1 second. The way this is done is a little strange — you need to go below 0 minutes, and then left- and right-clicking will have a "backwards" effect on the number of seconds. (introduced in v3.6.28.0)
- It is now possible to play a match which lasts exactly one round even in the event of a draw. (introduced in v3.6.29.0)
- "Random worm order" has been added as a third "Worm Select" option. Enabling this mode will cause a team's worms to be selected randomly every time the team gets a turn, instead of cycling through in a fixed order. (introduced in v3.6.29.0)
- It is now possible to specify the amount of Jet Pack fuel, however currently this can only be done using external scheme editors. (introduced in v3.6.29.0)

## Keyboard

The following keyboard controls are available (in addition to the controls documented in the game manual):

- Global:
  - **Shift+Escape** - minimize the game. (introduced in v3.6.28.0)
  - **Pause** - capture a screenshot. Screenshots are saved in PNG format, are named **screenNNNN.png** and are stored in **User\Capture** under your main W:A folder. (introduced in v3.6.19.17, improved in v3.6.24.1, v3.6.28.0)
- Front end:
  - **Escape** - go back to the previous screen, or exit the game when at the main menu. (improved in v3.6.30.0)
- Front end, chat edit controls:
  - **Enter** - send line.
  - **Up/Down** - select previous/next message from history. (introduced in v3.5 Beta 1)
  - **PageUp/PageDown** - select previous/next recipient from history. (introduced in v3.5 Beta 1)
- Game:
  - **`** (key used for typing ` and ~ on U.S. keyboard layouts) - select / cycle utilities. (introduced in v3.5 Beta 1, improved in v3.6.28.0)
  - **Shift + Left/Right** - walk without changing facing direction. (introduced in v3.6.20.1)
  - **T** - display thought bubble. (introduced in v3.5 Beta 1)
  - **Shift** (hold) - increase mouse sensitivity. (introduced in v3.6.28.0)
  - **Alt+F4** - immediately return to front end / close replay.
  - **Shift+Pause** - re-set the palette (when using an 8-bit graphics mode). (introduced in v3.6.30.0)
  - **Ctrl+Home** - enable "Home Lock" (continuously centre the camera on the current worm). Pressing **Home** disables it. (introduced in v3.6.30.0)
  - **Alt+Delete** - toggle transparency for labels. (introduced in v3.6.26.4)
  - **Scroll Lock** - lock camera. (introduced in v3.6.21.1, improved in v3.6.26.4)
  - **Shift + Scroll Lock** - lock camera, and do not unlock it at the beginning of the next turn. (introduced in v3.6.29.0)
  - **Ctrl + Scroll Lock** - lock camera, and ignore mouse movement (unless the left mouse button is held down). (introduced in v3.6.29.0)
  - **Ctrl + Up/Down** - resize chat panel. (introduced in v3.6.28.0)
  - **Ctrl + PageDown/PageUp** - pin/unpin chat panel. (introduced in v3.6.28.0)

- Game chat:
  - **F1–F6** - send private message (add *"/msg player"* to the chat edit).
  - **Ctrl + F1–F6** - ignore/unignore player (same as *"/ignore player"* or *"/unignore player"*).
  - **F9–F11** - send team message (add *"/colour"* to the chat edit).
- Replay playback:
  - **S** - pause playback / advance one frame. (introduced in v3.6.19.17)
  - **1–9** - set playback speed (to 1×, 1.5×, 2×, 3×, 4×, 6×, 8×, 12×, 16× respectively). (introduced in v3.6.19.7)
  - **0 + 1–9** - set faster playback speed (24×, 32×, 48×, 64×, 96×, 128×, 192×, 256×, 384× respectively). (introduced in v3.6.19.7)
  - **Shift + 1–7** - set slow-motion playback speed (to 1×, 2/3×, 1/2×, 1/3×, 1/4×, 1/6×, 1/8× respectively). (introduced in v3.6.19.7)
- Replay playback (recorded games only):
  - **M** - set bookmark to current position. (introduced in v3.6.28.0)
  - **R** - restart playback from beginning, or from bookmark if one is set. (introduced in v3.6.23.0)
  - **Shift+R** - clear bookmark and restart playback from the beginning. (introduced in v3.6.24.1)
  - **Space** - skip until the beginning of the next turn. (introduced in v3.6.30.0)

## Integration and Command-Line Parameters

- W:A now automatically creates self-contained recordings of all played games, and saves them to **User\Games** under your main W:A folder with a **.WAgame** extension. (introduced in v3.6.19.7)
  - Double-click one of them to play back the associated game.
  - Right-click a replay to display a menu of available actions:
    - **Playback** - plays the replay as usual;
    - **Playback at...** - starts playing from a certain point in the replay; (introduced in v3.6.24.1)
    - **Extract Map** - extracts the map used in the game and saves it to the **User\SavedLevels** folder (with the same file name as the replay); (introduced in v3.6.19.15)
    - **Extract Scheme** - extracts the scheme used in the game and saves it to the **User\Schemes** folder (with the same file name as the replay); (introduced in v3.6.25.1a)
    - **Extract Video...** - renders a series of frames from the replay as images; (introduced in v3.6.24.1)
    - **Export Log** - creates a text summary of the replay, containing certain detailed information and statistics; (introduced in v3.6.21.2)
    - **Sanitize** - creates a copy of a replay with all private chat messages removed; (introduced in v3.6.30.0)
    - **Repair** - repairs certain errors in replay files. (introduced in v3.6.26.5)
- People hosting Direct IP games may now offer links in the format **wa://address-of-host**, and launching this link will cause W:A to automatically launch and join the hosted game. (introduced in v3.6.28.0)
- The command-line parameters accepted by **WA.exe** are:
  - Replay parameters (also accessible by right-clicking **.WAgame** files):
    - **/play Path\To\Replay.WAgame** - plays a replay. (introduced in v3.6.19.7)
    - **/playat Path\To\Replay.WAgame [time]** - plays a replay starting from a specific moment. If time isn't specified on the command-line, a dialog is displayed allowing entering the time. (introduced in v3.6.24.1)
    - **/getmap Path\To\Replay.WAgame** - extract the map from the specified replay to your **User\SavedLevels** folder. (introduced in v3.6.19.15)
    - **/getscheme Path\To\Replay.WAgame** - extract the scheme from the specified replay to your **User\Schemes** folder. (introduced in v3.6.25.1a)
    - **/getvideo Path\To\Replay.WAgame [FPS-divider [start-time [end-time [X-resolution [Y-resolution [prefix]]]]]]** - export frames from the specified replay to your **User\Capture** folder. If no arguments are specified on the command-line, a dialog is displayed allowing entering said options. If less than 6 arguments are specified, the defaults are to export the entire replay (or until its end), at a resolution of 640×480. (introduced in v3.6.24.1, improved in v3.6.30.0)
    - **/getlog Path\To\Replay.WAgame** - export a text log of the replay. (introduced in v3.6.21.2)
    - **/sanitize Path\To\Replay.WAgame** - remove private messages from a replay. (introduced in v3.6.24.1)
    - **/repair Path\To\Replay.WAgame** - repairs certain errors in replays (currently regarding intrinsic maps). (introduced in v3.6.26.5)
    - **Path\To\Replay.WAgame** - plays the replay (the file must have a **.WAgame** extension). (introduced in v3.6.28.0)
  - Network-related parameters:

- **/host** - host a Direct IP game with default options. (introduced in v3.6.28.0)
- **wa:host[parameters]** - host a Direct IP game with optional parameters (see **Footnote 3**). (introduced in v3.6.28.0)
- **wa://[hostname][parameters]** - join a Direct IP game with optional parameters. If no host specified, host one instead. (introduced in v3.6.28.0)
- Other parameters:
  - **/nointro** - disables the intro sequence. Can also be permanently disabled in the Advanced Options screen.
  - **/q** or **/quiet** - suppress some error message dialogs. Useful for batch replay operations. (introduced in v3.6.29.0)
  - **/register** - re-register replay and URL associations (used by the W:A update installer). (introduced in v3.6.30.0)
  - **/wk** and **/nowk** - enables and disables loading WormKit modules, respectively. Overrides the registry setting. (introduced in v3.7.0.0)
  - **/wkargs** - ignore following command-line parameters. Can be used to pass parameters to WormKit modules. (introduced in v3.7.0.0)
  - **/langdir Path** - override language file search path. (introduced in v3.7.0.0)

## 3.0 Version History

### v3.5 Beta 1 Update (2002.08.09)

#### General

- Worms Armageddon now runs under the majority of Windows 2000 and XP Platforms.
- It is now possible to successfully minimise W:A in all areas, within the front end and in-game.

#### Front End

- Double mouse clicks are now treated as single clicks where convenient, for example when paging through a list box of schemes or maps.
- Game schemes can now include super weapons, as long as the host has "Full Wormage".

#### Game

- Resolution modes up to 1920×1440 are now supported (dependent on video driver / hardware capability).
- It is now possible to scroll the viewport all the way to the left and right of a cavern map. Previously, 2 pixels were clipped from each side. This makes bungeeing off the edge of a 3-layer cavern map much easier, because it is now possible to see the bungee cord and worm. **[What I didn't realize when making this change was, it modifies the game logic; it allows a worm to move 2 pixels farther from the edge without losing its Rope, Bungee, Parachute or Jet Pack.]**
- Fixed – Clicking the mouse wheel or browser button during a game would lock out all keyboard input from then on.
- Fixed – Crates sometimes wouldn't fall in a crowded terrain (even at 100% probability). This happened because the game previously used an algorithm that tried up to 75 random positions blindly and then gave up looking; the new algorithm scans every pixel of the map. **[There is just a tiny flaw in the new algorithm; a crate's collision mask has single-pixel bevels in its corners, but the new algorithm assumes the mask to be rectangular. Known at the time of design, this was deemed acceptable.]**
- Fixed – Graves hit from below could absorb Longbow shots. **[This was not a complete fix; see v3.6.19.12 for the complete fix.]**
- Fixed – Thinning of some terrain types, occasionally creating openings in solid ground **[Note: This created blockages in some Battle Race maps designed before the release of this Beta.]**
- Fixed – Parachuting Worm could be hit by a falling worm causing loss of parachute and control. Now your Worm still loses the parachute, but control is retained. **[Note: This fix inadvertently stopped enemy worms from knocking the attacking worm. This was later fixed in v3.6.19.14.]**



- Fixed – Bungee could fail to activate when walking off a cliff with a crate located directly below, possibly incurring fall damage and loss of turn.
- Worms can now change direction and jump in the same instant. When time is critical, and your Worm is limited to ground movement only, it is beneficial to initiate each jump as soon as your Worm has landed and is ready to move. However, upon landing and turning to jump in the opposite direction, it was previously possible to have your direction-change ignored, in the worst-case scenario causing you to jump to death instead of safety.
- Cow-doubling glitch is currently disabled. In the future this may be turned into an option.
- Crates now automatically fall down at full speed in offline games, instead of parachuting until the player presses Space. Previously, this was the case online but not offline.
- The kind of Sheep that jumps out of an exploding crate is now based on the power setting of the Sheep in the current scheme, whereas previously it was hard-coded to a power setting resembling (but not matching) a Sheep set to 3 stars of power.
- Select Worm is now disabled for teams that have been reduced to 1 Worm.

Select Utilities Tilde ( ~ )  
 Display thought-bubble above Worm T

## Map Editor

### Fixes

- The Import function is much faster now (ironically, the pie-shaped progress indicator was hogging lots of CPU time)
- The Import wraparound bug will no longer happen in the majority of cases. The only case in which it may still happen is when importing a 24-bit colour BMP or TGA.
- The displayed water level now closely matches what it will look like in-game.
- Terrain settings (object / bridge count, border, water level, terrain type) are now retained.
- Custom terrains no longer get their object count reset to a very low number.
- Removed duplicate reference of "Tribal" terrain.
- The mouse cursor is now hidden while drawing, so that only the brush cursor will be visible.
- Brush sizes now match what is actually drawn.

### Features

- Settings changes in preview mode are now effected immediately. You can instantly see the effects of adding/subtracting objects or bridges, or changing the terrain type.

### New Drawing Functions

- Addition of a tiny brush – 1 pixel in the zoomed-out view, 4 pixels thick on the map
- Drawing Lines – Click a point with the brush, hold down Shift and click an end point. This can be used to draw many connecting lines if Shift is held down the whole time.

Toggle through available brush sizes Mouse wheel  
 Constrain / limit drawing movement to x or y axis Ctrl (hold down)  
 Move brush at 1/4 speed, improving drawing precision Alt (hold down)

## Network Lobby Chatting

- Much improved quick-messaging of people in the lobby, host/join and in-game chats.
- Current message typed is retained, while the recipient of the message can be changed. In host/join, the right mouse button now achieves this.
- An **/ignore** command function is now available for the WormNET lobby which will highlight a name in red and is useful to combat spammers. Typing **/ignore** alone will clear all ignores.
- It is now possible to scroll through message chat lists via a mouse wheel; the list must be initially clicked upon and the scrolling is set at one line per wheel bump.
- People to whom you've spoken privately and the messages typed can now be recalled:  
 Scroll through messages Up and Down

Scroll through people

PageUp and PageDown

### Chatting Clipboard Operations

Clipboard operations (text selection, cut, copy, paste) are now possible in the front end, including the line editor and scrolling message lists:

Select text	Hold Shift; press Arrows or click and drag mouse
Operate on whole words	Hold Ctrl; press Arrows, double click mouse or click and drag mouse.
Select entire line	Ctrl+A
Copy text to clipboard	Ctrl+C or Ctrl+Insert
Cut text to clipboard	Ctrl+X or Shift+Delete
Paste text from clipboard	Ctrl+V or Shift+Insert

### Fixes

- A space is no longer inserted in front of every outgoing host/join chat message.

### Network In-Game Chatting

- Message line editing is now possible, using the cursor keys (Left, Right, Home, End). During other players' turns this is enabled by default. During your own turn, Scroll Lock must be enabled, otherwise the chat will be cancelled and your Worm will be moved instead. [Note: This is no longer the case in the latest version. See the entry for v3.6.26.4.]
- There is now an Allied Chat function, to share battle strategies with your teammates. This can be achieved either by the **/colour** command function or by pressing the appropriate F-key (which will always be F9 unless there are two people playing on the same machine but in different allied groups).

### Cheating Loophole Prevention

- It is no longer possible to evade being kicked from a game at the host/join stage.

The following in-game loopholes could previously be exploited online by a utility that directly injected messages into W:A's message stream:

- Placing a girder anywhere, even intersecting with worms and other objects (and terrain, using a different method) [Note: In fixing this, another worse loophole was inadvertently created, allowing a girder to be placed anywhere from Rope, Bungee, Parachute or Jet Pack. This was later rectified with the release of v3.6.19.7.]
- Teleporting on top of the roof in a cavern
- Pausing the timer
- Triggering Sudden Death
- Forcing the game to end or draw
- Making all Worms invincible
- Turning on Blood and/or Sheep Heaven
- Using Parachute or Bungee during a retreat
- Selection of weapons during Worm placement (when enabled) at the beginning of a game. If a Girder was chosen, the Worm would be located way up in the sky and untouchable during turns. If anything else was chosen besides Teleport, the game would hang.
- Using a Fuse/Herd of 0 or above 5 (a Herd of 0 allowed a player to unleash an unlimited number of Mad Cows, even if only one was possessed)
- Tweaked angles could be used with Strike weapons; this could hang the game with a straight-down angle, as the plane never flew away.

## v3.5 Beta 2 Update (2002.08.15)

Note: This update is also known as v3.0.5.0.

### New Features

- The symbol **B** is now shown in front of games hosted using the Beta. Technically it is not  $\beta$ , but it has the closest resemblance in the character set.
- "Ignore" feature added in WormNET. Ignores persist until the W:A application is closed.

Ctrl + Double Click mouse on a name	Toggle ignoring of the corresponding person; ignored people are shown in Red.
Type <b>/ignore nickname</b>	Same as above.
Type <b>/ignore</b> by itself	Clear all ignores.

## Bug Fixes

- Font-chopping bug fixed (in v3.5 Beta 1, the bottom pixel row was being erased from all characters.)
- Allied chat colour mismatch fixed
- Utility selection key fixed for UK-layout keyboards. It is now the grave accent key (to the left of the **1** key) in both layouts.
- CPU teleport bug fixed (in v3.5 Beta 1, CPU worms would fail when attempting to teleport.)

## v3.6.19.7 Beta Update (2004.02.09)

### Features

- A host can now limit the number of players joining, simply by resizing the upper-left player list box. To do so, click and drag the bottom edge of this box. (In v3.5 Beta 3pre1 "Avacado Build" [sic], this wasn't working 100% — now it is.)
- 3.5 Beta 3+ users can now connect with each other online without going through the time-consuming CD-check; this saves time for people joining a game and reduces jerkiness/lag for the host.
- You may now play TCP/IP online games directly, bypassing WormNET.
  - One person hosts, by leaving the IP address box blank and clicking the **Direct TCP/IP** button.
  - The other people join by entering the host's IP address and hitting **Enter** or clicking **Direct TCP/IP**.
- Localisation is improved. Your Nation is set directly from geographic location information if available (**Control Panel: Regional and Language Options: Location**). Your Language is set in a more direct manner. Sublanguages don't have to be explicitly recognised for the main language to be used, and messages that haven't yet been translated are shown in English.
- Backwards compatibility with previous patches starting at 3.5 Beta 1
  - A new feature or bug fix which changes the game logic will not be activated unless all people present in a game are using a patch at least as recent as the one in which that feature/bug fix was implemented.
  - When all players light up to signal readiness, a message will be printed stating which game logic version will be in effect. If emulation of an older version is necessary, the message states which players' presence is causing emulation to be necessary. The host then has the option of either booting the players who do not have the latest logic patch, or starting the game with emulation.
  - If a player present in an online game at the host/join stage is running a version too old to support a certain game setting (for example, a colour map) the host will see the player's name crosshatched in red in the player list. If this is the case, then when all players light up, the printed message will explain why the game cannot be started with the current settings and players.
- Networked Game Message History
  - Now carries through to extra rounds and the finish of a game.
  - Can now be read after the host or all other players have left a finished game.
- Features affecting game logic
  - Teleporting – Before, if you tried to teleport somewhere that was blocked, the game would search up and down for available spots. Now, it searches nearby in all directions and picks the closest spot, with an orthogonal bias.
- Volume can be changed in-game and in the Options menu of the front end. Using this allows you to balance the game volume with MP3s, voice chat software, etc.
- Added an AFK (Away From Keyboard) mode that automatically skips your turns while you're gone. This mode is activated by entering **/afk** or **/away** in the chat. It is cancelled when you press anything chat-related, such as typing or pressing PageUp or PageDown. You can minimise while staying in AFK mode; when you restore, your AFK status will be cancelled.
- The chat is now opened by default in online games, and a message describing how to open it with PageDown is displayed until the user presses a chat-related key.

- Changes relating to maps/levels:
  - Imported colour maps are saved in PNG format (with metadata) and usable in online games.
  - Maps may have up to 64 colours (65 including black) if graphical glitches are to be avoided.
  - Maps can have up to 96 colours (97 including black), but then soil textures (the background that appears when land is blown up) will get corrupted. This is not a problem if Indestructible Terrain is enabled. [Also however, the background graphics get corrupted; the solution is to disable backgrounds while playing.]
  - Map previews and thumbnails are now anti-aliased for better detail and aesthetics, and to be informative and accurate in the case of maps with patterns or thin lines. All types of maps now have thumbnails.
  - Large map files now transfer more smoothly, and have no file size limit (previously they were limited to 64985 bytes). Progress bars are shown as maps are sent or received, and players can chat in the meantime.
  - While clicking rapidly through map thumbnails, you may accidentally skip past a good looking one. Now you can backtrack with a Shift+Click.
  - The logic for classifying a custom map as island or cavern has changed. Now, it is only a cavern if its eight topmost rows of pixels are entirely filled. (Before, it was only an island if its entire top, left and right edges were empty.) The reason for this change is that it matches the game's logic; the cavern border added by the game itself always overlaps the top eight rows. To facilitate this in the editor, right-clicking on the Borders button will now add a top border, turning the map into a cavern.
  - Maps can be organised into folders underneath **User\SavedLevels**, which can then be navigated in the map editor combo box.
  - Black and White maps, or colour previews of them, can be converted into full colour maps by right-clicking the Preview/Edit-mode button. They can then be saved in PNG format.
- Games are automatically recorded and can be played back.
  - The files are stored in **User\Games** under your main W:A folder, with the extension **.WAgame**
  - Double-click one of them to play back the associated game.
  - You can launch playback instances while another instance of W:A is running minimised.
  - The recorded game files are self-contained, and can be moved, emailed, posted on the web, etc. They will play back for anyone with an up-to-date W:A installation.
  - During playback, the speed can be controlled with the top number keys 1-9,0. The progression is geometric in pairs: the keys correspond to multiples of 1×,2×,3×,4×,6×,8×,12×,16×,24×,32×. Holding Shift while pressing a speed key will slow down playback, otherwise it will be speeded up. (Note: Slowdown is limited to 1/8×, and your machine may not be able to play at the fastest speeds.)
- Front End
  - Buttons now behave more closely to standard buttons in other applications.
  - Scrollbar functionality is much improved. Before, dragging the scrollbar to the end of a long list wouldn't actually go to its end, which could cause frustration when slogging through long scheme lists, map lists and message histories.
  - List boxes and Combo boxes, such as the list of Schemes and Level Files, are now properly sorted and respond intuitively to keyboard control and the mouse wheel.
  - Chat Bars always get the default keyboard focus so that it is not necessary to click on them before typing.
  - Dialog screens such as Multi-Player, Network Hosting and Game Options behave more uniformly and logically. For example:
    - Numerical option buttons that are locked to certain values (e.g. Turn Time of 15,20,30,45,60, or 90 seconds) will now display a value rounded to the nearest instead of defaulting to one value (e.g. Turn Time used to show 90 for any unrecognised value, even low ones like 13 seconds). [Unfortunately, "infinite" turn time (a negative number) was rounded up to 15 seconds for display, which was misleading. This was rectified in v3.6.25.1.]
    - A right-click now causes *all* settings and options to go backwards by one tick, whereas before, in many of them you had to go all the way forward and wrap around just to go back to the beginning.
    - Teams can be edited while in an online game.

## Fixes

- For some people, in the Team Editor the OK button would remain greyed out inappropriately, making it impossible to edit a team. [Apparently, this may not have been fixed after all. The cause is still mysterious.]
- When Large Fonts (120 dpi fonts) were enabled in Windows, W:A's dialogs were enlarged beyond the size of the screen.
- High-ASCII chars (128 and above) could not be pasted from the clipboard.
- When hosting, an updated map was not sent to people in the game if the host Previewed right before exiting the Map Editor. This would result in a desync when the game started.
- Bug introduced in v3.5 Beta 1: There was an invisible colour in the host/join player/team lists. This blue text colour, invisible against W:A's blue background, has now been changed to red.
- At some point the "Delete" command on the Team17 game-hosting server was broken, making games stick on the list until they timed out if the host quit without starting the game; to work around this, the client now uses the "Close" command instead.
- It is no longer possible for other users to crash you by using an invalid nation flag in the WormNET user or game list, or in host/join. (v3.5 Beta 3pre1 "Avacado Build" [sic] was released to rectify this; extra protection has been added since then.)
- Flag and rank icons were loaded all at once outside a channel, but one by one, *slowly*, inside a channel. This has been fixed; they now refresh along with the game listing.
- At the Next Round stage, if only players of a single ally remained after others quit or disconnected, all buttons would be disabled and the "WA.exe" process would have to be killed externally.
- If you join a network game, light up, then minimise before the game has started, your ready status will now be automatically cancelled. This is now done because otherwise, the host could start the game while you were still minimised, causing a crash on your end.
- The Team Editor and Missions screen would crash on teams with "out of bounds" animated sprite graves. Of course the ability to use these graves was a bug in the first place. ;-)
- The Map Import wraparound bug no longer happens under any circumstances.
- Fixes affecting game logic
  - Bugs introduced in v3.5 Beta 1
    - A Girder could be placed anywhere while the player's worm was on the Rope, Bungee, Parachute or Jet Pack. If the same thing was attempted with a Teleport, the attempt would fail and the worm would be teleported onto itself without moving.
    - Letting the timer run out during manual worm placement would do either one of two things:
      - If the central coordinate of the map had space for a worm, it would be forced to place there instead of a random spot.
      - Otherwise the game would be thrown into an endless loop, beeping constantly in random spots instead of placing the worm.
    - Once Worm Selection was disabled by the onset of Sudden Death, it did not come back in following rounds.
  - A team's stats could be lost in a multi-round online game, causing them to lose their weapons in Stockpiling or Anti-Stockpiling mode. This happened when multiple teams were entered, followed by one or more being removed from the middle of the list. This bug is now fixed. Furthermore, when it is emulated for compatibility, you will get a more informative message saying which teams' stats were lost. (In v3.0, not only was the message uninformative, but it popped up when the screen was faded to black, so it couldn't even be read and had to be dismissed blindly.)
  - In Stockpiling or Anti-Stockpiling mode, an allied group of teams would receive a stockpile for each member team. For example, if there were 2 Grenade in the scheme and Stockpiling enabled, an allied group of 3 teams would receive 6 Grenades every round. Now, the same thing happens, but regardless of whether Stockpiling is enabled or not. [This change was opposite to what should have been done, and was not properly disabled when emulating older versions. See v3.6.19.11 fixes.]
  - Before, powerful weapons with Damage×2 could have their blast radius artificially limited, resulting in a bizarre combination of widespread damage with a relatively small hole. Now the effective blast radius limit is doubled. (The explosion sprite is still limited in size, so it may look a bit weird but will work properly.)
  - The glitch in which graves could absorb arrows was not fully fixed in v3.5 Beta 1; an arrow hitting a grave at the same time as it would have hit land was still absorbed. This is now wholly fixed. [That

"wholly" was rather holey; see v3.6.19.12 fixes.]

- At a certain water level, Crates and Oil Drums would float, throwing the game into an endless loop while it waited for them to sink.
- A bungeeing worm used to look very odd when swinging more than 45 degrees away from straight down. Now it progresses smoothly through 360 degrees of rotation.
- There was a mismatch between the Fall Damage threshold speed, and the threshold speed at which the Parachute was activated. There was a small space between where your Worm could accrue fall damage without the parachute activating. This only happened when the worm was sliding, for example from the Rope. [This fix was not enough; see v3.6.21.1 for the complete fix.]
- In a game with Stockpiling and the Aqua Sheep enabled, stockpiled Aqua Sheep would be lost in the next round.
- The [T] key (thought bubble) now works while you are aiming a weapon with the mouse.
- There are some filename inconsistencies between the various Soundbanks on the W:A CD-ROM. Some have "oof1.wav" instead of "ooff1.wav", similarly for "uhoh.wav" instead of "uh-oh.wav". The game now handles these variations. Affected Soundbanks include Brummie, Cad, Drill Sergeant, Formula One, Geezer, Rasta, Redneck, Rushki, Russian, Thespian, and US Sports.
- Fixed a variety of bugs in the front end, many of which could cause crashes upon minimise + restore in various places.
- The Intro now fades like it used to before the betas. As before, it can be skipped by adding the /nointro parameter to your W:A shortcut, e.g. "**C:\Team17\Worms Armageddon\WA.exe**" /nointro

## v3.6.19.11 Beta Update (2004.02.10)

### Fixes

- During the playback of certain game recordings, the telephone icon would be displayed, but the chat box brought down by PageDown would show nothing.
- People running versions of Windows other than English, Dutch, French, German, Italian, Portuguese, Spanish or Swedish would have blank buttons and texts in the front end, and a default of Portuguese in game. The default is now English.
- The Game Version was being initialised to 3.5 Beta 2 when playing Quick CPU games, thus emulating the girder glitch, for example.
- Quick CPU games were recorded with the incorrect terrain, making them nonsensical when played back.
- In offline games, Forced Sudden Death was not recorded. Also, games artificially ended would not reflect this in the recording — they would simply go on forever with no movement.
- Could not quit from the Next Round screen as a Joined player in an online game; the Exit button would prompt Yes/No, but would have no effect.
- Team names with illegal filename characters in them could cause crashes when starting offline games, and in any case would cause the recording not to be saved. Now they are filtered to underscores.
- With Large Fonts (fonts set to something other than 96 dpi), the Map Thumbnail was erroneously shifted to the left in the Network Host/Join dialogs.
- Fixes affecting game logic
  - Bugs introduced in v3.6.19.7
    - In teamed games, i.e. games where multiple teams are allied against each other (a.k.a. clan games), the weapons added to each allied group's inventory would be multiplied by the number of teams in that group. So for example, in a 2vs2 Team17 game, everyone would get 2 ropes. In v3.6.19.7, this could cause a desync if an earlier Beta version was being emulated. [This fix made no change to what happens with team special weapons — an allied group still got the special weapon of each member team. See v3.6.19.14 fixes.]
    - There was a small area between vertical speed thresholds where a fallen worm would twang without accruing fall damage. [This "fix" introduced a bug; see v3.6.19.12 fixes.]

## v3.6.19.12 Beta Update (2004.02.11)

## Fixes

- Fixes affecting game logic
  - The glitch in which graves could absorb arrows was *still* not fully fixed; an arrow shot from "inside" a grave would still be absorbed. This is now fully wholly completely and utterly fixed. [This time for real.]
  - Bug introduced in v3.6.19.11: In certain circumstances, even the lightest fall would incur 1 point of damage. Most notably, every time a worm was rope-knocked it would lose 1 point of health. [This fix was overdone; see v3.6.21.1 for the complete fix.]

## Features

- The map editor is now more forgiving when loading PNG colour maps. The palette may have extra unused entries (padding) and the colour black does not have to be at palette index zero. Also, a specific message is shown if the map has the incorrect dimensions.
- Removed the near-useless Generate button in the map editor and replaced it with a Reseed button, which rerandomises the way Objects, Bridges and Holes are placed in a map. This button is only active in Preview mode because that is where you will see its effect. (Does not apply to colour maps.) Holding Shift while clicking the button will backtrack.

## v3.6.19.14 Beta Update (2004.02.12)

### Fixes

- Version 3.6.19.11 fixed the recording of Quick CPU games, but Deathmatch games still were recorded with the wrong map. This is now fixed; also, recordings made before this fix will now play back properly.
- Fixes affecting game logic
  - 3.5 Beta 1 fixed the glitch in which a falling worm, colliding with a parachuting worm, could end its turn. But this fix had the side effect that enemy worms, sliding as the result of an attack, could never horizontally knock the attacking worm (regardless of whether it was using the parachute). This had presented an element of challenge, and at times caused amusing bad or good luck. So now it is back; yet the collisions will still never directly end the attacking worm's turn, as they could before 3.5 Beta 1.
  - The timer did not pause when a herd of Mad Cows was released from the Rope, Bungee, Parachute or Jet Pack. Thus, it was possible for the turn to end before the entire herd was released, denying the player from having any retreat time.
  - Version 3.6.19.11 fixed the allied overstockpiling problem, however, special weapons were still added from all teams. This was intentional on my part (if there can only be one special weapon, and the teams in a group don't use the same one, which weapon should be dropped?), however it has since been made clear to me that this was not a good solution. So now, if there is a disagreement between teams in a group on which special weapon to stock, the choice is made depending on which team gets the first turn (which is random at the beginning of a game, then incremented after each round). The legacy behaviour was that the special weapon would be determined always by the last team in the team slot list, and this stayed constant throughout a set of rounds (and indeed, beyond that if the team list stayed the same).
  - The first team in an allied group to get a turn was not being properly set; usually the first in the team slot list in each group would always get the first turn.

### Features

- Ammo is now displayed for delayed weapons in the right-mouse-click weapons panel.
- If the host in a game has an older game version than at least one other player who has joined, the message will now be "*Game will emulate n.n.n ...*" rather than "*Game will take advantage of the latest n.n.n features and bug fixes*"
- Right-clicking the Water Level bar in the Map Editor now sets the appropriate level for "water drops", where worms do not drown whereas weapons sink. (The Indestructible Border must also be turned on for this to work.)
- Player disconnections are now properly recorded. During playback, players' names are greyed when

their disconnections are re-enacted. The reason for a disconnection is also shown, if detected or communicated across the network. [Due to a bug, a disconnection reason of "network drop", "timeout" or "desynchronisation" was only printed on the host's side; for clients (and playback of client-side replays), the reason was omitted, even though the information was present in the replay file. This bug was not fixed until v3.6.30.0.]

## v3.6.19.15 Beta Update (2004.02.20)

### Fixes

- If the host quit too early in the Next Round screen in a game you had joined, the Exit button remained disabled, requiring the "WA.exe" process to be killed externally.
- Allied whispers are now readable during playback. (This is under Bug Fixes because it was the original intention for crate spy, weapon selections and allied whispers all to be visible in a playback once the game was finished, for a "behind the scenes" effect. Allied whispers were recorded from the start, yet were each shown as a coloured **\*\*Whisper\*\*** in playback before this update.)
- Error messages showing up when a recorded game could not be played back did not show properly. Now they do.
- The background ambient sound loop no longer restarts each time you go back to the Main Menu.

### Features

- The French translations have been improved and corrected by JaBBa.
- There is now a Map Extraction feature which can be applied on game recordings. Right-click on a **.WAgame** file and choose **"Extract Map"**, and the map will be saved in your **User\SavedLevels** folder using the base name of the recording; you can then rename it to what you want.

### Changes

- Recording is now a bit more streamlined: nothing is recorded while there is no controlling team (i.e. between turns) [Note: Chat is still recorded between turns, but since there is currently no timing information, a chat that happened between turns will play back at the beginning of the next turn.]

## v3.6.19.17 Beta Update (2004.03.11)

### Fixes

- Even when instant replays were disabled in the scheme, one would still be shown following a death that ended the game.
- If there was an error loading a scheme file, the dialog was undismisable requiring the "WA.exe" process to be killed externally.
- W:A accepted the WWP CD, but this was premature in the development of WWP compatibility.
- For a client at the host/join stage, other players' ready indicators were improperly cleared during reception of a map.
- During playback, the dialog menu button (ESC) would beep if a "game over" was in progress (as in normal play)
- Checksums for remote players were not recorded. This is now used to detect who was the local player (whose copy of W:A created the recording); recordings made from now on don't require this detection (nor would it work).
- Fixes affecting game logic
  - When placing worms at the beginning of a game, placing directly on land caused an annoying delay of two seconds, whereas letting the worm drop onto land did not create much of a delay. Now, placing directly on land causes virtually no delay (the only delay will be due to network lag).
  - Weapons can now be selected while your worm is reshooting the Ninja Rope.
  - A glitch was introduced in v3.6.19.7: It was possible to teleport horizontally outside the indestructible border, which could result in an accidental drowning during placement.



## Features

- When the turn timer has a negative value (currently only possible by editing a scheme externally) a forward turn counter is displayed, starting at zero.
- During a replay, hundredths of a second will be shown in the turn timer.
- There is now a built-in screenshot key that works in game. The key is Pause, and it saves screenshots in PNG format using minimum compression for speed. They are named **screenNNNN.png** and are stored in the main Worms Armageddon folder.
- There is now a single-step key for replays. Press **S** to step through a replay frame by frame. Press a speed key (1-9,0) to resume normal playback. Note: ESC/PageDown/PageUp currently do not work while single stepping.
- In playback (behind-the-scenes mode) mine fuses are now shown. Dud status cannot be shown in advance because it is decided only upon the triggering of a mine.
- During playback, the camera tracking can now be overridden by holding down the Left Mouse Button. This is especially useful in fast mode, to prevent the camera from jumping around.
- Under Windows 2000/XP, the high resolution system timer is now used. This results in much smoother rendering, especially if your display's vertical refresh rate is a multiple of 50 Hz.
- The mouse and camera are now updated between frames, for much smoother scrolling and local-user-controlled cursor movement.

## v3.6.19.17a Beta Update (2004.03.12)

### Fixes

- The following change: *"The mouse and camera are now updated between frames, for much smoother scrolling and local-user-controlled cursor movement."* has been reverted. It was not ready for release, and created some unwanted side effects.

## v3.6.19.18 Beta Update (2004.03.19)

### Fixes

- The host and join round continue screens had the old problematic player list colour scheme; the latter also did not show the map reception progress bar.
- The new Single Step replay key could cause an infinite loop, requiring the "WA.exe" process to be killed externally.
- If you pressed Space to shoot the Ninja Rope while your Worm was preparing for a jump, and your Worm became airborne before you released Space, then a second pressing of Space would be ignored; an extra press would be required to detach the initial rope (or if the rope catch was denied quickly, the rope would fire again spuriously the moment your Worm became airborne).
- Pressing Shift during an instant replay affected speed in a buggy way. Now, the same speed-control keys used during a playback replay are supported during an instant replay.
- Fixes affecting game logic
  - The v3.6.19.17 fix: *"Weapons can now be selected while your worm is reshooting the Ninja Rope."* introduced a glitch: if you made your worm shoot a starter rope from mid-air, and attempted to select a weapon before the rope caught, the default would be selected instead. It was not intended that selection be possible during the starter rope shot.

### Features

- In an offline game or playback, the ESC dialog no longer closes automatically after minimising. This way, the game it will remain paused upon restoring until you press ESC again.
- Added the ability to load colour maps that were saved in .CUS format using Beta 1/2/3pre1.

## v3.6.19.19 Beta Update (2004.03.21)

## Fixes

- The following v3.6.19.18 fix was incomplete and is now fixed as intended: *"If you pressed Space to shoot the Ninja Rope while your Worm was preparing for a jump, and your Worm became airborne before you released Space, then a second pressing of Space would be ignored; an extra press would be required to detach the initial rope (or if the rope catch was denied quickly, the rope would fire again spuriously the moment your Worm became airborne)."*
- For some people, PNG maps were saved without a header. At first this merely caused the terrain type (soil background) to be reset each time, but starting after v3.6.19.15 the bug prevented PNG maps from being hostable at all; after loading them and exiting from the map editor a random map would be generated.
- Bug introduced in v3.6.19.17: Certain games with CPU players (e.g. the mission Water Surprise) would crash right after the piechart loading stage.

## v3.6.20.1 Beta Update (2004.07.13)

### Fixes

- W:A no longer uses 100% CPU unnecessarily.
- If you experienced a buggy/laggy timer or inoperational game starting with 3.6.19.17, execute the registry script **TimerWorkaround\_On.reg**. (Note: This setting has no effect under Windows 9x/ME.)
- The game no longer freezes when Single Stepping is used up to the end of an Instant Replay.
- The Super/Aqua Sheep visual angle now more accurately depicts the angle in which the sheep is flying.
- The crosshair visual angle is now more precisely depicted.
- The phone icon no longer displays as a result of a whisper which would otherwise be invisible. Note that people with older versions will still see the icon.
- It is no longer possible for a host to start the game on your end if you have not lighted *on your end* to signal readiness. If the host attempts this, your Ready light bulb will flash; click it to go ahead and start.
- With Large Fonts (fonts set to something other than 96 dpi), certain border boxes were drawn with overextended lines.
- The random map generator is now much less likely to make oversimplified maps; it now generates complex maps more consistently than versions prior to 3.6.
- Fixes affecting game logic
  - The v3.6.19.17 fix: *"Weapons can now be selected while your worm is reshooting the Ninja Rope."* introduced a glitch: if you made your worm shoot a starter rope from mid-air, and attempted to select a weapon before the rope caught, the default would be selected instead. It was not intended that selection be possible during the starter rope shot. In v3.6.19.18 the fix for this wasn't complete.
  - Crates no longer fall slowly following a turn in which Low Gravity was active.
  - The previous fix: *"There was a mismatch between the Fall Damage threshold speed, and the threshold speed at which the Parachute was activated. There was a small space between where your Worm could accrue fall damage without the parachute activating. This only happened when the worm was sliding, for example from the Rope."* was incomplete; there was still a small window between the thresholds. This is now fixed once and for all. **[Not quite a complete fix; see v3.6.21.1 fixes.]**
  - If a moving worm knocked a mine directly, it was then possible for the worm to pass out of range without triggering the mine.
  - The W:A message format internally allowed a Super/Aqua Sheep to be turned at sudden angles, even full reverse. This would have required hacking, though: it wasn't possible using the keyboard.

### Features

- A game timer is shown above the turn timer. (In replays, it has full precision; in game play, it has hours and minutes.) This is useful for referencing moments in replays, and is also a stopgap until bookmarking and cropping are implemented.
- The turn timer no longer "fades in" during replays, so that the duration of a very short turn can be read easily.
- Precise fuse timers are shown during replays.

- The phone icon is now displayed in whichever corner is least intrusive.
- The display can now be scrolled while paused in Single Step mode during a replay.
- Features affecting game logic
  - Worms can now change direction and fire a weapon in the same instant. (This is similar to a change in v3.5 Beta 1, which allowed one to change direction and jump in the same instant.) So for example, in a Battle Race, you can now land from a jump, hold the key to face in the opposite direction and fire the shotgun immediately after landing without worrying that your worm may fire in the wrong direction if your timing is perfect.
  - Utilities can now be toggled; for example, if you use Low Gravity after it has been activated, it is cancelled.
  - Worms can now walk backwards. When you hold the Shift key and walk, your Worm will not change the direction in which it is facing. This is useful for fine-tuning your position prior to a jump or shotgun shot, for example.
- Switched to Visual C++ 7 for compiling, with Whole Program Optimization. This may make the game engine a bit faster (e.g. for faster, smoother fast-forwards in replays).

### v3.6.20.2 Beta Update (2004.08.03)

#### Fixes

- Some people experienced a jerky game with 3.6.20.1, for a reason entirely unrelated to that which the timer workaround addressed. It was caused by the previous fix "*W:A no longer uses 100% CPU unnecessarily.*" and is now resolved; it turns out that in-game, 100% CPU usage only ever occurred while minimised; yet in 3.6.20.1, the fix was applied even when the game was in the foreground.
- To avoid distraction, the phone icon (which could swap sides at any time in 3.6.20.1) now only swaps sides while hidden.
- Fixes affecting game logic
  - There was a bug in v3.6.20.1 where instant replays could diverge from what actually happened, especially if roping or mines were involved. Through a loophole, this also allowed the offline use of slow motion. The possible earlier use of the loophole is now reported when playing back replays in which it was used (pull down the chat to see such messages).
  - In v3.6.20.1, schemes that had been externally edited to give weapons power levels higher than 5 stars no longer worked in the same way. This caused desyncs when playing back replays and playing online games using such schemes. Now, compatibility is restored, as long as the power levels lie within some "standard" ranges. All weapons must be  $\leq 20$  stars; Mortar, Cluster Bomb, Banana Bomb, Air Strike and Napalm Strike must be  $\leq 15$  stars; Skunk and Longbow must be  $\leq 10$  stars; Axe must be  $\leq 5$  stars. Schemes that break these limits will bring up a warning when loaded or when a replay is opened.
  - Worms can now *always* dismount the Jet Pack or Parachute by pressing Space, whereas before, this was not possible in Artillery mode (in which worms are forbidden from walking or jumping).

### v3.6.20.3 Beta Update (2004.08.06)

#### Fixes

- There was a bug in v3.6.20.2 causing improper emulation of v3.6.20.1. Using clustered weapons, skunks, longbows or axes could cause a desync. Now, v3.6.20.1 is properly emulated.
- To avoid invoking v3.6.20.2's improper emulation of v3.6.20.1, this version 3.6.20.3, when hosting, will avoid emulating .20.1 if there are players with .20.2 present; in this case it will emulate 3.6.19.19 instead. Note that there is still an exception in which a desync can happen: if you are not the host of a game, and the other people in it have a mixture of .20.1 and .20.2, then during the game the .20.2 players may desync and drop out. If the host is running .20.2 then the whole game could desync.
- The instant replay fix in v3.6.20.2 was incomplete, and could cause a crash.

### v3.6.21.1 Beta Update (2004.09.23)

## Fixes

- One of the ways in which W:A didn't work under Windows 2000/XP before the first v3.5 beta, was that it would hang when switching from the front end to gameplay mode, right before the piechart would have been shown. It was possible to fool it into starting anyway (by Alt-Tabbing to one of the W:A processes, or in some cases something more complex), but the palette would be wrong and the update rate would be slow. As it turns out, the fix was not complete, because this bug would sometimes still happen. Now there is a more correct fix that goes closer to the root of this problem, and it may solve problems some people have been having trying to start a game.
- Even when instant replays were disabled in the scheme, one would still be shown after a Worm had skimmed water or used a Kamikaze.
- When using the mouse to point a Strike weapon, the cursor was initially pointed 45° left/right from down. If the angle was adjusted with the Left/Right arrows, it would still point 45° right but would point 34° left. This is now fixed. On the other hand, the cursor for Teleport and other targeted weapons was originally intended to point 45° up-left, but everybody is used to that fact that it points 34° left from up. This is caused by a glitch, but a change would be disorienting, so the 34° angle has been preserved.
- Ran Profiling on W:A to find where the CPU spends most of its time in-game, with some interesting and helpful results.
  - The function to render flaming health bars was always being executed, whether or not any flaming bars were actually being displayed. This routine was unoptimised and very processor intensive. It is now much more efficient, and furthermore will not run unless needed.
  - Fixed-point multiplication has now been inlined, creating a global speed-up. (Sea bubbles were a heavy user of multiplication, so there's a speed-up even in idle conditions.)
  - These changes allow for better performance when fast-forwarding replays, and should also help to keep the frame rate steady during normal play.
- In games recorded with v3.6.19.15 or later, chat messages that were made after a pending game-over were not being shown during playback.
- Fixes affecting game logic
  - The Girder Radius (maximum ortho-distance between your worm and any possible place you can place a girder) is now calculated from the centre of the girder. Previously, it was calculated from the upper-left corner of an orthogonal rectangle encompassing the girder, which was asymmetric and non-intuitive. Note that the radius actually defines a diamond rather than a circle, as with many things in W:A; ortho-distance is the sum of horizontal and vertical distance, as opposed to distance which is the square root of the sum of the squares of horizontal and vertical distances.
  - If an animal (such as a sheep) was sent out to collect a health crate, and the Worm sending it died before collection, the health would still be added to its team total. This could cause the game to see that team as "alive" even after all its worms died out; but when the turn passed to that team, the game would crash. Now, health crates will not be collected by an animal sent by a now-dead Worm. **(See Footnote 2.)**
  - After using Rope, Bungee or Parachute, a player would always get Air retreat time on that turn, even if using a weapon from the ground.
  - It was possible to fire a ground-only weapon in the single frame (1/50 second) step between walking off a ledge and falling. The weapon would not fire, but would incur retreat time. Now, such an attempt will result in a warning beep.
  - Under certain very rare circumstances, a roping Worm could become stuck against a wall at the same moment the rope unsnagged, causing it to be trapped in that spot until dismounting from the rope. This also caused the game's CPU usage to soar until the rope was dismounted.
  - The parachute/fall damage speed threshold mismatch was indeed fixed once and for all in v3.6.20.1. However, there was again a small area between vertical speed thresholds where a Worm that fell out of a roll or slide would twang without accruing fall damage, as there was in v3.6.19.7. **[This was finally a complete fix.]**
  - Normal mines were not triggered by a Frozen Worm, but mines from a Mine Strike were.
  - Under certain rare circumstances, a dud mine could explode. The condition for this made no sense; it didn't have anything to do with blasting or knocking the mine, but rather happened when the centre of the mine was within 1 pixel of the centre of a worm at the right moment. This is now disabled and in a future version will be replaced with something more sensible.

## Changes

- Some people experience a palette bug in which background apps can steal the palette from W:A, corrupting some or all of its colours. W:A will now log these to "palette.log" located in your main Worms Armageddon folder. Note that the problem can still happen; the only change is that it is logged. This information gleaned from this may lead to finding a fix.

## Features

- It is now possible to play replays as fast as your machine is likely to handle, and at 1.5× as well. The [1]-[9] keys now correspond to 1×, 1.5×, 2×, 3×, 4×, 6×, 8×, 12×, 16×. Hold [0] while pressing [1]-[9] and you will get 24×, 32×, 48×, 64×, 96×, 128×, 192×, 256×, 384×. (As before, holding Shift while pressing [1]-[9] will set slow-motion; the multiplier chart becomes a divider chart.)
- The frame rate will not be allowed to drop significantly below 10 fps. Thus the keyboard will no longer become very unresponsive during a fast-forward which taxes the CPU.
- As before, holding the left mouse button during a replay will override automatic camera motion. This now works in an online game during other players' turns. In addition, turning on CAPS LOCK will override the camera during a replay. **[Caps Lock no longer has this function. See the entry for v3.6.26.4.]**
- There is now a Log Extraction feature which can be applied on game recordings. Right-click on a **.WAgame** file and choose **"Extract Log"**, and the game information, chat and major game events (with timestamps in game time) and end-game stats will be logged to a file in the same folder with the same base filename.
- Features affecting game logic
  - In Cavern levels, the Teleport and homing weapons can now be pointed within a slightly larger range, encompassing the leftmost and rightmost positions where a Worm may stand on the edges of the landscape. While pointing near the rightmost edge, the cursor is now horizontally flipped for visibility. The cursor can also now be moved all the way down to water level.

## v3.6.21.2 Beta Update (2004.09.27)

### Fixes

- The first fix in the list for v3.6.21.1 was actually a regression for some people not running Windows XP.
- When a player tries to Teleport to a spot that is partially blocked, the cursor is nudged to the nearest available spot and a spangle flashes in the new spot. But in a game with v3.6.21.1 as the logic version (i.e., no emulation) this would only look correct on the local end, while a game was being played. To remote players in a network game, and during playback, the cursor nudge and spangle would not show up.
- The message *"Game will take advantage of the latest n.n.n.n features and bug fixes"* will now display the game logic version rather than the exe version.
- For readability, the Extract Log feature now uses "•••" to denote game events rather than "\*\*\*\*" as before.
- Speed / update rate
  - A check was inadvertently disabled, the purpose of which was to prevent the clock from ticking more than 1/4 second during a chunk of "screen lag". It is now re-enabled.
  - During an instant replay, a fast-forward that was fast enough to drop frames could overshoot the end of the turn, eating into the turn time of the next Worm.
  - The prior version restricted the rendering rate from dropping below 10fps. This was too arbitrary. The frame drop threshold is now calculated as a point of diminishing returns, where further frame dropping would not boost the speed by more than 10%. When fast-forwarding, this is often well above 10fps, especially on faster computers (this should also make screen lag more tolerable). Additionally, slow computers may sometimes need to drop below 10fps (for example, when a lot of fire is being thrown around).
  - In-game palette fading is smoother now. This is partly due to streamlining the way fading is done (previously, each fade increment was done separately for objects, water and terrain), and partly due

to making external applications unaware of the game's palette adjustments. (The latter is a workaround for that fact that, regarding palettes, DirectDraw does not give exclusive treatment to full-screen apps.)

- Volume adjustments
  - When the volume was adjusted in the front end, and a game was started within the same session, the adjustment would be forgotten.
  - Volume adjustments in the front end are now instantly applied to the ambient "menu loop".
  - The volume setting was not being applied to the "loading tick" sound effect (made each time the pie chart fills by an extra 4%)

### v3.6.21.3 Beta Update (2004.09.28)

#### Fixes

- In v3.6.21.2, the in-game palette would not be restored after minimising in most circumstances.
- On systems running Windows 9x/ME, W:A v3.6.21.2 would crash when a game was started. Due to this, the DirectDraw palette workaround will be disabled on those systems.
- The following v3.6.21.2 fix was incomplete and is now fixed as intended: *"When the volume was adjusted in the front end, and a game was started within the same session, the adjustment would be forgotten."*

### v3.6.22.1 Beta Update (2004.10.06)

#### Fixes

- If the volume was adjusted in-game, the change didn't have an instant effect upon returning to the front end.
- Volume adjustment is now applied to streams and in-game ambient music. There is now nothing left that doesn't respond to volume control.
- The Extract Log feature brings up a console window to show its progress. However, it would often be opened behind other windows. It will now try to move itself to the front. **[Note: This fix did not in fact work.]**
- Bugs introduced in v3.6.21.2
  - WAGame files made by private betas before 2004-01-27, or Mission/Training from any version, would crash upon playback. The former would in some cases play without crashing, but would desync due to differing crate falls.
  - If W:A were forced to minimise in-game (without using the Escape menu option) then its palette would be garbled and no amount of minimising would bring it back.
  - The game would sometimes crash when returning to the front end.
- Fixes affecting game logic
  - The Girder Starter-Pack allows you to select a stop sign after placing at least one girder, to prematurely stop placing them. However, in v3.5 Beta 1, this was inadvertently disabled. It works again now.

#### Features

- The <center> tag is now supported and used in ServerList.htm.
- The Extract Log feature now lists total turn/retreat times for each team.
- The colour scheme used for allies (red, blue, green, yellow, purple, cyan) can now be modified to allow those with certain types of colour deficiency to be able to easily distinguish problematic colour pairs. (It is targeted particularly towards protanomaly.) This switch has been added to the Options menu, replacing the terrain editing button in that screen. If the new colour set does not help you and you still have trouble distinguishing certain team colours, please post in the support forum (**see section 7.0**).
- Features affecting game logic
  - You now get retreat time after using the Girder Starter-Pack on land.
  - The Mortar and Homing Missile now have shiny new launchers that are coloured differently, to make them easily distinguishable from the Bazooka and Homing Pigeon. The Bazooka also has a

makeover.

## Notes

- Due to the changes regarding colours, a pair of new sprite archives have been included in this release. These files are approximately 12 MB each, and are not internally compressed because this allows the distributed package to compress much better (for a quicker download).
- If you are not going to use the colour deficiency option, you may safely delete Gfx1.dir, freeing 12 MB of hard disk space. Similarly, you may delete Gfx0.dir. Deleting them both will still allow W:A to run, but will locally disable the new colour features.
- The original Gfx.dir is still used for compatibility purposes. Do not delete it.
- Due to the larger sprite archive, W:A now requires 8 MB more RAM than before. If this is a problem for you, please post in the support forum ([see section 7.0](#)).
- As an upshot, W:A may be slightly faster in-game since it will not need to decompress sprites on the fly.

## v3.6.23.0 Beta Update (2005.03.23)

### Fixes

- There were quotation typos in two sets of localised in-game text comments. These could cause a crash when the game tried to display the erroneous text.
  - **Worm Death on Land / Spanish:** Every time a worm died on land there was at most a 1/38 chance that the game would crash if localised in Spanish.
  - **Worm Sickness / non-English:** Every time a worm got sick (due to a Skunk, an Indian Nuclear Test, or a Nuke at Sudden Death) there was at most a 1/16 chance that the game would crash if localised in a language other than English.
  - Whether or not a crash would actually happen depended on the layout of RAM, the compiled executable, and random chance. In certain versions of the executable, there may have been no chance of a crash from one or both of these bugs. However, even if there was no crash, the erroneous comment, when displayed, would be a concatenation of two particular comments which would never be individually displayed. For example, if a Worm named Torg died on land, and the Spanish bug occurred without a crash, the comment "Torg falleció ya no podía más" would be displayed.
  - The fix involved changing which comments are randomly chosen; previously there had been two comments in a set which were treated as one. When emulating previous logic versions, the bug will be re-enacted without a crash, by joining the two comments with an '&' character. This guarantees that any two given players will see the same comment at the same time if W:A is localised in the same language for both of them.
- If your nation in **Control Panel: Regional and Language Options: Location** was unrecognised, you were assigned an invalid flag number and thus disallowed from joining hosted games (not to mention being greeted with several error messages regarding defaults upon launching W:A). Now when your nation is unrecognised, you are assigned a question-mark flag and can join any game (and fanfare, flag and soundbank will default to the UK for CPU and newly-created teams).
- Flags have been added for the countries [Chile](#), [Serbia](#), and [Slovenia](#). Currently these flags work only in the WormNET lobby, not in the host/join screen.
- Flags that were partially black became partially transparent in the host/join screens.
- The German W:A CD-ROM had some erroneous Mission Image files, causing certain missions to play with the wrong map. W:A now works around this bug by using the duplicate images from elsewhere on the CD-ROM.
- Domain names are now supported and used in ServerList.htm. (Previously, only IP addresses would work.) Also, the default http port is now always 80, and doesn't have to be specified explicitly in a server list with multiple servers.
- The WormNET server incorrectly limits nicknames to 15 characters instead of 16, so if you came onto WormNET with a 16 character name, it would be truncated and you would not be able to properly join channels. W:A now detects and recognises the truncated name as being your own. When you host or join a game, your name will not be truncated.
- Changing the team colour set in the Options menu only lasted for a single session; it was necessary to

change the registry setting directly to make it stick.

- Entering a line nearly 500 characters long in the host/join chat caused a local crash.
- When using the mouse to open the Scheme or Terrain combo-boxes, if there had been no previously selected item or if it had been modified, the first item in the list would be autoselected.
- Map Editor
  - PNG levels saved with indestructible borders, when loaded, would be reset to having no borders.
  - A corrupt or invalid .BIT file would cause a crash when loaded.
  - When an image larger than 1920×696 (horizontally, vertically or both) was loaded with the Import function, it was automatically resized to 1920×696 without prompting the user. Now the user is prompted to choose between Shrinking and Cropping.
- As noted in the entry for v3.6.22.1, the Extract Log console window sometimes opened behind other windows. The previous fix did not work. A stronger attempt is now made to bring the window to the foreground. Also, it now displays the timer on one line instead of scrolling.
- The blank/duplicate name detection of the Team Editor was broken. It works properly now.
- The ability to scroll the display while paused in Single Step mode during a replay was added in v3.6.20.1, but there was a bug. The camera coordinates were allowed to bypass the normal limits, so while the display didn't scroll beyond the edges, you had to mouse back the same distance you had "virtually" moved beyond the edges to be able to scroll again.
- Since v3.6.20.1, missing checksums were not reported during playback.
- Fixes affecting game logic
  - At a certain water level, Donor Cards would float, throwing the game into an endless loop (the previous fix applied only to Weapon/Utility/Health Crates and Oil Drums).
  - When a Worm was in a confined space, its Ninja Rope would sometimes fail to catch for no apparent reason. (Note that this has nothing to do with the fact that the rope will not catch if you are right against a wall; this remains the same.) In free space, the worm would always be shifted approximately one pixel up and to the left every time the rope caught, regardless of the direction in which the rope pointed.
  - Changes affecting sound/speech (strictly speaking these changes don't affect the game logic, but they are tied to the logic version so that all players will hear the same thing)
    - In the Russian speech bank, the "Collect" sound was missing the initial sound effect.

## Features

- The Intro fade-in screens (Team17 and Microprose logos) have been improved.
- The nation flags are improved in the WormNET lobby, with an expanded palette. In the host/join screens however, they cannot use an expanded palette, as it's already taken by the map thumbnail; so in there, they have not changed as much.
- The Server List now includes a link that automatically logs you onto WormNET using the nickname entered in the main Network Menu (this works because logins are currently not enabled).
- You are now allowed to input all the characters allowed by the WormNET server that parse straightforwardly and are included in W:A's font:
  - Nicknames — Characters A-Z, a-z, 0-9, -`
  - Game Names — Characters A-Z, a-z, 0-9, !\$%()\*,-./:;=?  
@[]^\_`{ }~£ÅÄÅÄÅÄÆÇÈÉÊËÌÍÎÏÐÑÒÓÔÕÖ×ØÙÚÛÜÝÞÿßàáâãääæçèéêëìíîïðñóôõö÷øùúûýþÿ  
¿
- The <font> tag works a bit more nicely in ServerList.htm, which has been modified accordingly. Specifically, if the size is in quotes (e.g. <font size="2">) the sizes 1-4 are sorted by true size. And colour names (e.g. <font color="yellow">) are supported.
- Two new text colour escape codes have been added: \k for black and \R for dark red. These work in the same places as the other colour escape codes (ygwrnbBpP).
- The red colour used for WormNET join/quit notifications is now darker, unless the alternative (protanomaly) colour set is used.
- Changes to in-game AFK mode (triggered by entering /afk or /away in the in-game chat)
  - If enabled during worm placement, the worm will be automatically teleported to a random spot.
  - If enabled while on the Rope, Bungee, Parachute or Jet Pack, the worm will dismount if necessary before skipping its turn.
- The Extract Log feature now reports user fuse/herd/bounce for each weapon firing, when applicable.



- Changed the frame-drop speed ratio from 10% to 33%. (During fast-forwarding of a replay it will still be 10%.) This should make "screen lag" a bit less disruptive, and is a stopgap until a better method for tempering screen lag is found.
- Pressing the **R** key during playback of a recorded game will restart it from the beginning. This is useful if you are fast forwarding and have overshoot the part you wanted to see.
- The in-game dialog (ESC) and chat (PageDown/PageUp) transitions now always happen at a smooth default speed, independent of fast forward, slow motion and single step. The scrolling of chat text happens at normal speed except in fast forward, where it speeds up.
- The **Delete** key now skips past the minimum info detail level when worms are invincible.
- Features affecting game logic
  - Changes affecting sound/speech (strictly speaking these changes don't affect the game logic, but they are tied to the logic version so that all players will hear the same thing)
    - When a delayed weapon becomes activated, the "Drop" speech is now used. (Previously, "Collect" was used for both for this and for collecting crates, and "Drop" was never used.)
    - When a Worm found itself near a fused weapon about to explode, it would be alarmed and randomly say either "RunAway", "TakeCover", or "WhatThe". There was another sound also intended to be used for this purpose, "Grenade", but it was left unused due to a typo. Now it is used.

### v3.6.23.1 Beta Update (2005.03.23)

#### Fixes

- Bugs/flaws introduced in v3.6.23.0
  - The game refused to launch in Windows 9x, due to its use of AllowSetForegroundWindow().
  - An unrecognised operating system language resulted in localised text being blank. It now defaults to English again.
  - The new dark red used in the WormNET lobby was too dark.

### v3.6.23.2 Beta Update (2005.03.24)

#### Fixes

- The Gfx0.dir and Gfx1.dir included in v3.6.23.0 (in the larger archive which required only W:A v3.0 or later to be installed) were experimental versions in which certain sprites such as the oil drum looked bad due to poor palette appropriation.
- Under Windows 9x, residence in Chile or Slovenia (whose flags were added in v3.6.23.0) was not detected, even if the information was provided by Windows. In the case of Chile, the flag defaulted to Spain. (Note that Serbia cannot be detected under Windows 9x, because it has the same language code as Croatia.)
- Fixes affecting game logic
  - It was possible for a crate to fall on top of a frozen worm, or very close to one. If this happened immediately before the frozen worm's team got its turn, then the crate would be instantly collected. [This fix was ineffective. See the entry for v3.6.26.4.]

### v3.6.24.1 Beta Update (2005.03.29)

#### Fixes

- A replay file which ended abruptly (due to a crash or Alt+F4 during recording, or a recording still being made), when played back, would continue indefinitely after the point at which the file ended, with the human-controlled worms doing nothing and CPU worms (if any) moving like normal.
- Pressing the **R** key to restart a replay now clears the chat box.
- Flags
  - UK: diagonal red lines are less pink and more red
  - Spain: proportions of bars fixed (1:2:1), coat-of-arms removed

- "Extract Log" has been renamed to "Export Log", because that more accurately describes the process.

## Features

- Screenshots are now saved in **User\Capture** under your main W:A folder.
- A video capture feature has been added. Right-click on a **.WAgame** file and choose "**Export Video...**". A dialog box will pop up with some options; you may modify the options to your liking then click OK. An image sequence will then be saved in PNG format to a folder named after the replay file, under **User\Capture**.
  - Frame rate divider: W:A has a native frame rate of 50 fps. This is divided by the "frame rate divider" value, so for example entering **2** will result in a captured frame rate of 25 fps, and **5** will result in 10 fps.
  - Start at: The time index (in game time) at which to start capturing video. Examples: **5:15**, **7:34.18**, **1:41:09**, **2:07:59.72**. The replay will fast-forward to this point.
  - End at: The time index after which to stop capturing video and exit, using the same format as above. If left blank, video will be captured until the end of the replay or a manual quit.
  - Resolution: The resolution at which to play and capture the specified replay. This defaults to 640x480 regardless of what resolution you have set for normal play. If you choose a resolution unsupported by your video driver, it will default to 640x480.
  - Basename: The prefix to use for naming images in the captured sequence. For example, the default **video\_** results in filenames such as **video\_007815.png**.
- You may now right-click on a **.WAgame** file and choose "**Playback at...**" to automatically fast-forward to a specified game time before commencing normal playback. Note that if you press **R** during playback, it will again fast-forward to the specified point. Press **Shift+R** to override this and restart without fast-forwarding.

## v3.6.24.2 Beta Update (2005.03.31)

### Fixes

- The chat box did not redraw if it scrolled while minimised during an online game. So if you were minimised while other players chatted, and then you restored, you would not see what they had said until you or they typed something new. The chat also updated sporadically while fast-forwarding a replay.
- Flags
  - Brazil: The background green has been darkened.
- Fixes affecting game logic
  - A glitch was introduced in v3.6.23.0: If a Worm fired the Ninja Rope from a standing position, after the rope attached there would be up to a quarter-second delay during which the worm did not move at all. If the worm got off the rope before this delay finished, it would instantly be ready to fire another rope or weapon (i.e., with no delay to land and get up).

### Features

- There is now an option to enable rope knocking in offline games. To turn it on, execute the registry script **OfflineRopeKnocking\_On.reg**. This applies to Offline Multi-Player and Quick CPU games, but not to Training, Missions, Deathmatch games, or LAN games.
- A flag has been added for the country **Lebanon**.

## v3.6.25.1a Beta Update (2005.04.26)

### Fixes

- In Windows 2000, certain graphics in the front end were skewed/slanted. These included the team colour/handicap icons when setting up a hosted or offline multi-player game, and worm count icons when joining an online game. In 3.6.24.2 this included nation flags in the WormNET lobby as well.
- The **OfflineRopeKnocking\_Off.reg** and **OfflineRopeKnocking\_On.reg** registry scripts are now

compatible with Windows 9x/ME.

- The hyphen character ("-") can now be entered in W:A's IP address entry boxes. This is useful if you need to specify a domain name instead of an IP address, and the domain name contains a hyphen.
- All possible filename characters can now be entered in the Scheme combo box, and scheme names are no longer required to be at least 3 characters long. [This change was only applied to the Multi-Player menu. As a side effect, the Options menu's scheme editor was crippled. This was fixed in v3.6.26.5.]
- The list of players in the host/join screen has been expanded vertically. There is an extra pixel of space before and after each entry, making the list 14 pixels taller. As a result of this, nation flags are no longer clipped, and the edge of a map download progress bar no longer gets completely hidden when it goes behind a flag.
- When **R** was pressed to restart a replay:
  - The chat box did not clear until the first message scrolled by.
  - If pressed during the palette fade of a Nuke, the palette was not reset to normal.
  - If pressed during an Earthquake, the quake sound effect would continue to play.
  - If the replay had been played past sudden death, causing the loss of worm selection, selection would not be restored at the start of the game, resulting in a desynchronised second playback.
  - If players disconnects were re-enacted, they still be shown as disconnected at the beginning.
- The graphical representation of the Ninja Rope was misaligned when it was perfectly orthogonal (horizontal or vertical).
- Bug introduced in v3.6.23.0: When playing back a Mission or Training replay that took place in a cavern, the map was treated as an island, resulting in checksum errors. [This was an incomplete fix. See the entry for v3.6.26.4.]
- Errors / warnings in PNG maps were not reported properly. This would only happen with a malformed PNG file, e.g. one that was hex edited.
  - If a PNG error or warning occurred when launching a replay file, an invisible dialog box popped up, requiring Enter to be pressed blindly to dismiss it. If this was not done immediately, the "WA.exe" process had to be killed manually, otherwise subsequent attempts to launch replays would fail until the next reboot.
  - If a PNG error or warning occurred within the front end, a dialog box popped up that was impossible to dismiss because it didn't have the input focus. In this situation "WA.exe" had to be minimised and killed manually.
- In v3.6.23.0, a corrupt or invalid .BIT map file would no longer cause a crash when loaded. However, some map settings would be loaded from the invalid file, and the file handle was not being released (so a second attempt to load the same file in the same W:A session would do nothing).
- In the Map Editor, right-clicking the Preview/Edit-mode button to convert the current map/preview into a colour map disabled Indestructible Borders if they were previously enabled. Indestructible Borders were also disabled when right-clicking on a map thumbnail when a colour map was currently chosen.
- If a colour map was loaded, and was automatically given a cavern roof by default, but the roof was turned off from the Map Editor by the user, and then the Map Editor was exited and re-entered, the map would be shown as having a roof, when in fact it did not; and if no change was made, after exiting the editor the map would still have no roof. Note that whereas toggling the roof on a black and white map changes the upper 8 pixels of the map, doing so on a colour map only changes the flag specifying whether the map is a cavern or not.
- There was a bug in the Map Editor's drop-down file browser. It was possible for the game to crash when clicking on a <folder> to enter it. The chance of this occurring was low, but existent.
- Miscellaneous minor improvements to the host/join flag colours (note that the new flags still do not work in host/join)
- Fixes affecting game logic
  - If a Worm was releasing a herd of Mad Cows, and was fatally injured (most likely by one of the cows) at the same 1/50 second interval when the next cow in the herd would have been released, the game would crash. (**See Footnote 2.**) In an online game, usually (if "usually" even applies to this strange and rare bug) the crash would happen only for current player, whereas remote players would see that player disconnect.
  - If Super Weapons were disabled in a scheme, not only would they never appear in crates (the desired function) but would be removed from the initial Ammo stock as well (an undesired side

effect). With this fixed, specific Super Weapons can now be in the scheme without any Super Weapons ever appearing in crates.

- The Girder was artificially constricted from being placed in the upper 16 pixels of an island map.

## Features

- It is now possible to control the Placement Holes on a colour map. These are the holes that show up when the game detects there is not enough room to randomly place Worms, Mines and/or Oil Drums (or not enough floor for them to stand on) at the beginning of a game, with each hole filled with a small girder. For example, they show up in a completely full map (i.e. a Moleshopper map) or an completely empty map.
  - When viewing a colour map in the Map Editor, right-click the Preview/Edit-mode button to toggle Placement Holes.
  - When holes are enabled, they will be automatically previewed in the Map Editor. The Reseed button can be used to cycle the holes to a different set of random positions.
  - All players in an online game must be using v3.6.25.1 or later to be able to play on a map with holes disabled. If this is not possible, try cycling the Reseed button until the holes go away or are in inconsequential positions.
  - When opening a PNG file without metadata (i.e., one that hasn't been resaved from W:A's map editor) holes will be disabled by default. If you are playing with someone using an earlier version, you must either manually enable holes or open a map that already has them enabled in its metadata.
  - When holes are disabled:
    - A map with more than 64 colours will be displayed perfectly, with none of the glitches that occurred in earlier versions. To accomplish this, the following things are also disabled: soil texture (which appears when land is destroyed); the background layer (scrolls in parallax behind the map); background debris (gets blown by wind). The soil outline colour will be grey (in a future version, the map will be able to define it, among other things).
    - A map can have up to 112 colours. If it has more than 96 colours, the background gradient will be black. Note that as before, transparent black is not counted; you may have up to 113 colours including black.
    - The game will still search for up to 32 available positions. To find each position, it blindly tests up to 500 random spots for empty 40×40 pixel squares; if none are empty, it stops searching (this is the point at which it would start carving spots from the landscape, if holes were enabled).
    - If the game does not find enough available positions to automatically place all worms, then manual worm placement will be forced. However, if there are CPU worms present, this will in turn override and force automatic placement; in this situation the game initialisation may be lagged, placements chosen may be quirky, and in a cavern map, worms will be automatically drowned if there are no available empty 9×16 pixel rectangles.
- There is now a front end button graphic for infinite turn time (this could previously only be accomplished using an external scheme editor). As before, when the turn time is set to infinite, the in-game timer display will count up from zero (for players using v3.6.19.17 or later). Note that in the host/join screen, people using versions earlier than v3.6.25.1 will see the turn time as "15", and people using v3.5 Beta 1/2/3pre1 will see it as "90".
- The player list in a hosted game now has a double-thick bottom border to indicate that it can be dragged/resized. (This is merely a visual hint for a previously added feature.)
- Local workarounds for emulated v3.5 Beta 1/2/3pre1 bugs
  - When the player's worm is on the Rope, Bungee, Parachute or Jet Pack, the Girder and Teleport placement is not checked. This means that a girder can be placed in spots where it will intersect with land, worms and other objects. The Teleport will also accept any position, but if a teleport attempt intersects with something (even a crate), it will fail and the worm making the attempt will teleport onto itself. When emulating this bug on the local player's machine, W:A will now check teleport attempts and beep on an invalid attempt (it will even simulate a beep to be heard remotely and in the replay). Note that this is slightly unfair, as the person truly running v3.5 Beta 1/2/3pre1 will still experience the bug.
  - Letting the timer run out during manual worm placement could throw the game into an endless loop,

beeping constantly, instead of automatically placing the worm in a random spot. When emulating this bug on the local player's machine, W:A will now short-circuit the endless loop with local control. One beep will be heard. Note that if the central spot of the map has space for a worm, it will be placed there instead of a random spot. Also note that the person truly running v3.5 Beta 1/2/3pre1 will still experience the bug and throw the game into an endless loop.

- The context menu for a .WAgame now has hotkeys assigned to the commands (e.g. Export Log)
- Changes to this Readme
  - Added release dates to the **2.0 Version History** section and the **Beta Update** headers.
  - Added a list of known issues to the **4.0 Known Issues** section.
- Features affecting game logic
  - In games with Stockpiling or Anti-Stockpiling enabled, Strike weapons collected during a round played on an Island landscape are now preserved in a dormant state during rounds taking place in a Cavern landscape. (Previously, they were lost under these circumstances.)

## v3.6.26.4 Beta Update (2005.11.22)

### Fixes

- With some video cards (e.g. NVIDIA GeForce 6600 GT) and drivers, W:A's front end would have a very slow refresh rate, resulting in extreme unresponsiveness.
- There are many additional checks that will prevent crashes caused by:
  - Attempting to play WAgame files containing invalid data in them
  - Attempting to load .BIT maps containing invalid data
  - Receiving invalid data over the network in an online game
- It used to be possible, using a hacked connection or EXE, for a client connected to a host's game to:
  - Force other players to light up, falsely signifying their readiness to start the game.
  - Remove a team belonging to the host or a different client.
  - Add a new team on behalf of another player.
- When more than 15 kills are made in a single turn, the number of kills is now reported correctly in the game comment displayed at the top of the screen.
- Opening a .LEV or .BIT map in the Map Editor rounded off the percentage of objects and bridges, so that the same map when resaved could be rendered differently.
- If, at the Next Round stage of an online game, the host loaded a map unsupported by one or more players due to their running an older version of W:A, there would be no text warning when everyone lit up, and the game would be allowed to start. When it started, the players for whom the map was unsupported would desync.
- v3.6.19.14 fixed the playback of Deathmatch games that were incorrectly recorded by earlier versions, but this fix was broken in v3.6.23.0. It is fixed again now. (Note that it is only the playback of Deathmatches recorded before v3.6.19.14 that was broken; new ones were recorded fine.)
- If the Export Log function could not create the log file, full screen playback was initiated instead. Now it aborts and pops up an error box.
- The Homing Pigeon sprite was animated at a speed dependent on the video refresh rate, and therefore flapped its wings fast even in Single Step mode. Now it flaps its wings at a rate consistent with everything else.
- When emulating 3.5 Beta 1/2/3pre1, if the bug *"Once Worm Selection was disabled by the onset of Sudden Death, it did not come back in following rounds"* occurred, this fact was not noted in the recorded game file; as a result, the game could desync when played back.
- When **R** was pressed to restart a replay, the bottom of the viewport was not reset to reflect the initial water level if it had risen during playback.
- Starting in v3.6.23, the Nuke fade-to-white was incomplete; if backgrounds are turned off, the background in the 1920×696 rectangle occupied by the landscape stayed black throughout the fade. On an island map, this was especially unsightly because the space outside the rectangle did fade while the inside didn't.
- In an online game, if the host had loaded a map causing one or more players' names to be crosshatched in red (signalling version incompatibility), and then proceeded to switch to an intrinsic map (from the pull-down menu below the terrain thumbnail), the name(s) would continue to be crosshatched

in red even though the incompatibility no longer existed; the game would also be prevented from starting.

- In an online game, during your turn, your moves are time-delayed before being sent over the network. This is necessary, because otherwise an unnecessary amount of bandwidth would be used. However, the buffering was also being applied to chat messages made during other players' turns! So your first message typed during someone else's turn would be delayed for 2 seconds before being sent, and subsequent messages before the beginning of the next turn would be delayed for 1 second. So, say you tried to give advice during a player's turn, and it was the first message you typed during that turn. By the time the player saw your advice, 4 seconds (plus network latency) of game time would have elapsed relative to the game time on your end when you pressed Enter. Now, chat messages are no longer buffered or delayed during other people's turns (this reduces the minimum relative game/chat lag to 2 seconds). Note that during your own turns, your own chat messages are delayed to synchronise with your actions in the game (which is how it has always been).
- The Export Log feature was incorrectly reporting the Local Player (on whose machine the recording was created) in some cases, and not reporting a local spectator at all.
- After using the Export Log function, the game volume was reset to zero.
- There was a memory leak in the crate drop algorithm for v3.5 Beta 1 and later; every time a crate tried and failed to drop due to insufficient space on the map, 326 kB would be allocated without being freed. If this happened a sufficient number of times, the game would crash. Note that most of the time a crate doesn't fall, it is usually for a different reason. There have been no reports to suggest that this memory leak ever resulted in an actual crash.
- Bug introduced in v3.6.23.0: When playing back a Mission or Training replay that took place in a cavern with an indestructible border on all sides, the map was treated as an cavern with only a top border, resulting in checksum errors and possible desynchronisation. This issue was supposed to be fixed in 3.6.25.1, but the fix was incomplete.
- A "win" could be triggered in Mission #14 "Super Sheep to the Rescue" by destroying the target crate. The same could be done in this mission and two others by hitting Alt+F4.
- In Mission #26 "Mad Cows", one of the CPU worms was placed randomly due to a mistake in its script. The mistake is now ignored.
- If the drop-down list of files was opened from within the Map Editor, but there were no files in **User\ SavedLevels**, it would become impossible to dismiss the drop-down list without killing the "WA.exe" process. Now, the list will not appear unless there is something to occupy it.
- In v3.6.20.2, it was acknowledged that there are some "nonstandard" weapon power levels which have stable meanings, identical in all W:A versions. These tweaked power levels were given "standardised" status from v3.6.20.2 onward. However, the levels above them had unstable meanings depending on the exact "WA.exe" being used, because they overlapped with random junk in memory; if a scheme exceeded these thresholds, players using different W:A versions could desync, and replay playback could desync as well. For this reason, a warning message was shown when such "overtweaked", deprecated schemes were loaded. However, at least one scheme-maker ignored this warning when making a "board game" scheme.
  - From v3.6.26.4 onward, the overtweaked power levels are standardised. They will all cause a weapon to have "zero power" — no explosive power at all.
  - The random junk from v3.6.22.1, v3.6.24.2 and v3.6.25.1a is emulated. Some of it also corresponded to zero power, but some of it did not.
  - The warning message is still shown when loading an overtweaked scheme online, because it cannot be predicted whether a player will join using an old version without its random junk emulated.
- It was possible for a Mission Attempts counter to overflow past 127 into negative numbers. If a mission was started with "negative" attempts, some objects such as crates would not appear, in some cases causing the mission to be subsequently unwinnable unless the counter was forced to increment up from -128 to zero.
- If, at the Next Round stage of an online game, the host loaded a map that was not supported by a certain player (due to that player running an old version of W:A), the player's name was not crosshatched in red to signal the incompatibility, and the game was allowed to start even though upon starting that player would have desynchronised. This is now fixed.
- The magenta team colour was referred to in some places as "purple". All occurrences (for example the

"/purple" allied chat command, and the player list in exported logs) have now been replaced with "magenta", because it describes the colour more accurately.

- Flaws in Emulation
  - There may be situations involving Worms and/or Animals moving and overlapping with other objects, during which a desync could have happened when emulating a version earlier than v3.6.19.16.
  - When emulating a version earlier than v3.6.22.0, it was possible for a desync to happen while a Worm was drowning (for example, a mine-blasted or rope-knocked worm) during the active turn of another Worm, if the active worm used a weapon or utility, lost control, or triggered a mine, while the drowning worm was still sinking in the water.
  - These desyncs can still happen in an online game connecting a combination W:A versions in both of the following ranges (where "threshold version" is v3.6.19.16 or v3.6.22.0, depending on the bug):
    - One or more player(s) using a version of W:A earlier than the threshold version
    - One or more player(s) using a version of W:A at the threshold version or later, but earlier than v3.6.26.4
- Fixes affecting game logic
  - In a scheme with infinite turn time, collecting a Double Time utility crate would cause the turn time indicator to be glitched for the remainder of the turn.
  - In a cavern map with no detected available positions for Worm autoplacement, the attempt at autoplacement would fall into an infinite loop, audible as a string of beeps. However, the game would actually crash after a number of repetitions, due to the memory leak described above. This could happen after starting a game with an empty (or nearly 100% full) colour map with Placement Holes disabled, if the timer was allowed to expire on the forced manual placement or a CPU team was present. The game now automatically drowns the Worm in this case, which is what was intended. **(See Footnote 2.)**
  - The random crate drop algorithm avoids dropping crates near other objects (worms, mines, oil drums and other crates). For v3.5 Beta 1, the algorithm was rewritten (to fix a bug) with the intention of preserving the same logic for judging proximity. Despite this, it changed; in v3.0, the exclusion area around an object was a diamond with a radius of 64 pixels, but in v3.5 Beta 1 it became a square encompassing the diamond. This means that the new algorithm was twice as strict about placing crates diagonally close to objects. It is now back to how v3.0 was in terms of avoiding proximity to objects.
  - It was possible for a crate to fall on top of a frozen worm, or very close to one. If this happened immediately before the frozen worm's team got its turn, then the crate would be instantly collected. (The fix reported in v3.6.23.2 was ineffective.)
  - If a Worm dismounted a horizontally-stationary Ninja Rope in direct contact with the ground (**see Footnote 1**), then jumped and attempted to fire the Rope during that jump, it would refuse to fire.
  - The Scales of Justice included dead allies (team colour groups with no remaining worms) when dividing the total worm health by the number of allies to calculate an average. For example, if out of 5 players, 2 had died off, Scales would multiply the total health by 3/5. Another result of this bug was that if at least one ally had died off, and the remaining ones each had one worm with 1 health point, Scales of Justice would kill every worm, drawing the game.
  - The small horizontal girder had two stray dark pixels on its right edge. This could cause a grenade to bounce oddly.
  - Changes affecting sound/speech (strictly speaking these changes don't affect the game logic, but they are tied to the logic version so that all players will hear the same thing)
    - Since v3.6.23.0, when a Worm found itself near a fused weapon about to explode, it would include "Grenade" in its choice of random things to say from its team's speech bank. The problem is that not all fused weapons are grenades, and "Grenade" in some speech banks explicitly includes the word "grenade". So now, a Worm will never say "Grenade" if the weapon does not look like a Grenade or a Holy Hand Grenade.

## Features

- The language used for front end and in-game text can now be chosen manually from the Options menu.
- The German translations have been improved and corrected by bonz.
- This version of W:A can now emulate and interoperate with W:A v3.0. It is possible for an online game

to have mixture of v3.0 and v3.6.26.1+ users, and it doesn't matter who is hosting.

- Players using v3.0 will have their names crosshatched in black in the player list. If there is doubt over whether they are using v3.0 or v3.5 Beta 1, their names will be crosshatched in orange, but they will still be assumed to be using v3.0.
- Terrain Textures
  - W:A v3.0 applied terrain textures differently, resulting in more vertical thinning of the landscape (especially with the Desert and Jungle textures). This must be emulated for v3.0 compatibility. However, since this is an integral property of the map, it is attached to the map data now rather than being automatically matched to the game version being emulated. To toggle v3.0 style terrain texture thinning, hold **Ctrl** while clicking the Terrain Texture button in the Map Editor; it is helpful to do this while in Preview mode. The texture thinning property is saved along with the map.
  - When loading a .BIT or .LEV map with a date stamp earlier than 2002.08.08 (the approximate release date of 3.5 Beta 1), the file will be treated as if it had been designed for W:A v3.0.
    - This can be toggled by Ctrl-clicking the Terrain Texture button. When enabled, the map will be rendered exactly as it would have been with W:A v3.0 (or would be with Worms World Party).
    - Enabling this is useful for old Battle Race maps that exhibit blocked passageways when the newer texturing algorithm is applied (which could happen if the map was created for W:A v3.0 and the mapmaker always converted it to Hospital or Manhattan terrain before testing).
    - The old texturing algorithm looks inferior, so if you know it is not needed (i.e. if the map is not a Battle Race or if you have tested it beforehand) you can safely toggle it off.
  - W:A v3.0 had a doubled "Tribal" texture, which was removed in v3.5 Beta 1. As a result of this, the terrain texture index needs to be translated if it is "Tribal" or "Urban", and this is now automatically done in an online host/join session.
  - The main reason for which I implemented W:A v3.0 emulation was to make it possible to play back WAgame files extracted from network logs of online games played many years ago, before the Beta patch existed. It is now possible to do this, but the network log extraction feature is not included in the release version of W:A. I would like to know if anyone besides me has kept network logs of their pre-v3.6 games; if you have, perhaps this feature would be useful to you. See the Team17 Forum link near the end of this Readme.
- WAgame files recorded online now include the character @ in front of the name of the player who recorded the game.
- The Tools terrain texture is now accessible through the Map Editor. All players must be using v3.6.26.1+ to be able to play on a map with this texture.
- More error reporting is done while playing back recorded games or extracting logs (before, only checksums errors were reported)
  - The turn-end markers that were added in v3.6.19.15 are checked for proper timing.
- The logic is now more intuitive for handling keys that can either be *game control keys* or *chat editing keys* when the chat box is open.
  - Previously, it worked like this: If you had **Scroll Lock** on or it was someone else's turn, the arrows keys would act as chat editing keys. If **Scroll Lock** was off and it was your turn, the arrow keys would close the chat box and act as game control keys (e.g. to move your Worm).
  - Now, it works like this: If you have typed anything into the chat bar, the arrow keys will act as chat editing keys. Otherwise, they will act as game control keys (even if it not your turn, they will close the chat box, for consistency).
- With the **Scroll Lock** key freed from its unintuitive function, it has been assigned to a different task: locking the viewport/camera from being scrolled by anything other than manual mouse movement. (**Caps Lock** had been assigned to this function in v3.6.21.1, but this was inconvenient because it could result in unintentionally typing all-caps text after watching a replay.) **Scroll Lock** functions as a camera override at all times except when it is your turn, because locking the camera in some cases could be considered cheating, and could also cause confusion if left on by mistake. (Holding the left mouse button also functions as a camera override, as it has since v3.6.19.17.)
- During replay playback, a retreat counter is shown in red, with hundredths-of-a-second precision.
- Export Log additions



- The name and number of a Mission attempt is now detected and printed at the beginning of the log. At the end it is noted whether the attempt was a success or a failure. Note that W:A does not yet detect whether the Mission is genuine; if the person who played it edited the .WAM file, it will still be identified according to the terrain it uses.
- Bungee use is now noted. (Previously, "fires Bungee" would only be reported when an attempt was made to fire it like a normal weapon.)
- The telephone icon (which shows up in-game when another player chats while the chat panel is retracted on your end) can now be disabled. This option can be controlled by executing the registry script **Phone\_Disable.reg** or **Phone\_Enable.reg**.
- In game, the hotkey **Alt+Delete** now toggles transparency for labels. Since the palette is shared with the current map, some maps will allow the transparency effect to look good with labels of various colours. If there are many labels displayed at once, the visual refresh rate may slow down with transparency enabled. This setting always defaults to being off at the start of a game; it is not remembered between sessions.
- The precise fuse display (introduced in v3.6.20.1) is now disabled at the minimum Info display level (pressing Delete cycles through Info levels).

## v3.6.26.5 Beta Update (2006.01.05)

### Fixes

- The "slow front end" fix, introduced in v3.6.26.4, actually slowed down or stopped WA from working for some people, especially those using Windows 9x/ME. It is now optional. By default it is now disabled, so if you experience a slow front end without it, execute the registry script **SlowFrontendWorkaround\_On.reg**.
- The word "Language" was not properly translated in the Options menu, and "Français" was misspelled.
- In the Options menu, the Volume percentage is now displayed in all languages.
- In Swedish (Svenska), Worm Death comments referred to "\_LANG\_STRING\_" instead of the dead worm's name.
- The logic for determining whether or not to display the background layer and background debris in a colour map with holes disabled was incorrect; unless a map had 32 or fewer colours, these backgrounds would not be displayed. Now it works as described in the v3.6.25.1a history entry.
- Export Log fixes
  - Unsuccessful attempts to fire weapons (usually resulting in a warning beep) were logged as if they were successful. They are no longer logged.
- When starting an offline game with an intrinsic map (Cars, Polar, etc.), the incorrect map was embedded in the recorded game file, resulting in instant desynchronisation upon playback. Past games that were incorrectly recorded due to this bug can now be repaired — see **Features**.
- Bug introduced in v3.6.25.1: The Scheme Editor in the Options menu was unusable due to an inactive Save button. In v3.6.26.4 it was completely disabled due to this. It has now been restored to full functionality.
- The maximum length of the Direct IP entry box has been increased, so that domain names can be used.
- When playing back old replays recorded with old pre-release versions (v3.5β3pre7 to v3.6.18.8), /anon messages were not shown (and the same happened when exporting a log).
- In the Map Editor, clicking the Trash icon then exiting the editor would result in the wrong map being selected. This has been fixed; now you can easily use an entirely empty or entirely full map without having to resort to the kludge of toggling a pixel. (Note that unless you convert such a map to colour with Placement Holes disabled, it will not truly be entirely empty or full when played.)
- Fixes affecting game logic
  - If another worm is damaged during the current player's turn, the game waits for a lull in activity before subtracting the damage points. Normally, this happens when the current player's Worm stops jumping, or lands from the Rope. But if the player was on a certain kind of stationary vertical rope (**see Footnote 1**), the Rope would immediately disconnect the moment the Worm was moved into direct contact with the floor, and the game would pause while the damage was subtracted.
  - Under certain circumstances, a very fast-moving rope, when bounced against a wall, would

dampen its speed even if **Left** or **Right** was being held.

- A glitch was introduced in v3.6.20.1: While walking, if a player switched between holding **Left** and **Right** with no time in between (some keyboards force this even if the keypresses overlap) at the same time as a second condition was satisfied, the Worm would skip as many as 18 pixels in one frame. Export Log now logs this glitch when it is emulated. The following are the two ways in which the second condition could be satisfied:
  - Pressing **Space** with Bungee or Parachute selected
  - Releasing **Shift** after having walked backwards

## Features

- Camera lock (enabled by turning on **Scroll Lock**) now works during one's own turns. It is reset at the beginning of each local turn to prevent accidents or confusion caused by unexpectedly moving off-screen.
- The list of intrinsic maps is now sorted in alphabetical order, and is complete regardless of which missions you've completed.
- Export Log additions
  - Instances of the glide glitch are now logged. (This is where a Worm moving down-left, passing over a pixel of terrain at certain velocity ranges in certain fractional positions, will have its vertical velocity nullified and friction applied to its horizontal velocity.)
  - Instances of the walk skip glitch (in v3.6.20.1 to v3.6.26.4 — see **Fixes**) are now logged.
- There is now a **Repair** feature which can be applied to recorded games. Right-click on a **.WAgame** file and choose "**Repair**", and W:A will attempt to repair it; if successful, a new file will be created with "{repaired}" appended to its name. Currently, only one type of repair is done, for offline games that used an intrinsic map but had the wrong map embedded in the replay due to being recorded with a version earlier than v3.6.26.5 (see **Fixes**). A replay that needs repairing will play back incorrectly, displaying Checksum Mismatches when you pull down the chat bar with PageDown.

## v3.6.28.0 Beta Update (2007.06.29)

### Fixes

- [CS] Occasionally, W:A would freeze while minimised, making it impossible to restore the game and continue playing. It would become necessary to kill the "WA.exe" process.
- [DC] In the front end, pasting text from the clipboard could cause a crash later on if the pasted string had a length divisible by 16 characters.
- [DC] A WormNET server could cause a client-side crash by sending a malformed scheme-configuration string when the client joined a channel.
- [DC] The previous feature "*The precise fuse display (introduced in v3.6.20.1) is now disabled at the minimum Info display level (pressing Delete cycles through Info levels).*" was incomplete. At the minimum display level, fuses that exceeded 3 or 5 seconds (depending on the weapon) were still shown. This was particularly troublesome because the 4-digit fuse could not be hidden when playing back Super Sheep runs in which Sheep Heaven was enabled.
- [DC] A mine with a random fuse that happened to be exactly  $n.00$  seconds would be displayed as " $n.100$ " during playback of replays.
- [DC] The game no longer uses 100% CPU when minimised. (An earlier fix in v3.6.20.1 was meant to do this, but was incomplete and did not work on all systems.)
- [DC] With the slow front end workaround activated, there may now be flicker on certain systems (due to the fix that prevents 100% CPU use). Importing **SlowFrontendWorkaround\_AntiFlicker.reg** (from the **Tweaks** folder) into your system registry may fix this problem, but it may cause the game's front end to use nearly 100% CPU unless minimised.
- [CS] If, while playing a game, W:A is minimised by an external application or by a hotkey such as Alt+Tab, its colour palette will no longer be corrupted upon restoring.
- [CS] The **/me** command now works properly while in the WormNET lobby (i.e., IRC). The formatting has also been changed to include surrounding asterisks.
- [CS] Quit messages are now displayed in the WormNET lobby, along with the quit reason. A quit reason is now sent when hosting a game.

- [DC] **Map Editor**
  - [DC] When loading a PNG map that had been previously resaved within the map editor, its cavern border status would be reset, instead of being overridden by the header as it should be.
  - [DC] When loading a PNG map that hadn't been previously resaved within the map editor, the enabled/disabled status of "Placement Holes" was carried over from the last map. Now it defaults to being disabled.
  - [DC] The Map Editor refused to load PNG maps that didn't have a true black in the palette. Black is now automatically added when necessary, if there is room in the palette.
  - [DC] In the file list box, subfolders with names matching "\*.CUS, \*.IMG, \*.PNG, \*.BIT, \*.LEV" would be listed twice — once as a subfolder with <> around its name, and once as a fake file.
  - [DC] After loading an incomplete PNG file (resulting in the message "PNG Error: Invalid chunk length"), the incompletely-loaded picture would be committed upon exiting the Map Editor. Now, the notice "INVALID MAP FILE" is displayed instead.
  - [DC] The eight mini-thumbnails of generated maps were rendered at 160×58 and then resampled to 120×43, resulting in more aliasing than necessary. Now they are rendered directly at 120×44. (Note that as before, they are not anti-aliased.) The mini-thumbnails also had a mismatch between their clickable area and the area that caused their borders to light up upon mouse-over.
- [DC] Entering a line at least 256 characters long in the host/join chat caused a local crash.
- [DC] If the host of a game chose an intrinsic map (Cars, Polar, etc.), and then someone joined later, the chosen map would not be communicated to them. Thus if the game was started with that map, it would desync.
- [DC] It was possible, sometimes even likely, for certain intrinsic maps (Birthday, Fruity2, Paris, Polar, Shoes, Speccy, and Village) to be initialised with Placement Holes in them. This depended on the random seed; now, a host will automatically avoid seeds that would lead to the presence of Placement Holes.
- [CS] There are some filename inconsistencies between the various Soundbanks on the W:A CD-ROM. Two of them were handled in v3.6.19.7. This version handles a few more variations, in soundbanks including "Cad", "Formula One" and "Russian".
- [DC] The game did not range-check the number of worms per team when loading a WAgame file. Giving this a value greater than 8 (using a hex editor or memory editor) would have bizarre effects due to the resulting access of out-of-range array elements, and may have even caused a crash with certain values.
- [DC] When a text notice appears in-game (e.g., "1x Ninja Rope") it is now shown immediately, rather than being delayed by 1 frame as it was before. Also, the "transparency" dithering effect that is applied to the text is now never purely vertical, whereas before, this depended on the width of the rendered text.
- [DC] In certain circumstances, replay launching (e.g. Playback) would fail with a crash error. This was rare, but consistent for those who experienced it.
- [DC] The game now runs properly from the Czech W:A CD-ROM, whereas before, it would give a "WARNING: No default Flag Found" message upon startup.
- [CS] A compatibility switch for **Wine** has been added, which works around several Wine issues which may prevent large maps from working. To activate the workaround, import the file **NoLandInVram\_On.reg** (from the **Tweaks** folder) into Wine's registry using Wine's Regedit tool.
- [CS] The utility selection hotkey, intended to be the key located between **Escape, Tab** and **1**, is now bound to that key regardless of the currently active keyboard layout. To revert to the old behaviour, using the current layout's grave accent ( ` ) key for utility selection, import **LegacyUtilityKey\_On.reg** (from the **Tweaks** folder) into your system registry.
- [DC] If an error occurred while connecting to an online game, for example if the room was full or if your name was already in use, the mouse cursor would inappropriately remain in the "busy" state.
- [DC] At the Next Round stage, if only players of a single ally remained after others quit or disconnected, the light bulb button and text entry box would disappear, but it would still be possible to enter text into the chat. Now, these two elements do not disappear unless all players except for the local player have quit or disconnected.
- [DC] The Exit button in the Next Round screen is now never greyed out or disabled in any way.
- [DC] If a player was automatically kicked in-game due to a desynchronisation or invalid data, the connection was not closed — meaning that the player would have to wait 3 minutes on their end for the connection to time out (unless they quit manually before the timeout).

- [DC] If a player quits or is disconnected in-game, you will no longer have to wait 60 seconds for them to time-out in the Next Round screen.
- [DC] Since v3.6.19.7, right-clicking the scheme name in the Net Join dialog would erroneously bring up a Windows GUI context menu with an invisible mouse cursor.
- [DC] In the Match Finished screen (where the stats are shown), if the user minimised before the fanfare finished and the music began, the game would crash upon being restored.
- [DC, CS] Fixes affecting game logic
  - [DC] If a player released Mad Cows from a Worm on the Rope, Bungee, Parachute or Jet Pack (by pressing Enter), and then pressed Enter a second time, the Worm would instantly dismount and would not respond to player input for the remainder of the turn and retreat.
  - [DC] It was possible for a perfectly aimed Shotgun to miss, if the target was farther away than the width of a map. For example, Worms at opposite diagonal corners of a map would not be able to hit each other with a gun.
  - [DC] If an external scheme editor was used to make the Petrol Bomb a "zero power" weapon, and an attempt was made to start a game with that scheme, W:A would crash. **(See Footnote 2.)**
  - [DC] It was possible for the Pneumatic Drill to fail when used by one Worm atop another. This happened when the top Worm (the one doing the Drilling) had not left the floor since initial autoplacement or Teleportation directly on land, but the bottom Worm (the one being Drilled) had fallen or landed on the floor.
  - [DC] In a cavern map with Indestructible Borders enabled and no detected available positions for Worm autoplacement, the attempt at autoplacement would fall into an infinite loop, audible as a string of beeps. This could happen after starting a game with an empty (or nearly 100% full) colour map with Placement Holes disabled, if the timer was allowed to expire on the forced manual placement or a CPU team was present. The game now automatically drowns the Worm in this case, which is what was intended.
  - [DC] The crosshair angle for the Blow Torch was misleading; it pointed at a 30° angle, whereas the digging angle is 22.5°.
  - [DC] The v3.6.26.4 Scales of Justice bug fix introduced a new bug. If a dead ally created a "gap" in the original list of allies, the ally at the end of the list would not have any health deducted or added.
  - [DC] It was previously possible for an empty Donor Card to be created. Now an ordinary grave is created instead.
  - [DC] It was possible, when blowing up a large number of Oil Drums and Crates simultaneously, to invoke a bug in the flamelet code (specifically, the code that destroys an old flamelet to create a new one).
  - [CS] It is possible, especially in large maps, for a projectile or flying animal to reach the edges of the coordinate system. In previous versions, passing an edge would result in wraparound or odd behaviour. Now, objects are prevented from going beyond an edge; objects that are player-controlled or respond to wind may turn around and come back from an edge.
  - [DC] Due to unnecessary rounding errors, the Kamikaze deviated from a 45° angle by about 3° upwards when fired down-left or up-right; it also stretched further when going up-left and shorter when going down-right.
  - [CS, DC] A dormant Mine would be stripped of its horizontal velocity upon bouncing on the floor or ceiling. This would happen in situations where the mine was knocked by an explosion, punch, etc., while it was still dormant. (A Mine is dormant for 4 seconds after it has been dropped; during this period, proximity to a Worm will not trigger it.)

## Changes

- [DC, CS] Some extra information is now logged into "palette.log".

## Features

- [CS, DC] The update is now distributed as a self-contained installer. Notable characteristics of the installer are:
  - Automatic detection of Worms Armageddon's install location;
  - Detection of common mistakes, such as attempting to update the TryMedia version or previous installation a Beta update before installing the v3.0 Patch;

- User data preservation: the installer will keep customized settings and teams, schemes, saved levels, replays, etc., contrary to what was done in the v3.0.5.0 Beta installer and v3.0 Patch;
- Automatic download and installation of prerequisites (requires a working Internet connection): the v3.0 Patch and GFX archive updates (introduced in v3.6.22.1) are downloaded as needed from Team17's FTP server ( <ftp://ftp.team17.com/pub/t17/patches/pc/> ).
- [CS] Registry scripts that change game options have been moved to a new **Tweaks** folder.
- [DC, CS] Limitations relaxed or removed
  - [DC, CS] It is now possible to play on PNG maps having dimensions other than 1920×696. A cavern map may now be up to 32504 pixels wide or 32600 pixels tall; an island is limited to being 28408 wide or 30552 tall. The minimum map size is 640×32. A map's width and height must be divisible by 8.
    - In the network join screen, the game now displays a warning message when it begins receiving a map file larger than 512 kB. Also, if the map is a colour PNG, and the image area (width × height) is larger than 8 megapixels, the game will require confirmation from the user to load the map once it has been received. The warning limit for the map's area can be overridden by creating a value named "**MapAreaWarnLimit**" of type REG\_DWORD in W:A's Options key (HKEY\_CURRENT\_USER\Software\Team17SoftwareLTD\WormsArmageddon\Options), which specifies the image area threshold, above which the game asks for a confirmation before loading the image. You can quickly set this value to the default value or disable the warning by importing **MapAreaWarnLimit\_Default.reg** or **MapAreaWarnLimit\_Unlimited.reg** (from the **Tweaks** folder) respectively.
    - If you are using **Wine**, large map support may not work properly without the NoLandInVram workaround. See **Fixes**, above.
  - [DC] It is now possible to play with up to **48** Worms if all players are using v3.6.28.0 or later. Because of limitations in the network protocol of older W:A versions, if the total exceeds **18** Worms, clients using older versions will be shown only 1 Worm in each team and the game will not be allowed to start. Note that most randomly generated 1920×696 maps will not accommodate 48 worms without forcing manual placement, unless the host modifies the map to have lots of Placement Holes (see below; this can now be done by clicking the circled-girder icon in the Map Editor).
  - [CS] It is now possible to customise the initial number of in-game hazard objects (Mines and Oil Drums). The setting can be adjusted in the Scheme Options editor by Shift+clicking the Mine/Oil Drum button. The maximum number is **250**, however this is limited by the rule which forbids two objects from being initially placed too close to each other.
- [CS, DC] W:A launching / command line parameters
  - [CS] People hosting Direct IP games may now offer links in the format **wa://address-of-host**, and launching this link will cause W:A to automatically launch and join the hosted game. This link format supports additional parameters (**See Footnote 3**). A port can be specified using the **wa://ip:port** syntax.
  - [CS] The command line "**WA.exe /host**" will cause W:A to automatically launch and host a Direct IP game.
  - [CS] The **/play** parameter required to play replays is now optional, as long as the replay has a **.WAgame** file extension. This allows associating .WAgame files with WA.exe directly.
  - [DC] The **/playat** parameter will now accept the starting time as an argument in the command line, bypassing the dialog box. With this parameter, playback starts paused. The syntax is: **WA.exe /playat "filename.WAgame" time**
- [CS] Minimising
  - [CS] While the game is minimised, it will flash its taskbar button and produce a standard beep in the following circumstances:
    - At the start of a local player's turn
      - If the player has gone "away" using the /away or /afk command, the game will only produce a standard beep
    - When the user receives a private whisper
  - [CS] The game can now be minimised from both the front end and in-game by pressing **Shift+Escape**.
- [CS, DC] In-game
  - [CS] It is now possible to paste from the clipboard in the in-game chat, using **Ctrl+V** or **Shift+Insert**.

Several other editing hotkeys have been added: **Ctrl+Left** and **Ctrl+Right** move the cursor word by word, **Ctrl+Delete** deletes the word starting at the cursor, and **Ctrl+Backspace** deletes the word before the cursor.

- [DC, CS] The **Home** key, which centres on the currently active Worm, now works regardless of whether it is your turn or not. When held down, it now maintains this centring continuously. The key has no effect during others' turns if the current worm is invisible.
- [CS] Holding **Shift** now causes the mouse sensitivity to be multiplied by **4**. Holding the middle mouse button does the same. With both combined, the multiplier becomes **16**. This is useful (sometimes even necessary) when playing on a very large map.
- [DC] If **M** is pressed during playback, the current frame will be marked as if "Playback at" had been used. Subsequently pressing **R** will fast-forward to that point after restarting the replay. As before, **Shift+R** resets the marker to the first frame of the replay. The marker is temporary and lasts only for the duration of the current playback session.
- [CS] During a game, players may now use **Ctrl+PageDown** to initiate "chat pinning", in which the chat panel is displayed even when it is not "in focus". This allows a player to play while reading what the other players are saying. Since this could give users of v3.6.28.0+ an unfair advantage in situations where there is emulation, in online games with more than 2 players its absence is emulated.
- [CS] The network chat panel can now be resized using **Ctrl+Up** and **Ctrl+Down**. The position is remembered independently for the panel's active and pinned states, but only for the duration of the game.
- [DC] Cursor movement within the weapon panel, and the sliding of the panel when it is opened and closed, is now smooth (as opposed to being updated only 50 times per second).
- [DC] The player colour swatches in the right side of the in-game chat box are now slightly wider.
- [DC] The **Pause** screenshot key now works in the front end.
- [DC] If you have achieved a Gold Medal in a mission, you can now adjust the number of Attempts by left- or right-clicking the number. (A higher number of Attempts generally adds items and/or events to a mission to make it easier.) **[This feature was accidentally disabled in v3.6.28.0. See Features under v3.6.29.0 Beta Update.]**
- [DC] The exact values of the Turn Time, Retreat Time, Round Time, Worm Energy and Health Crate Energy settings are now precisely displayed in all screens of the front end and can be fine-tuned. To adjust them in increments of 1, hold the **Shift** key while left- or right-clicking to increase or decrease the value. Without Shift being held, these settings will cycle through a set of values similarly to how they used to.
  - The Round Time is normally measured in minutes, however it can also be adjusted up to 128 seconds in steps of 1 second. The way this is done is a little strange — you need to go below 0 minutes, and then left- and right-clicking will have a "backwards" effect on the number of seconds.
- [DC] In the Map Editor, you may now fine-tune the number of Placement Holes instead of being constrained to either 0 or 18. This is done by left- or right-clicking the circled-girder icon, which displays the current number of Holes; holding **Shift** allows you to fine tune the value, otherwise it skips from 0 to 18 to 32 to 48 and then to the maximum. The allowed range is 0-300, but hosting a game with more than 18 Holes requires all players to be using v3.6.28.0 or later. If a map is too small to accommodate the requested number of holes, the value will max out; for example, a solid 640×480 map can't have more than 8-13 holes, depending on its random seed; but if it maxes out at 10, further Reseeds will be limited to 10 Holes (and eventually as few as 8) unless you manually increment the count. Holding **Ctrl** while clicking Reseed will force it to try for as many Holes as it can get. **[Due to a bug in v3.6.28.0, the maximum number of Placement Holes was actually 255; any higher number was truncated (equivalent to subtracting 256). See Fixes under v3.7.0.0 Update.]**
- [DC] Various actions involving map rendering, such as clicking a map thumbnail to cycle through randomly generated maps or re-rendering a map preview in the Map Editor, will now be a bit more responsive. The progress indicator — a small flat piechart (not to be confused with the 3D piechart that shows during the loading of a game) — has been removed. It was never very meaningful anyway, and may possibly be reimplemented in a future version.
- [CS] The quick description messages in the front end and some in-game text can be made to use a larger font, to improve accessibility. To enable this feature, import **LargerFonts\_On.reg** (from the **Tweaks** folder) into your system registry.

- [DC] In the "**Playback at...**" entry box, you may now use shortcuts such as "3:" instead of "3:00" for 3 minutes, or "1:." instead of "1:00:00" for 1 hour. Before, the best shortcuts for those were "3:0" and "1:0:0".
- [DC] Using the "**Playback at...**" entry box, it is now possible to start playback in paused (single-step) mode.
- [CS, DC] Games can now be started with just one team, or with teams of just one allied colour. In such cases, the game will only end in a draw (when all teams surrender or are eliminated). This works for both "multiplayer" and "online" games. When an online game is started without anyone else joining, it will act like an offline game.
- [DC] Maps from OnlineWorms (Korean, Japanese, and Chinese Worms) and WWP Aqua (Korean) can now be loaded from W:A's Map Editor. The **land\*.dat** files must be placed underneath **User\SavedLevels** and are loaded just like other maps.
  - Note that WWP Aqua's maps use a full palette of 256 colours. The Map Editor will allow you to load them with the full palette intact, but exiting forces the map to be dithered to 113 colours so that it will be usable in-game.
- [CS] W:A now auto-detects the user's IP address using a reply from the WormNET server. This should make manually configuring the external IP address unnecessary in most cases. The IP address can still be overridden using the "Force IP address" checkbox.
- [CS] Background gradients are now rendered by the game. When a PNG map with more than 96 colours is used, this now replaces the old behaviour of not having a background at all. The gradient is dithered and may include colours from the map's palette; if a 112 colour map is used, the gradient will *only* use colours from the map's palette.
- [CS] In case of an unrecoverable error, W:A will save an error report to the file **errorlog.txt**, and a minidump to **crash.dmp**.
- [DC] In the Host/Join screens, entering **"/v"**, **"/ver"**, or **"/versions"** will display the game logic versions of all players currently present.
- [DC] A rudimentary host/join chat logging feature has been added. Currently, this logs the hosting and joining of games, the player list upon joining, the chat, players joining and leaving, players kicked (in the host's log), and games initiated. GMT timestamps are included for each log entry, and in the filenames of the logs. The logs are stored in **User\Logs**.
- [DC, CS] **Flags**
  - [DC, CS] Flags have been added for seven additional countries for a total of eleven. Extended flags now include [Chile](#), [Serbia](#), [Slovenia](#), [Lebanon](#), [Moldova](#), [Ukraine](#), [Latvia](#), [Slovakia](#), [Costa Rica](#), [Estonia](#), and [China](#).
  - [DC] Extended nation flags are now shown in the host/join screen and in WormNET's list of hosted games.
- [DC] Previously implemented "test versions" can now be accessed. These are game logic versions which, when emulated, enable some options that are not yet official. If you are hosting a game, you may enable and disable the test versions using commands entered into the chat (see below). The game will then explain this mode change to all players present. Newly joining players will be informed if one of these modes is enabled. These modes persist both through multiple rounds and when the host clicks "Play Again". They are mutually exclusive (enabling one will disable others), although TestStuff is a superset of BattyRope. Access to the options enabled by these test versions should not be considered official at this time, as they are planned to be added to the scheme format (among many other new options that may be more useful) and will then be individually selectable, whereas in test versions they are grouped together and attached to a specific game logic version.
  - BattyRope: Toggled by entering **"/batty"** in the chat. Allows the Ninja Rope to stay connected during other players' turns, and also forces Rope Knocking to be enabled.
  - 150% Speed: Toggled by entering **"/150"**, **"/fast"** or **"/speed"** in the chat. Makes everything in-game go 50% faster; the engine's frame rate is changed from 50 fps to 75 fps.
  - TestStuff5: Toggled by entering **"/ts"** or **"/test"** in the chat. Enables BattyRope, Rope Knocking, use of weapons during a rope roll, the Indian Rope Trick, worm selection without ending hot seat time, and skipwalking facilitation (up/down/middle arrow keys act like right-clicking while walking); disables loss of control while roping; doubles the maximum speed for roping and jetpacking, and abolishes the speed limit for projectile motion. Also enables Circular Aiming and Anti-lock Power. **[TestStuff was supposed to include Girder Radius Assist as well, but this feature was accidentally**

disabled.]

- [CS] It is now possible to set the TCP port used for hosting games. This setting is in the Network Configuration screen, and affects both WormNET and Direct IP games. Games hosted on a port other than the default one, **17011**, will be inaccessible to game versions prior to 3.6.28.0.
- [DC] Adjustments to previous features
  - [DC] Right-clicking the Water Level bar in the Map Editor sets the appropriate level for "water drops". However, since the water level is still stored as a percentage, "water drops" are only achievable at certain map heights. At other heights, right-clicking the Water Level bar will result in a "can't click here" beep.
- [DC] Export Log additions
  - [DC] Instances of the "alien" glitch are now logged. (This is where a Worm horizontally hitting a wall at a nearly vertical angle steeper than 87.138° (slope=20) and a vertical speed past the fall damage threshold will stop and twang as if it hit the ground, but will then continue to fall. If the worm fell from a rope dismount, it will not lose control of its turn.)
- [CS, DC] Features affecting game logic
  - [CS, DC] Players may now view the weapon panel for their team at any time, including during other players' turns. (Strictly speaking this change doesn't affect the game logic, but it is tied to the logic version for fairness.)
  - [CS] Chat pinning — see above. (Strictly speaking this change — doesn't affect the game logic, but it is tied to the logic version for fairness.)

## v3.6.29.0 Beta Update (2008.07.28)

### Fixes

- [CS] In **Windows Vista**, if the game was minimised in the front end, attempting to restore it would result in a non-functional black screen. Restoring the game now works, but may be complemented by a corrupted colour palette; minimising and restoring it again usually fixes the problem.
- [CS] Pressing the Apps (context menu) button while a text edit field is focused no longer brings up the Windows context menu (which was non-functional and appeared discoloured).
- [DC] In a combo/listbox (e.g. Levels, Schemes) with too few entries to allow scrolling, moving the mouse wheel down would clear the entire list (whereas moving it up would make the list reappear). Now the mouse wheel does nothing in this case.
- [DC] If the game resolution has been set to a value that the current display driver does not support, in the Options screen it was supposed to revert to 640×480; it did so, but still displayed "Custom Resolution" in the button. Now, it reverts to the highest available legacy resolution (1024×768, 800×600 or 640×480), and the button is synchronised with the reverted resolution.
- [DC] The Language and Resolution list boxes in the Options menu were disabled if there were no teams present (i.e., if the WG.WGT file was missing or empty).
- [DC] If the font "Small Fonts" didn't match the size of the standard English version, W:A would crash when opening the Host/Join screen, and would display the Weapon Options screen incorrectly (widely spaced, with many of the buttons off-screen).
- [CS] After a Quick CPU game, in-game options such as volume and detail level were not being saved.
- [DC] The Map Editor's Import function (which is mostly obsolete) is supposed to show an empty black map while prompting the user whether to Shrink or Crop a bitmap larger than 1920×696, but if Placement Holes had been enabled in the previously loaded map, that map would continue to be displayed. It was also possible for the Import function to crash under certain circumstances.
- [DC] Upon exiting the Map Editor, it would sometimes falsely claim that the map had too many colours (more than 113) and needed to be dithered.
- [CS] W:A would crash if a player tried to join WormNET if someone else was connected with the same nickname.
- [DC] WormNET lobby (IRC)
  - [DC] After W:A was minimised while in the WormNET lobby (especially after a long time), it would often crash upon being restored.
  - [DC] Due to a parsing bug, occasionally random pieces from the user list (and potentially other text from the server) would be printed out of context in lime green. In some cases, the same piece



would be printed repeatedly.

- [DC] Entering a very long line reportedly caused a local crash for some users. We were unable to reproduce this bug, but assuming it is related to the crash in the host/join chat that was fixed in v3.6.28.0 (with a crash-inducing line length of  $\geq 256$  chars), it has now been fixed.
- [DC] In WormNET, if a game was hosted with exactly the same name as another game, only one of them would be listed. The one listed would not necessarily be the same as the one joined by double-clicking.
- [CS] If someone attempted to join a game that was already full, the connection would time out; W:A would also stop accepting connection for that game, making it unjoinable (even if someone left or was booted, making room for new players).
- [DC] The emulation message for a test version recommended downloading the latest version of W:A from <http://wa.team17.com>, even if the test version in question was based on the latest game logic version.
- [DC] In the Host/Join screen, if the host changed the map while a client was minimised, that client would not be able to light up. (This bug happened consistently on some systems, and not at all on others.)
- [DC] The Host/Join screen for a client in a network game now centres the name of an intrinsic map under the picture of the map, rather than left-justifying it.
- [DC] On some systems, a network game started with an intrinsic map (Cars, Polar, etc.) would pop up an "The parameter is incorrect" message and desynchronise. [This did not fix the bug; it only got rid of the error dialog box. See v3.6.30.0 fixes.]
- Some improved or missing Spanish translations were contributed by OutofOrder.
- [DC] In Spanish language mode, the in-game comment for 14+ kills had "LANG\_NUMBER" printed inside it instead of the number of kills.
- [DC] The game used nearly 100% CPU during online play and offline playback (this was linked to the rendering of the chat panel, even when it was hidden).
- [CS] When the game was minimised, sounds from in-game would sometimes play at 100% volume.
- [CS] The sounds "Perfect", "Amazing", "Excellent" and "Brilliant" were being played inappropriately. Due to a bug, they were never being played as they were intended to — but enabling the "correct" functionality caused them to be played after every turn where the total damage dealt from an exploding projectile was greater than 50% of the maximum damage possible from such an explosion, thus altering the gameplay too much. They have been currently completely disabled.
- [CS, DC] In a game where the local player had more than one team of the same colour, if the weapon panel was opened when it was not the local player's turn, and kept open, the panel would become "stuck" during the local player's turns (of any of its teams except the first of that colour), and attempts to access the panel would result in a second, glitchy panel appearing. (The "stuck" panel could only be closed when it was not the local player's turn, or automatically at the beginning of the local player's first team's turn.)
- [CS] When opened at certain times in team games, the weapon panel wasn't being redrawn.
- [CS] The "Tools" terrain will now appear with a correct background.
- [CS] The default grave "Symbol" (User\Graves\symbol.BMP) had a non-transparent background, nearly but not quite black. This fix does not affect teams that already use the old version of the "Symbol" grave — to take advantage of it, such teams must be edited to reload the grave file from disk.
- [DC] In playback of recorded game files, custom soundbanks were being ignored and replaced with the default soundbank.
- [DC] The "ally group / team colour" fields were not range-checked when loading a WAgame replay file. Playing back replays with hacked team colour fields could result in crashes and strange or unpredictable behaviour. W:A now refuses to play back a WAgame file with out of range team colour values. Range checking has also been added to the "online player slot / CPU intelligence" field.
- [DC] Replays of "online" games that were actually played offline would play back with checksum errors.
- [DC] In an Exported Log, the total turn times included turn time used during Worm placement. (This did not always make a difference, because the 10 seconds of "turn time" during placement are preceded by Hot Seat time). Also, for each worm placed, 0.02 second was being added to the total retreat time.
- [CS] Crashes
  - [CS] W:A would sometimes crash due to the front end receiving focus while a game was in progress. This bug was quite rare, but on the systems on which it occurred, it did so regularly.
  - For some users, W:A crashed upon starting a game (during the piechart loading stage).
  - [CS] With ambient music enabled, W:A would sometimes crash upon starting a game (after the piechart loading stage had finished).

- [CS] Having a 24-bit bitmap image in the "User\Flags" or "User\Graves" folder will no longer crash the game.
- [CS] A Wine compatibility change has been introduced, which works around a crash with some Wine configurations.
- [CS] If W:A fails to initialize the video mode, it will now display an error message instead of crashing.
- [CS] W:A now works on some virtual machines without requiring additional guest-side software (e.g. Guest Additions for VirtualBox).
- [DC] TestStuff
  - [DC] Girder Radius Assist was meant to be enabled, but was not. This feature will be delayed until it is added to the scheme format or TestStuff6.
  - [DC] There was a bug in skipwalking facilitation. If a player held Up or Down while walking and then shot the Ninja Rope (while continuing to hold the Left/Right and Up/Down arrow keys), the rope would not extend or retract until Left/Right had been released.
- [DC, CS] Fixes affecting game logic
  - [DC] If a roping Worm was damaged or skimmed water exactly at the same moment as its rope attached, and if its vertical velocity component did not exceed a certain speed, the rope would successfully attach (whereas in other circumstances the damage or skim would destroy the Worm's rope and result in a loss of control).
    - It was possible to continue roping after a skim. (This kind of skim is revealed by the sound effect and slight loss of speed.) This ability has been preserved.
    - With the "invincible Worms" option enabled, it was possible to survive a explosion and continue roping. This glitch has been fixed.
    - With BattyRope enabled, if a Worm was fatally damaged at the same moment as its rope attached, it would cause the game to fall into an endless loop; the Worm would continue hanging from the rope with zero health, and the next turn would never begin.
  - [DC] Bug introduced in v3.6.25.1: With Stockpiling or Anti-Stockpiling enabled, it was possible for two types of "invalid" weapons to appear during a Crate Shower: Strikes (in a Cavern landscape), and super weapons (with super weapons disabled in the scheme).
  - [DC] When "Draw Round" was activated in an offline game before all worms had been placed, stockpiling carried across an additional 1× Teleport for the team that was active when "Draw Round" was activated. This only applied to schemes with manual placement and either stockpiling or anti-stockpiling.
  - [CS] When landing from a Jet Pack directly on the terrain, the worm's sprite was not updated to reflect the land slope.
  - [CS] If a worm had been poisoned during the turn directly before Sudden Death and the Sudden Death action was set to be a nuclear explosion, the nuclear explosion poison was not being added to that worm's poisoned status.

## Features

- [CS] The game has been fully translated to **Russian**, thanks to Mr.X's effort. W:A uses a custom encoding for Cyrillic characters — characters that do not have visually identical Latin characters were placed in the unused code points.
- [CS] In-game sound effects are now played in **stereo**. Stereo effects can be disabled or reversed using the **StereoEffects\_Disabled.reg** and **StereoEffects\_Reversed.reg** registry tweaks respectively. The intensity of the stereo effects can be adjusted by tweaking the **StereoFactor** value in W:A's registry options — higher values augment the stereo effects, lower values attenuate them, negative values reverse the channels; 65536 (0x10000 in hexadecimal) is the default.
- [CS] A **/quiet** (or **/q**) command-line option has been added to facilitate processes such as batch replay log extraction. This option suppresses various message boxes and progress windows, and disables bringing console windows to the foreground.
- [DC] If you have achieved a Gold Medal in a mission, you can now adjust the number of Attempts by left- or right-clicking the number. (A higher number of Attempts generally adds items and/or events to a mission to make it easier.) [This feature was meant to be included in v3.6.28.0, but was accidentally disabled.]
- [DC] The Scheme combo box now allows you to navigate to subfolders under the **User\Schemes** folder.
  - [DC] The 13 intrinsic schemes (Intermediate, Pro, Blast Zone, etc.) have corresponding scheme

filenames beginning with "{nn}". These are "fake" scheme files; they are placeholders for the intrinsic schemes. In the combo box the "{nn}" will not be displayed, and the intrinsic schemes' names inside "[ ]" brackets will be substituted for the filenames; you may move these placeholder files to whichever folder you want underneath **User\Schemes**. If these files are deleted or moved outside the **User\Schemes** folder, they will be recreated by W:A on start-up.

- [CS] The Scheme and Map combo boxes now automatically refresh every time they are opened. This allows adding and selecting a new scheme or map file to the folder without having to navigate to a different folder or re-open the current screen.
- [CS] W:A will now attempt to automatically forward the port used for hosting using **UPnP** when hosting WormNET and Direct IP games. A supported operating system and configured UPnP-compliant routing device are required for this to succeed. This behaviour can be disabled in the network options dialog.
- [CS] The player list in the WormNET IRC lobby has been made taller.
- [CS] Players in the WormNET IRC lobby are now sorted alphabetically.
- [CS] A "Snooper" pseudo-rank has been added for WormNET. Snooper users will be displayed at the bottom of the user list.
- [CS] Flags have been added for [Colombia](#), [Ecuador](#), [Uruguay](#) and [Venezuela](#).
- [DC] In the Host screen, entering the command **"/u"** or **"/url"** will now copy a **wa://address-of-host** URL into the clipboard. Additional parameters are automatically included if necessary, including Game ID, Scheme, and Password. Other players will be able to join your game directly by clicking this pasted URL, even if you hosted from WormNET.
- [CS] Network games are now automatically reopened between matches. This allows new players to join the next match, if they are given the URL provided by the **"/url"** command. This works for games hosted on WormNET or by Direct IP, and only works in the main host/join screen. Note that W:A will not re-add the game to the game list for WormNET games.
- [CS] It is now possible to play a match which lasts exactly one round even in the event of a draw.
- [CS] "Random worm order" has been added as a third "Worm Select" option. Enabling this mode will cause a team's worms to be selected randomly every time the team gets a turn, instead of cycling through in a fixed order.
- [CS] It is now possible to specify the amount of Jet Pack fuel, however, this can currently only be done using external scheme editors. The Jet Pack "power" setting must be set to 5 plus the desired amount of fuel. A setting of 5 (0 fuel) means infinite fuel.
- [CS] Holding **Shift** while activating the camera **Scroll Lock** function will cause it not to be deactivated at the beginning of your next turn.
- [CS] Holding **Control** while activating the camera **Scroll Lock** function will make mouse movement not move the game camera, unless the left mouse button is held down. Note that on some systems, Ctrl+Scroll Lock (without Shift) is a reserved system hotkey, and is thus only accessible with the previous option.
- [CS] The phone icon will now no longer block the off-screen pointer of a Super/Aqua Sheep.
- [DC] Pressing the R key to restart playback of a recorded game will no longer incur a delay for reloading the terrain, provided there have been no terrain changes (explosions, girders, etc.)
- [DC] It is now possible to use the "chat" in offline games. While the chat bar is pulled down, the game will be paused. All messages typed will be displayed and recorded in the .WAGame file as "anonymous" messages.
- [CS] Added a new section to the ReadMe enumerating important additions in the Beta versions — **2.0 Supplementary Documentation**.
- [CS] Changes affecting game logic
  - [CS] The contents of crates is now determined when the crate is picked up, destroyed, or viewed with a Crate Spy utility, rather than when the crate is created. This prevents "crate spy" cheats, making it practically impossible to predict the contents of a crate in an online game.
  - [CS] Similarly, when the scheme setting for mine fuse is set to "random", the fuse of pre-placed mines is determined when the mine is triggered.
  - [CS] Laser Sight can no longer be locally enabled using a memory editor without causing a desync.
    - **Note:** like all game logic changes, these changes only affect the latest logic version, and will not function when emulating previous versions, including TestStuff versions. If you would like to exclude the possibility of cheats for earlier W:A versions, make sure the game is not emulating an older logic version.

- [CS] When a Worm is activating Armageddon from Rope, Bungee, Parachute or Jet Pack, the camera will no longer focus on the centre of the map.
- [CS, DC] Export Log additions
  - [DC] Turn endings are now logged, along with the turn time and retreat time used during each turn.
  - [CS] Team and player names are now printed alongside the turn time totals at the end of the log.
  - [CS] The amount of damage dealt to teams on every turn is now logged.
  - [CS, DC] In the player team list, CPU teams are now identified, including skill level. Since CPU skill level can be "fractional" in Missions, it is expressed with two decimal places, e.g. "[CPU 5.00]".
  - [DC] Used Jet Pack fuel is now logged. This is tailored to TCB (The Challenge Base) Jet Pack challenges, and is designed to replace manual counting of used fuel; it is rounded to the nearest integer fuel unit in the same way. The total fuel is reported at the end, but this total is reset every time Teleport is used (it is assumed that this is a teleport back to the start). If a weapon is fired from the Jet Pack, it is assumed that 30 units of fuel were used (this is tailored to challenge #60 - Fly For Punctuation); the actual fuel used before the retreat is noted in parentheses, but 30 is added to the total.
  - [CS] Automatic Parachute activation is now logged.

## v3.6.30.0 Beta Update (2010.10.26)

### Fixes

- [CS, DC] Hardware and Operating System compatibility
  - [CS] Windows 98/ME compatibility, which was accidentally broken in v3.6.29.0, has been restored.
  - [CS] Minimisation support in the front end in Windows Vista was incomplete (upon restoring, it was not possible to interact with UI elements using the mouse).
  - [CS] W:A now uses a new method of restoring the palette, which has been found to be more effective on Windows Vista and Windows 7. Should the display palette become corrupted, the user can try to restore it manually in-game by pressing **Shift+Pause**.
  - [CS] A new compatibility setting for **Wine** has been added, **Force Wine virtual desktop** (ForceWineVirtualDesktop\_On.reg). When this setting is enabled, W:A will automatically relaunch itself in a virtual desktop, by running "explorer "/desktop=640x480,Worms Armageddon" [WA.exe's *full command-line*] /novirtualdesktop". (The /novirtualdesktop switch is used to temporarily override the effect of the setting, thus preventing W:A from entering into an endless loop.)
  - [CS] A new compatibility setting for **Wine** has been added, **Use desktop window** (FrontendUseDesktopWindow\_Enable.reg). Enabling this setting causes W:A to use the desktop window for the DirectDraw SetCooperativeLevel call, which fixes front end display problems when running under Wine. Note that enabling this option may prevent minimization during the game from working - Wine users are advised to use a virtual desktop instead.
  - [CS] When W:A v3.6.30.0 or later is run under Wine for the first time, it will offer to enable Wine-specific compatibility settings (ForceWineVirtualDesktop, LandInVram\_Disable, SlowFrontendWorkaround\_Off and FrontendUseDesktopWindow\_Enable).
  - [CS] W:A's associations are now registered automatically by the Beta Update installer. This means it is no longer necessary to run W:A at least once as Administrator after installing a new Beta Update.
  - [DC] A new compatibility setting has been added, **Enable double buffering** (enabled by default). Disabling this setting resolves in-game flickering problems under VMware.
  - [DC] When W:A v3.6.30.0 or later is run under VMware for the first time, it will offer to enable VMware-specific compatibility settings (InGameDoubleBuffering\_Disable, SlowFrontendWorkaround\_Off and FrontendUseVRAM\_Disable).
  - [DC] In VMware, tab stops in the front end were not being activated by default.
  - [CS] When W:A v3.6.30.0 or later is run under VirtualBox for the first time, it will offer to enable VirtualBox-specific compatibility settings (SlowFrontendWorkaround\_Off and FrontendUseVRAM\_Enable).
- [DC] Slow front end workaround
  - [DC] There are some video cards/drivers under which **SlowFrontendWorkaround\_On.reg** does not fix W:A's "slow front end" lag. It has been found that "SlowFrontendWorkaround\_AntiFlicker" fixed the problem in at least one of these cases (with a GeForce 8800GTS 512MB). To reflect the wider

use of this version of the slow front end workaround, it has been renamed. It is now enabled by importing **SlowFrontendWorkaround\_Alternative.reg** (from the **Tweaks** folder) into the system registry, or by selecting the **Alternative** setting on the Advanced Options screen. Also, **SlowFrontendWorkaround\_On** is now the default mode that W:A will assume if none of the SlowFrontendWorkaround tweaks have been imported into the registry. Note that the Alternative mode will most likely use the maximum CPU of one system core, whereas On and Off modes have lower CPU usage.

- [DC] Previously, enabling SlowFrontendWorkaround would break the intro fade (assuming /nointro was not used). Now, it is temporarily disabled to make the fade work properly.
- [DC] An effect which was previously toggled by the SlowFrontendWorkaround setting is now available as a separate option: **FrontendUseVRAM\_Disable.reg**. This prevents W:A from using video memory in the front end, which may improve compatibility on certain systems.
- [CS, DC] Timer workaround
  - [CS] On some system configurations, the high-resolution timer would occasionally skip backwards by a minuscule amount, which caused W:A to enter a nearly-infinite loop (if the **TimerWorkaround\_On.reg** tweak wasn't being used). W:A now checks for this condition and prevents a lock-up from happening.
  - [DC] Bug introduced in v3.6.28.0: On some systems with multiple CPU cores, the weapon panel would not open and close properly. When the mouse was moved, the panel would go "wandering" randomly, eventually going off the side of the screen, sometimes coming back later. This was a very rare but consistently reproducible bug on some systems. If you experienced this bug, it is still recommended that you enable the timer workaround (either using the Advanced Options dialog, or by importing **TimerWorkaround\_On.reg**, from the **Tweaks** folder, into your system registry) because the same timer issue that caused the dancing weapon panel bug can also cause screen lag (irregular, jumpy passage of time within the game).
- [CS] Keyboard hotkeys & character tables
  - [CS] Entering international characters not present in W:A's character table sometimes incorrectly resulted in Cyrillic characters.
  - [CS] It was not possible to enter some international characters in the front end due to W:A interpreting some Ctrl+Alt+... keystrokes as Ctrl+... keyboard shortcuts.
  - [CS] The Utility key is now determined based on the keyboard OEM scan code, which should not change across typical system configurations. The previous method, introduced in v3.6.28.0, used the key that generates the ` character on the U.S. English keyboard layout, but required this layout to be installed on the user's PC.
- [DC, CS] Mouse input
  - [CS] When moving the mouse cursor directly from one hyperlink to another, the highlighted hyperlink was not updated.
  - [DC] A bug in v3.6.29.0 caused the mouse cursor to jump (319,399) pixels down-right at the beginning of every game.
  - [DC] Another bug introduced in v3.6.29.0 also caused the mouse cursor to jump. This happened if the chat box was opened during an offline game session (a feature introduced in v3.6.29.0) while a Worm was being manually placed or aiming a Teleport/Girder/homing weapon. Any mouse motion occurring while the chat box was open would be stored up, and when the chat was closed, the mouse cursor would jump.
  - [DC] A bug introduced in v3.6.28.0 caused the camera to be horizontally locked when emulating v3.0 in a cavern terrain.
  - [DC] While holding the middle mouse button to speed up cursor movement in-game, right-clicking to open the weapon panel would cause the status of the middle button to be forgotten.
- [CS, DC] Sound effects
  - [CS] The front end ambient sound loop was not being played when the game was started with the **wa://** or **/host** command-line parameters.
  - [DC] Due to a bug introduced in v3.6.29.0, it was possible for in-game looped sound effects (such as the Dynamite fuse and the Mole Bomb's digging) to be stopped prematurely when other sounds were played. This was more likely to happen on some systems than others, depending on how quickly the DirectSound backend detected the finishing of a sound being played (the more lag, the less likely the bug).

- [CS] The stereo panning effect was not applied to sounds when the camera was moved while the game was in single-step mode.
- [CS] On systems with a configured nation not explicitly recognized by W:A, a flag, fanfare and soundbank was not being selected for intrinsic teams and default values.
- [CS] Fanfares for nations not explicitly recognized by W:A will now default to "Simple", in conformance with nations explicitly recognized by W:A but not having an appropriate nation fanfare.
- [CS] The "Russian" soundbank is no longer selected by default for Croatia.
- [DC] Subfolder support for schemes and maps now works more cleanly
  - [DC] Clicking subfolders no longer changes the name in the edit box.
  - [DC] When entering a folder with the keyboard (Enter key), the first file is now selected by default.
  - [DC] Pressing Enter or clicking on a file directly after it has already been loaded will now reload the file if its timestamp or size has changed; otherwise it will close the drop-down list box as before.
  - [DC] Subfolders with names beginning in ".." are no longer hidden.
- [DC, CS] Schemes
  - [DC] Loaded schemes no longer have the ".wsc" extension added to them in the combo edit box.
  - [CS] After deleting a scheme in the offline multiplayer screen, the text in the scheme selection drop-down wasn't being updated despite the fact that the game loaded the Intermediate scheme.
  - [DC] When saving a scheme in a subfolder, the overwrite confirmation dialog would incorrectly be displayed if a scheme with the same filename existed in the main Schemes folder. No confirmation dialog would appear when overwriting a scheme in a subfolder.
  - [DC] When attempting to delete a scheme that didn't exist, the delete confirmation dialog showed up anyway, implying that the file existed.
  - [DC] In the Options Menu, the scheme edit box now scrolls for long scheme filenames. It also has more room to show the scheme name below the edit box.
  - [DC] Loading a scheme with "random worm order" correctly updated the required version, so that players with a version not supporting that feature would be crosshatched in red in the host's player list. However, if the host toggled this feature directly using the Worm Select button, the required version was not updated. This meant that a game could be started that was supposed to have random worm order but didn't, or alternatively that a player could be falsely flagged as being unable to play, preventing the game from being started.
  - [DC] Loading an intrinsic scheme (such as Intermediate) did not update the required version. This meant that if the scheme beforehand was unsupported by any players present, their names would continue to be crosshatched in red even though intrinsic schemes are supported by all versions of W:A going back to v3.0.
- [CS] WormNET
  - [CS] The WormNET IRC client has been made more conformant to the IRC standard.
  - [CS] W:A would sometimes fail to reply to IRC PING messages with a PONG, and would time out should there be no outgoing traffic for several minutes.
  - [CS] When getting kicked or banned from WormNET, W:A will now display an appropriate message (including the moderator-specified reason), instead of a generic disconnection message.
  - [CS] Sometimes lines containing colour codes weren't being wrapped correctly in WormNET chat.
    - The fix for this issue caused some changes in the way HTML was displayed. The file ServerList.htm has been updated to display correctly on all W:A versions.
  - [CS] WormNET private message formatting codes are now parsed and displayed for sent messages.
  - [CS] In the WormNET, host/join and LAN lobbies, wrapped lines of chat could become partially obscured when the scroll bar was created.
  - [CS] The Snooper detection, introduced in v3.6.29.0, now ignores spaces in the "version" field.
  - [CS] Clients not having a valid IRC "real name" field will no longer be displayed with an UK flag. The "UK" two-letter country code, popularised by 3rd-party applications, is still supported but is deprecated (the correct ISO 3166-1 alpha-2 code is "GB").
  - [CS] Received IRC private actions are now displayed correctly (these can only be sent using a snooper or IRC client at the moment).
  - [CS] W:A no longer automatically replies to any special messages (such as CTCPs) sent to WormNET channels.
  - [CS] A scrollbar was sometimes incorrectly placed on the WormNET channel list screen.
- [DC, CS] Host / join

- [CS] When hosting, W:A will no longer accept forged chat messages from clients in the host/join screen. It will also forward private messages only to the recipient, thus making host/join whisper spying by clients no longer possible.
- [CS, DC] When hosting non-WormNET games, W:A will now check the game ID. This will prevent games hosted via Direct IP to be accidentally joined by players trying to join a stale WormNET game.
- [CS, DC] The resolution of network timers in the connection dialog and match finished screen has been increased. This considerably improves the speed of joining games.
- [DC] If the connection process was cancelled at the wrong moment, you would be left with an hourglass cursor.
- [DC] When exiting a game that was hosted or joined via "Direct TCP/IP" in the Network Choice screen, you will now be returned to that screen instead of the LAN Lobby.
- [CS] W:A would exit silently if it failed to open certain files from the game CD. Now it will display a message and create an error log.
- [DC] When a player left, it would correctly clear all the other players' light bulbs on the clients' sides; however, on the host's side the light bulbs would remain lit. In the online next round screen, the light bulbs would at least remain synchronised in this situation, but the host's light bulb would stay lit on all sides after a player left (whereas the clients' light bulbs would be cleared).
- [DC] Bug introduced in v3.6.19.7: When the host changed maps, each client's light bulb would only be cleared on their own end and on the host's end.
- [DC] In v3.6.29.0, pressing Tab in the host/join screen would switch from the edit box to the scheme combo box; but once focused on the scheme box, Tab would no longer work.
- [DC] Kicking
  - [DC] When being kicked by a host using W:A v3.5 or later, a client would usually not process the kick message and would state "The connection to the network has been lost" instead of "The host has removed you from the game." This was a client-side bug and has now been fixed.
  - [DC] When kicking a player, the host did not hear a sound effect. The same went for the player being kicked. Both will now hear the same sound effect that joined players hear when a player leaves, disconnects or is kicked.
- [DC] The "INVALID MAP FILE" and "Please wait while the level file loads" notices did not restore after minimising.
- [DC] If you're a client, minimised while the host clicks "Play Again" or "New Match", you will no longer crash; instead, the game will flash its taskbar button and produce a standard beep. Likewise, the same will now happen if the host starts the game while you're minimised (which is normally not possible).
- [CS] If you were disconnected from a network game (due to a network failure or the host quitting), in-game options such as volume and detail level changed during that game weren't saved.
- [DC] If a host using v3.6.29.0 loaded a scheme that was externally edited to have custom Jet Pack fuel, and the Jet Pack power byte was set to 128 or higher (129 stars or higher; 123 fuel units or higher), and player(s) using an older version were present, the game would silently emulate the old version, with default Jet Pack fuel (30 units), instead of printing the proper error message and highlighting the older-version player(s) in red.
- [DC] The "Twang1" sound, played when a player disconnects, was used only in the initial host/join screen, not in the next round or match finished screens.
- [DC] Desynchronisation issues
  - [DC] On some systems, a network game started with an intrinsic map (Cars, Polar, etc.) would desynchronise on the client side when the game was started. The bug was always latent in W:A, but first manifested in v3.6.28.0. There was a workaround in v3.6.29.0 regarding this bug, but it did not fix the desynchronisation.
  - [DC] If a multi-round network game was played on an intrinsic map, and the host did not manually change the map before starting Round 2, the game would desynchronise. The same would happen if a new match was started after one that had been played on an intrinsic map, and the host did not manually change the map before starting the first round of the new match.
  - [DC] Editing certain scheme options in an external scheme editor (or hex-editing the .WSC file directly) could cause problems. In particular, the Sudden Death Water Rise Rate, Mine Fuse, and Fall Damage settings could be edited to normally out-of-range values. However, once the

scheme was loaded in W:A, going into the Options Editor would automatically reset the values if they were out of the normal range. If a host went into the Options Editor, the values would be reset, but the Cancel button would be operational — though using this button would be unexpected when no manual change had been made, and pressing Exit would commit the automatic changes and undo the externally edited options. What was worse was that if a client went into the Options Editor to view the settings, they would be reset on the client's end. This would result in a desynchronisation if a game was started with this scheme.

- Sudden Death Water Rise Rate was reset to Medium (2) if it was anything other than Off (0), Slow (1), Medium (2), or Fast (3). Nonstandard values of this setting change the water rise rate nonlinearly.
  - Mine Fuse was reset to 3 seconds if it was not 0-3 seconds or Random. Nonstandard values of this setting can go from 5-127 seconds.
  - Fall Damage was reset to Off (0) if it was not On (1). Nonstandard values of this setting change the strength of the fall damage nonlinearly.
  - Some other scheme settings were reset to default values if they were out-of-range, but this was not important because the out-of-range values were not special and thus were not commonly used.
- [DC, CS] In-game network play
    - [DC] A disconnection of a spectator (a "player" with no team) was not noted in the chat box, either during the game or in replay (or exported log).
    - [CS, DC] W:A would often display a 10-second countdown with the text "Waiting for players" at the end of a network game, waiting for a confirmation network packet that was never sent.
    - [CS] Previous versions of W:A silently discarded front end network packets while in-game. This could cause chat lines to be lost. W:A now queues front end network packets while in-game and processes them when W:A re-enters the front end.
    - [DC] Games with three or more players
      - [DC] A bug in v3.6.29.0 caused all players to desynchronise when one player quit or disconnected, if the disconnection was detected by the host between turns.
      - [DC] Another bug nearly always caused all players to desynchronise when one player quit or disconnected on their first turn. This bug can probably also occur later in the game, but that aspect of it is poorly understood and hard to reproduce (though the fix would apply in that case as well). Note that despite the similarity to the other desynchronisation bug fixed in this Beta Update, this bug dates back to Worms2.
      - [DC] When a client disconnected, the host would see the reason for disconnection but other clients would only see a generic disconnection message. The more detailed disconnection reason (timeout, network drop, desynchronisation) was being recorded, but not displayed.
      - [DC] The disconnection of spectators was not recorded at all by the host.
    - [CS] In network games, the volume slider in the Escape menu wouldn't slide if it was the local player's turn and the in-game mouse pointer was active (during initial worm placement or if a point-and-click weapon was selected).
    - [DC] The grey progress indicators displayed next to player names during loading will now update more smoothly and responsively.
    - [DC] More validation is now done on data received over the network.
    - [DC] If, within the same instance of WA.exe, first a game logic version earlier than 3.5 Beta 3pre13 (most likely 3.0 or 3.5 Beta 2) was emulated (i.e. legacy buggy Bungeeing Worm sprite), and then a version of 3.5 Beta 3pre13 or later was emulated (i.e. with the Bungeeing Worm sprite fix) — or vice versa, the latter first and then the former — and then a weapon was used while the Bungee was attached, it could cause a desynchronisation.
  - [DC, CS] Recorded games / replays
    - [DC] The passage of game time between turns and after the end of the game is now recorded, like it was before v3.6.19.15. This means that chat messages communicated between turns or after the end of a game will no longer pile up into one frame (unless they were communicated during a period of network lag).
    - [DC] When opening a recorded game that points to an intrinsic map, W:A now verifies that the intrinsic map exists. Previously, if it did not exist, the map from the last game would be used and playback would desynchronise.



- [CS] After a fast-forward while playing back a recorded game (either when using the "Playback at" command, or when seeking to a marked position), the chat panel was not updated. If it is open, the chat panel is now also updated during the fast-forward — if the negligible overhead is undesirable, it can be avoided by closing the chat panel.
- [DC] The screen capture function had a memory leak. This was most evident when using the Export Video feature, but happened when taking a screenshot as well. Approximately 278 kilobytes were leaked every time a frame was captured. Capturing a very large number of frames (on the order of thousands or more, depending on free RAM) would eventually cause W:A to crash.
- [DC] Export Log will now print "Game Ends - Alt+F4 pressed" if this is likely to have been the method of quitting, whereas before it would say "Game Ends - End of file" in this case.
- [DC] More data validation is now done when playing back recorded game files.
- [DC] Ever since the identity of the local player was added to the replay file format in v3.6.19.17, the game has tried to detect the local player when playing back older replay files. However, there was a minor bug in the message given when there was more than one spectator and all that could be deduced was that one of them was local.
- [DC] The v3.6.22.0 threshold drowning worm emulation bug (see v3.6.26.4 fixes) is now detected during playback (and Export Log) in most situations. This prevents a Checksum Mismatch error from being printed in situations where the checksum was actually locally correct.
- [DC] Messages, strings, and fonts
  - [DC] The Blow Torch weapon was named "BlowTorch" in game, breaking consistency with the front end and with Worms2, where it is named "Blow Torch".
  - [DC] Some "Morse Code" messages in Missions were being truncated when displayed in game, in particular some of the messages in the Spanish translation.
  - [DC] The Spanish translation for "cyan" was "azul-verdoso", which has now been replaced with "cian".
  - [DC] In the Missions screen, one of the mission names was long enough in the Spanish translation to be wrapped into two lines and cropped. The on-screen space for the mission name has been enlarged to rectify this.
  - [DC] The Spanish punctuation marks ¿ ¡ were present in the front end's font set but were not available in-game.
  - [DC] Three Spanish messages and one Portuguese message had exclamation mark related errors.
  - [DC] In the front end, the three largest fonts no longer crop the bottom pixel row of the lowest-reaching character glyphs.
- [CS, DC] Translations
  - [DC] In Spanish, Crate Spy has been renamed from "Caja espía" to "Espía de cajas" (correction by "OutofOrder").
  - [CS] An incorrect character was fixed in the Spanish translation of the Basic Training #8 description text.
  - [DC] An incorrect character was fixed in the Russian translation of a 2-worm kill comment.
  - [DC] Some Morse code tips in Spanish were missing for Mission 9: "Water Surprise", Mission 14: "Super Sheep to the rescue!", and Mission 20: "Rumble in the Farmyard", with translations provided by "OutofOrder".
  - [CS] Apostrophes in Italian in-game messages were being incorrectly displayed.
  - [CS] The Italian translation in the in-game quit confirmation dialog incorrectly displayed "SÃ" instead of "Sì".
  - [CS] The **Russian** translation was updated with corrections from "Shtirlitz".
- [CS, DC] Free RAM & disk space
  - [CS] W:A will now display warnings on start-up when the current directory is not writable, or if there is little free disk space on the current drive.
  - [DC] Some minor memory leaks were fixed.
- [DC, CS] Miscellaneous
  - [CS] Some versions of W:A installers would not create the User\Teams directory, which caused W:A to fail to save the team file. W:A will now create this subdirectory if it doesn't exist.
  - [CS] W:A would sometimes lock up after creating a console window, which is used to display the progress of operations such as exporting a log.
  - [CS, DC] The team health bars were sometimes incorrectly sorted for minute differences in total team

health points.

- [DC] Bug introduced in v3.6.23.0: Precise fuse timers, a playback feature added in v3.6.20.1, could not be turned off by cycling through name tags with the **Delete** key, if Invincibility was enabled in the scheme.
- [DC] In v3.6.19.7, the ability was added to cycle both forward and backwards through randomly generated terrains by clicking and Shift+clicking the maps' thumbnails, respectively. However, the addition of this feature introduced some bugs. It was possible to get trapped in a loop, where only low-detail terrains would be generated, or (rarely) terrains within only one of the templates (e.g., double-cavern, single island, etc.) would be generated. The only way to get out of the loop was to leave that dialog screen and come back to it. In v3.6.20.1, this problem was addressed by forcing only maximum-detail terrains to be generated. It was still possible to get trapped in a template loop.
  - [DC] The forward and reverse sequence through randomly generated maps was different every time you entered a dialog screen in v3.6.19.7 to v3.6.29.0. Now, the map before and after a given map in the Click / Shift+Click sequence will always be the same.
  - [DC] If a map had been loaded through a means other than local clicking (e.g., loaded by a remote host in an online game, or loaded within the Map Editor and then shown as a thumbnail) then the first Click or Shift+Click would leave that map behind, without returning to it. This is now fixed.
  - [DC] Access has been restored to the full range of detail levels available in v3.0 to v3.5 Beta. You will no longer be limited to maps of only maximum detail, as you were starting in v3.6.20.1.
  - [DC] It is no longer possible to get trapped in a template loop when clicking / Shift+clicking the large map thumbnail.
  - [DC] There are now 2,147,483,648 available maps in the large thumbnail's cycle, and 2,147,483,648 maps for each template within the Map Editor (i.e., 17,179,869,184 maps). If you were to click 2,147,483,648 times in a row, you'd return to the same map from which you started.
- [DC] In the Network Choice screen, the worms' eyes and eyebrows in the LAN and WormNET buttons were transparent.
- [DC] In the Team Editor screen, double-clicking the team name's question mark button was supposed to cause all worm names to be randomly generated at once. However, this feature was broken in v3.6.19.7. It has been restored to working order.
- [DC] When rapidly clicking the "draw holes" or "draw tunnels" buttons in the Map Editor, the same random seed would be used multiple times in a row, changing at most only once per second.
- [DC] With the "BattyRope" option enabled (either explicitly or as part of TestStuff), a Worm with its Jet Pack persisting between turns would have its Fuel display overwrite its Health display on screen. Now the Fuel is inserted below the Health.
- [DC] Taskbar System Menu
  - [DC] It is now possible to use the System Menu when minimised from the front end. This menu is opened by right-clicking W:A's Taskbar button. This allows you to Close the game without having to restore it first (in most game modes).
  - [DC] When W:A was minimised during a replay playback session using Alt+Tab or Alt+Esc or some other indirect trigger, right-clicking W:A's Taskbar button crashed the game.
  - [DC] The mouse cursor is no longer hidden in the System Menu.
- [CS, DC] Crashes
  - [CS] Pressing **Escape** in some front end screens (Mission, Training and Deathmatch) caused abnormal minimization, often followed by a crash.
  - [CS] W:A would crash when it tried to display the large map size warning while being minimised.
  - [CS] W:A would crash when the offline multiplayer screen was opened if the previously-loaded map (stored in current.thm) was a .BIT map and was corrupted.
  - [CS] W:A would crash when it tried to display a message box while being minimised. W:A will now flash its taskbar button and produce a standard beep when this happens, and will display the message box once it's restored.
  - [DC] A bug in v3.6.29.0 caused W:A to crash in some circumstances if an instant replay was skipped by pressing **Space**.
  - [DC] A bug in v3.6.29.0 caused W:A to crash upon an instant replay, if one or more crates were present and an earlier version was being emulated — such as v3.6.28.0[teststuff5], since v3.6.29.0

did not have its own version of TestStuff.

- [DC] In v3.6.29.0, when emulating v3.0, attempting to use worm selection in a team that started with just 1 worm would crash the game.
- [CS] When W:A is running on some system configurations and a bitmap fails to allocate to video RAM, it will now allocate to system RAM instead of crashing.
- [CS] Minor/obscure changes have been made that may avoid bitmap-related crashes in the front end.
- [DC] It was possible for W:A to crash when the "Please wait... working..." box popped up, when a game was started. This was exceedingly rare, but confirmed to happen at least sometimes under Windows 7.
- [CS] W:A would crash when attempting to open the Team Editor if there was a 4-bit BMP image in the User\Flags or User\Graves folder. Now it is capable of loading 4-bit BMPs.
- [CS] W:A would crash if it failed to load a sound sample from the FESfx subdirectory. It will now display an error message.
- [CS] W:A would crash if it tried to display a message after it had exited the full-screen graphics mode, for example if an error occurred upon saving the team file. It will now display the message using a standard Windows message box.
- [DC] W:A would crash if the user minimised during the front end's intro sequence.
- [DC, CS] Fixes affecting game logic
  - [CS, DC] Fatal and potentially fatal bugs
    - [CS] A bug in v3.6.29.0 caused network desynchronisations and checksum errors when the Laser Sight was used. Due to its random nature, this bug cannot be emulated.
    - [DC] In a game with CPU team(s), in which an external scheme editor was used to assign "zero power" to a Mine, Dynamite, Priceless Ming Vase, Air Strike, Napalm Strike, Mail Strike, French Sheep Strike, Mike's Carpet Bomb, MB Bomb, and/or Concrete Donkey, if the CPU AI tried to analyze using one of those weapons, W:A would crash. **(See Footnote 2.)**
    - [CS] If a Worm was dropped into a pile of multiple overlapping Worms (from high enough to suffer fall damage), the worm would "hover" briefly the moment it hit the pile. It would actually be accelerating during this "hover", suffering extra fall damage as a result, prolonged more by every extra worm in the pile. In the most extreme case possible, with a 48th worm dropped into a pile of 47 overlapping worms, the game would be thrown into an endless loop.
  - [DC] A bug in v3.6.29.0 made it possible for a single Skunk to poison the same Worm twice, if the player's turn ended during the poisoning.
  - [DC] With TestStuff enabled, "use of weapons during a rope roll" had a bug; if a weapon such as Dragon Ball (which can normally only be fired while standing or jumping) was used from a rope roll, the rope would refuse to fire during the subsequent retreat time.
  - [DC] With the "BattyRope" option enabled (either explicitly or as part of TestStuff)
    - [DC] Ending one's turn while on the Jet Pack threw the game into an endless loop (a never-ending turn).
    - [DC] Guns (Shotgun, Handgun, Uzi, and Minigun) did not cut an attached rope, even with a point-blank hit to the anchoring cuff.
    - [DC] The camera would only follow a roping Worm if the player controlling it was holding arrow keys or pressing Space or Backspace.
  - [DC] If the terrain anchoring or supporting a Ninja Rope is destroyed, it will now detach the rope. (Previously, only a standard explosion would detach a rope.) This can happen in a number of ways:
    - part of the rope becomes submerged by rising water
    - the flames from a Napalm Strike or Flame Thrower burn the land anchoring or supporting the rope
    - a Mole Bomb or Mole Squadron digs through land that anchored or supported the rope
    - a Fire Punch, Kamikaze, Blow Torch or Pneumatic Drill destroys land that anchored or supported the rope (this can only happen with BattyRope enabled)
  - [DC] There was a tiny rounding error in attaching the Ninja Rope. It would often attach one pixel down, right, or down-right of where the fired rope actually hit the terrain.
  - [DC] There was a tiny rounding error in centring a gun blast (from a Shotgun, Handgun, Uzi, or Minigun). The blast would often be centred one pixel down, right, or down-right of where its line-of-fire actually hit the terrain.
  - [DC] If a Worm tried to Bungee off a cliff, and there was a Crate resting 41 to 46 pixels below the cliff

- top, the bungee would fail to fire and the Worm would fall.
- [DC] The CPU AI would sometimes walk through an area, jump back and walk through the same area again.
- [DC] The persistent flames of a Petrol Bomb took fewer turns to decay after the arrival of Sudden Death.
- [DC] There was an extra 1.26 second delay between turns during Sudden Death with water rising disabled. This is because it took one second to raise the water by zero pixels, and a quarter of a second to linger while the camera savoured the moment.
- [DC] The sprite of a Worm holding a Mole Bomb always showed the worm as standing flat, regardless of whether it may have been standing on a slope.
- [DC] In a very tall map, the Mole Squadron would suddenly warp above the map after digging for no more than 36.20 seconds.
- [DC] A Worm using the Pneumatic Drill while whizzing across the map (e.g., from Rope or Jet Pack, or even a jump) could hit something and make a sound effect, without actually damaging what was hit.
- [DC] A Donor Card could give "-1x" of an item if the previous owner had an unlimited supply of that item. Since all teams normally have the same starting ammo, collecting this kind of donor card had no effect. Now, a donor card is no longer created if all the other teams already have an infinite supply. If an infinite supply is collected (which cannot happen anymore, barring future customisability enhancements), it will be displayed without an ammo count.
- [DC] There was no smooth transition when a poisoned Worm became healthy due to its team collecting a Health Crate.
- [DC] There was no smooth transition from the Freeze "aiming" state to the normal Standing state (e.g., when selecting Freeze then selecting Parachute while standing on land).
- [CS] When landing from a Fire Punch, the Worm's sprite was not updated to reflect the land slope.
- [CS] When teleporting directly on land (which can be easily done by pointing the cursor a short distance into the terrain), the Worm's sprite was not updated to reflect the land slope.
- [DC] There have been some internal fixes regarding fatal injury while releasing a herded weapon and BattyRope Skip Go. These fixes have virtually no externally noticeable effect.
- [DC] In an online game, in which at least two machines connected to the game each had at least two teams of different colours, and these two sets of colours had at least one colour in common, players would incorrectly see the secrets (e.g., weapon selection and collection) of teams whose colours they did not share. (Strictly speaking this fix doesn't affect the game logic, but it is tied to the logic version for fairness.)
- [DC] It has always been the case that if a worm fired the rope during a fall or jump, the rope firing would be cancelled when the worm landed, ready to be fired again right away. However, a change made in v3.6.29.0 inadvertently caused the rope firing also to be cancelled when the worm finished landing, and started standing up.
- [DC] It was possible to walk while a rope was firing, if that rope was fired while the worm was falling (from a jump, walking off a ledge, or dismounting from parachute or jet pack) and the worm subsequently landed. In v3.6.28.0 and earlier, this could result in the rope continuing to fire from the worm's hindquarters. In v3.6.29.0, it meant the rope could be fired a third time, in a different direction. It is no longer possible to walk while a rope is being fired.
- [DC] The "UnFreeze" sound effect was played when a frozen worm drowned, even though the worm remained frozen.
- [DC] If a missile, such as a Super Sheep with Sheep Heaven enabled, exploded extremely far from everything else (worms, oil drums, etc.), it would result in a "global explosion" due to an overflow bug.

## Changes

- [CS, DC] W:A no longer registers its associations automatically upon being launched. However, the previous behaviour may be restored by checking the appropriate checkbox on the **Advanced Options** screen, or by importing **RegisterAssociations\_Automatically.reg** (from the **Tweaks** folder) into the system registry.
- [CS, DC] In-game smooth (dithered) background gradient
  - [CS] The gradient is now rendered using a new method, which should fix performance problems on

some system configurations.

- [DC, CS] The dithering algorithm used for rendering the background for maps with more than 96 colours or non-standard height has been substantially improved.
- [CS] The gradient is now drawn with a parallax effect. The effect can be disabled using the **BackgroundGradientParallax\_Disable.reg** registry tweak.
- [CS] The registry tweak **SmoothBackgroundGradient\_Disable.reg** has been added. This tweak disables smooth gradients (forcing a coarse gradient) while still allowing the full cycle of detail levels to enable background debris, bitmap backgrounds and clouds.
- [CS] Palette modification events occurring in the front end are now logged to "palette.log"; previously, they were only logged in-game.
- [CS, DC] W:A now uses some workarounds to fix palette problems in the front end. Some of these workarounds may have undesired side effects, such as flickering or delays when switching from screen to screen, even if you did not previously experience palette problems in the front end. If the side effects are undesirable and you do not experience palette problems, you can disable the workaround on the **Advanced Options** screen, or import **FrontendPaletteFix\_Off.reg** (from the **Tweaks** folder) into the system registry.
  - [DC] The FrontendPaletteFix registry setting, set by the FrontendPaletteFix\_On/Off.reg tweaks, is a 4-bit bitfield, with each bit toggling a specific palette workaround. Thus, it's possible to selectively disable the palette workarounds by editing the registry setting directly.
- [DC] The map size prompt, which is displayed in the Join screen if the host transmits a colour PNG map larger than a certain size (the default is a width × height larger than 8 megapixels), is now also used when loading a map from disk using the Map Editor. The warning limit for the map's area can be set on the **Advanced Options** screen. As before (since v3.6.28.0), it can also be overridden by creating a value named "**MapAreaWarnLimit**" of type REG\_DWORD in W:A's Options key (HKEY\_CURRENT\_USER\Software\Team17SoftwareLTD\WormsArmageddon\Options), which specifies the image area threshold, above which the game asks for a confirmation before loading the image. You can quickly set this value to the default value or disable the warning by importing **MapAreaWarnLimit\_Default.reg** or **MapAreaWarnLimit\_Unlimited.reg** (from the **Tweaks** folder) respectively.
- [CS] Entering the Options screen will no longer reset the current resolution to a default value if it is not in the list of resolutions reported as available by DirectDraw.
- [CS] The second asterisk (added in 3.6.28.0) has been removed from /me messages.
- [DC] The host/join logs (in User\Logs) now use a triple bullet format (like Export Log), making non-chat log entries stand out unambiguously.
- [CS] When hosting a Direct IP game with a custom channel scheme (using the **Scheme** parameter) and no explicitly-specified Game ID, W:A will automatically generate and set a Game ID to prevent accidental connections with an incorrect scheme (which lead to desyncs). As usual, the correct full **wa://** URL can be obtained using the **/url** command.
- [CS] **wa://** URLs generated using the **/url** command will now specify the Game ID as the last parameter. The reason for this change is to prevent truncated URLs from seemingly functioning correctly at first, but ultimately causing a desync.
- [DC] When joining a Direct IP game, the connection dialog box now says "Direct IP" instead of "Direct IP : Direct IP".
- [DC] Due to general improvements in the in-game network code, a minor bug has been temporarily introduced (and will be fixed in a later version). For a client in an online game with 3 or more players, if the host stops responding (without detectably dropping the connection) during a remote client's turn, then the game will not automatically time out the connection.
- [DC] Changes affecting game logic
  - [DC] There are no longer any built-in game time limits. These were limits that were applied in the front end but not in-game, resulting in seemingly inconsistent behaviour. Previously, if a round lasted for less than 2 seconds total turn and retreat time, it was treated as a draw. Otherwise, if it lasted for less than 5 seconds total turn and retreat time, or less than 15 seconds of total game time, the round was treated as a "win" with no winner (which was a bug).
  - [DC] Internal changes have been made to the "Random worm order" scheme option. This should have no discernable effect.

## Features

- [CS] W:A now uses Unicode for all clipboard operations when supported by the operating system.
- [CS] An **Advanced Options** screen is now accessible from the Options screen, which allows configuring new settings, and settings previously only configurable using registry scripts and direct registry editing.
- [CS] The Intro can now be skipped with a single tap of the Escape key.
- [DC] It is now possible to skip the opening intro without using the **/nointro** command line option. To enable this, use the **Skip Intro** checkbox in the new Advanced Options Menu.
- [CS, DC] All front end screens can now be exited with the Escape key.
- [CS] When placing the mouse cursor at the bottom of the screen in the front end, W:A will now display a help hint.
- [CS] Some combo boxes (e.g. scheme and map selection combo boxes) now drop down to taller list boxes.
- [CS] You can now jump to and cycle through combo box entries that begin with a certain character by typing the said character on the keyboard.
- [CS] List view controls (e.g. the WormNET player list) are now scrollable with the mouse wheel.
- [CS] **Ctrl+Delete** and **Ctrl+Backspace** now delete and backspace a word respectively in front end edit boxes.
- [CS] When W:A is started for the first time, the in-game screen resolution now defaults to the Windows desktop resolution instead of 640×480.
- [CS, DC] When the network play screen is opened for the first time, the WormNET nickname now defaults to the Windows user name — or, if it is not available, the computer name.
- [DC] When W:A is launched, the default scheme "Intermediate" is loaded. However, this is no longer done every time you enter the offline multiplayer screen and Options screen. The game will remember the last scheme loaded.
- [DC, CS] Clicking the "cheat" button in the Weapon Editor now flips into another screen instead of opening a modal dialog box. Currently this allows you to edit both Ammo and Delay for utilities. Clicking the "cheat" button a second time flips back to the normal weapon editor.
- [CS] Provided that the computer is connected directly to the Internet, W:A will now attempt to auto-detect the external IP address by enumerating all IP addresses associated with the local hostname, and picking the first one that doesn't belong in a private or auto-configuration address range. This allows the **/url** command for hosted Direct IP games to work properly in the case that the computer's external IP has changed since the last time it connected to WormNET.
- [CS] The **/url** command now also works when joining a game.
- [CS] The WormNET button on the Network screen now automatically connects to WormNET using the "Autologin" link. The old behaviour can be restored by replacing the file **ServerList.htm** in the Graphics\ServerLobby subdirectory with **OldServerList.htm**.
- [CS] A new HTML box has been added to the WormNET channel list screen. This box will be used to display up-to-date community and game-related news. 3rd-party server owners can send content to this box by placing it into `<MOTD>...</MOTD>` tags.
- [CS] The W:A HTML parser now understands the EXTA tag. Having the same syntax as the A tag, it will create hyperlinks which, when double-clicked, will minimise the game and open the link specified by the HREF parameter in the default web browser instead of the in-game browser.
- [CS] Flags have been added for [Algeria](#), [Belarus](#), [Bulgaria](#), [Egypt](#), [El Salvador](#), [Guatemala](#), [Jamaica](#), [Kazakhstan](#), [South Korea](#), [Lithuania](#), [Macedonia](#), [Marshall Islands](#), [Peru](#), [Saudi Arabia](#), [Taiwan](#) and [United Arab Emirates](#).
- [DC] Four Hungarian characters have been added to W:A's font set: ő Ű Ű Ű
- [DC] You are now allowed to use any and all characters in game names. The length limit is still 29 characters. Using the characters `<>'&"` lowers the maximum length, and these characters will show up incorrectly in older versions of W:A.
- [DC] The **ß** character is no longer automatically prefixed in front of hosted game names.
- [CS, DC] Wrapped lines in chat history boxes are now indented. This prevents line wrapping from being abused to create fake messages.
- [DC] Clipboard pasting in the front end now preserves newlines. They are shown as ↵ glyphs in the edit box, and while selecting text. When entered in WormNET / IRC, they are translated into | characters.
- [CS] Sending notices is now supported using the **/notice** command, although W:A does not distinguish between incoming messages and notices.

- [CS] A **/hb** command has been added to the WormNET IRC lobby, which is an alias for `"/msg HostingBuddy"`.
- [CS, DC] Web and E-mail URLs are now automatically parsed and converted to hyperlinks in message histories (WormNET, LAN and host/join screen).
- [CS] WormNET private message formatting codes can now also be used for private messages in the host/join screen.
- [CS] New private message formatting codes have been added: `\u` to start underlined text, `\U` to stop.
- [CS] While the game is minimised, it will flash its taskbar button and produce a standard beep when the player receives a private message in the WormNET lobby or in the host/join screen, or when the player's nickname is mentioned in WormNET chat.
- [CS] While the game is minimised from the host screen, it will flash its taskbar button when someone joins the game.
- [CS] While the game is minimised from the join screen, it will flash its taskbar button when the host lights up.
- [DC] The **/afk** or **/away** command may now be used in the network Join dialog. In the Away state, your game will automatically light up when the host lights up. This is especially useful for **spectators**. It also works for players who plan to actively play upon returning to the computer, in a casual game. In Away mode, once the game starts your turns will be automatically skipped (assuming you're not a spectator), just as if you'd entered **/afk** or **/away** in-game. The Away state will be remembered upon return from the game. In the Join dialog, typing in the chat or clicking most dialog buttons will cancel the Away state.
- [CS, DC] Pressing **Ctrl+Home** will enable "Home Lock", making the camera remain centred on the current worm. Pressing and releasing Home disables it.
  - [CS] Home (or Home Lock) will override the effect of Scroll Lock. Both can be temporarily overridden by holding down the left mouse button.
- [DC] Previously, when the Escape menu was open, any team cursor (such as a Teleport or Homing Missile cursor) would be hidden from view. Now, a team cursor is rendered in quasi-transparency when other cursors are in use.
- [CS] W:A will automatically begin ignoring in-game chat from players who send more than 5 chat lines within the same second. When this happens, a message will be displayed with unignore instructions.
- [CS] It is now possible to ignore players during the game using the **/ignore** and **/unignore** commands (in addition to the **/ex** and **/inc** commands, and using **Ctrl+F1...F6**). Typing **/ex** alone will now clear all ignores instead of ignoring all players, to be consistent with the behaviour of **/ignore** alone in the WormNET lobby and host/join screen.
- [CS] W:A now saves the state of transparent labels, chat panel pinned status, home lock and the heights of pinned and unpinned chat panels between games.
- [CS] The chat panel can now be shrunk (using **Ctrl+Up**) to the minimum size required to display all players (as small as one line).
- [DC, CS] The screenshot function is now much faster. Whereas before, pressing **Pause** would cause the game to pause noticeably as the screenshot was created, it is now instantaneous. This means that the Export Video feature can now work at full frame rate or faster, even at moderately high resolutions. Note that by default, Export Video goes no faster than the normal frame rate; to get it to go as fast as possible, adjust the playback speed by holding **0** while pressing **9**.
- [DC] The Export Video dialog no longer has an upper limit on resolution.
- [CS] It is now possible to automate Export Video by specifying export parameters on the command line, after the **/getvideo** switch. The order is as follows: ***/getvideo ReplayFile.WAgame framerate-divider start-time end-time resolution-width resolution-height basename***. The syntax for the values is the same as in the Export Video option dialog. At least the frame rate divider must be specified; other parameters will be set to their default values if not specified. This feature can be used to extract a single frame as an image, by specifying the same start and end time.
- [CS] Pressing **Space** during the playback of a recorded game will now skip to the beginning of the next turn.
- [DC] **Weapon Panel**
  - [DC] In v3.6.28.0 it became possible to view the weapon panel during other players' turns, but the panel was still being automatically closed at the beginning and end of local turns, even though it could be reopened right away. The panel is no longer ever automatically closed; only a player's direct actions will close it.

- [DC] Previously, it was not possible to view the weapon panel during other players' turns if there were multiple players on the same computer with different team colours. Now, a menu of team colours is displayed at the bottom of the panel in these cases, allowing the inventory of any local team to be viewed by clicking the team's colour swatch.
- [DC] It is now possible to view the weapon panel during playback of a recorded game. A menu of team colours is displayed at the bottom of the panel, allowing any team's inventory to be viewed by clicking the team's colour swatch.
- [DC] When the weapon panel is redrawn, the cursor position is now remembered even if it was on an empty square of the grid, or on a weapon that disappeared during the redraw. Previously, the cursor was reset to the upper-left corner of the panel in these circumstances.
- [DC] Previously, Select Worm was hidden from teams with only 1 worm. Now, it is displayed in disabled form. (This is important if you have a stockpiled Select Worm that can persist to the next round.)
- [DC] During manual placement at the beginning of a game, it is now possible to "reselect" the Teleport. This has no practical value and is just for consistency and fun.
- [DC] Selecting a weapon from the weapon panel will now automatically close the chat panel.
- [DC] A new "Sanitize Replay" feature has been added. This creates a copy of a replay with all **private chat** messages **removed**. To use this feature, right click on the WAgame file in Explorer and click "Sanitize Replay". The file "**replay.wagame**" will be sanitized to "**replay {sanitized}.wagame**".
- [DC] It is now possible to view the contents of crates and fuses of random mines during playback of games played with v3.6.29.0+. Previously, these were displayed as question marks. This feature has not been made fully convenient yet; currently you must fast-forward almost to the end of the replay and then [R]estart it to see the contents of crates and fuses of random mines.
- [DC] The Teleport fudging algorithm (which tweaks the position of the cursor if it is not precisely located in a spot allowing space for a Worm) is now much better at reading the user's intentions. If any fudging is needed, it will now be biased towards placing the Worm directly on land.
- [DC] The resolutions in the Options Menu combo box are now sorted by total number of pixels. Resolutions that are identical in total number of pixels are sorted by height.
- [DC] In the Host/Join screens and the in-game chat box, entering the command **/time** will display the current local time.
- [DC] When using "Extract Scheme" on a recorded game file having an old logic version but including settings in its scheme that are interpreted by newer versions to represent customised Mines / Oil Drums and/or Jet Pack fuel, the extracted scheme will now have these settings reset to their default values, so that a game played on the latest version using this scheme will have the same settings as the actual recorded game did.
- [DC] In v3.6.19.12, the Map Editor's Generate button was removed, and replaced with a Reseed button. The Generate button has now been brought back (inserted above the Reseed button), and generates exactly the same maps as it did before being removed.
- [DC] Test versions
  - [DC] BattyRope, 150% Speed, and TestStuff have all been added to the latest game logic version, so that older versions will not need to be emulated to enable these options.
  - [DC] Girder Radius Assist has been added to TestStuff.
  - [DC] Note that TestStuff has been incremented to "version 8". However, emulation of earlier versions of TestStuff is now allowed.
  - [DC] Some new test versions have been added:
    - **RacingStuff**: This can be toggled with any one of the following commands: **/rs**, **/race**, **/racing**, **/rcestuff**, or **/racingstuff**. This enables Phased Worms, in which worms pass through each other without resistance, and enables worm selection without ending hot seat time. This option is especially useful for Bungee Races.
    - **BoomRacing**: This can be toggled with any one of the following commands: **/boom**, **/boomrace**, or **/boomracing**. This enables Phased Teams, and enables worm selection without ending hot seat time. This option is especially useful for Boom Races and Assault Courses.
    - Phased Teams creates a condition in which enemy teams cannot influence each other in any way — with some exceptions:
      - The landscape is shared, so terrain creation (girders, arrows) and destruction (explosions, Fire Punch, Kamikaze, Blow Torch, Pneumatic Drill, Mole Bomb, Mole Squadron, Napalm



- Strike, Flame Thrower) influence all teams. Worms standing on terrain may fall if that terrain is destroyed or pierced by an arrow; the creation of terrain puts an obstacle in the path of enemy teams, and its destruction removes an obstacle.
  - Rising water drowns all teams, regardless of who or what caused it to rise.
  - Destroying an Oil Drum will remove it as an obstacle, meaning Worms that were standing on it will fall.
  - If a Mine placed on startup is triggered by proximity, it will only directly damage allies of the team that triggered it. However, its disappearance will mean that it can no longer serve as an obstacle for enemy teams.
  - Anything that creates flames (Napalm Strike, Petrol Bomb, Oil Drum explosion) may erase pre-existing flames if the maximum number of flamelets is reached. The flames erased may belong to an enemy team.
  - Enemy Worms will visually hide the terrain covered by their sprites. (This is also a shortcoming of Phased Worms.)
  - These shortcomings may be addressed in a future Beta Update.
- [DC, CS] Export Log changes
  - [DC] The WAgame file format version is now logged, right after the game logic version.
  - [CS] The W:A version used to export the log is now logged as well.
  - [DC] The turn time totals and associated team and player names (at the end of the log) are now formatted for improved readability.
  - [DC] Export Log will no longer fall into an endless loop when emulating the BattyRope Jet Pack bug. Note that there are other endless loop bugs that Export Log does not handle yet.
  - [DC] The "Damage dealt" log entries now include an accounting of kills.
  - [DC] The exported log will now indicate which player was the host.
- Readme entries for versions in which CyberShadow and Deadcode collaborated (v3.6.28.0 and onward) have been annotated in small print to show which developer(s) implemented each fix and feature.
  - [DC] means it was implemented by Deadcode (David Ellsworth).
  - [CS] means it was implemented by CyberShadow (Vladimir Panteleev).
  - [CS, DC] means it was primarily implemented by CyberShadow, with adjustments by Deadcode.
  - [CS, DC] at the root of a tree means that most of the subentries were implemented by CyberShadow, and the rest by Deadcode.
  - Note that the [CS] and [DC] tags indicate coding credit only, and do not cover planning discussions and documentation edits.

## v3.6.31.0 Beta Update (2010.11.16)

### Fixes

- [DC] In emulation, /version messages, and Export Log output, W:A v3.6.30.0 incorrectly called the test versions "v3.6.30.0[BattyRope8]" and "v3.6.30.0[TestStuff8]" "v3.6.30.0[BattyRope7]" and "v3.6.30.0[TestStuff7]", respectively. It incorrectly called "v3.6.30.0[BoomRacing]" simply "v3.6.30.0", whereas it incorrectly called "v3.6.30.0" itself an empty string, "".
- [CS] Some features specific to internal testing (alpha) builds were accidentally left in v3.6.30.0.
- [CS] The game would sometimes crash during the worm death explosion animation, if the Russian language was selected.
- [CS] Sometimes, when exiting from a network game as a client, W:A would ask for a confirmation after switching to the front end. This only occurred if the "Back" button has been clicked (without actually leaving the game) since joining the current network game.
- [CS] On some systems, there was no sound in the front end in W:A v3.6.30.0. Starting with v3.6.30.0, W:A checks if the sound parameters requested by W:A are supported by the sound card's DirectSound driver. On some systems, the DirectSound driver incorrectly reported the sample rate used by W:A as out of range of its hardware secondary sound buffer sample rate specifications. W:A now does not check if the desired sample rate is within these specifications.
- [CS] If front end audio initialization failed, minimizing and restoring the game in the front end would result in various graphical artefacts, such as a mostly-black screen with white text and missing mouse cursor.

This problem appeared for all users affected by the above problem.

- [CS] A redundant display mode change is now avoided when launching replay playback.
- [CS] On some systems, attempting to extract videos from replays at certain resolutions failed with a front end video initialization error message.
- [CS] The Russian file type description for .WAgame files was not being correctly registered.
- [CS] The Hungarian characters introduced in v3.6.30.0 could not be typed in the front end.
- [CS] The WormNET news window was being cleared when returning from a game.
- [CS, DC] LAN games hosted by v3.6.30.0 were only joinable via Direct IP due to Game ID checks and the fact that all versions before and including v3.6.30.0 did not send a correct Game ID for LAN games. Both problems have been fixed — v3.6.30.0 LAN hosts are now joinable by v3.6.31.0+ clients, and v3.6.31.0 LAN hosts are now joinable by older (v3.6.30.0 and earlier) clients.
- [CS] On some systems, the smooth background gradient was not being rendered properly on very tall maps.
- [CS] Map complexity and randomness
  - [CS] In v3.6.30.0, loading a particular .BIT or .LEV map caused mouse-click terrain generation to iterate through the same sequence of random maps every time that same map was loaded (either by the local user, by another user who downloaded that map, or by the host of an online game which the user joined). This behaviour is now changed — the sequence of generated maps will be different each time the respective W:A screen is opened, regardless of the initial map.
  - [CS] Worms Armageddon will no longer store the RNG seed used for map generation and other tasks in the registry. Instead, a new seed is generated on each start, using a cryptographically random buffer. This removes any possibility of persistent effects on a W:A installation's RNG.
- [CS] When trying to connect to a v3.6.31.0+ game with a v3.6.31.0+ client using an incorrect Game ID, W:A will now show an appropriate error message instead of "Max Players".
- [DC] The "*team (player) forced out by reason*" message that is printed in red in the in-game chat, and also printed in Export Log, is now more descriptive in cases where the cause may be a HostingBuddy bug or message injection.
- [CS] The Italian translation for the "Prod" weapon has been changed from "Pungolo" (in the front end) and "Bastone" (in-game) to "Spintarella".

## Features

- [CS] A slider has been added to the map editor, which allows controlling the range of complexity in randomly generated maps. This slider affects map generation outside the map editor as well, but not for Quick CPU and Deathmatch games (which will continue to be generated at maximum complexity). By default, the slider is set to the maximum complexity level, similar to the behaviour in versions v3.6.20.1 to v3.6.29.0.
- [CS] A new registry script, **ResetRegistryOptions.reg**, has been added. Importing this script will reset all Worms Armageddon options from the Windows registry. The **Reset** button in Advanced Options (added in v3.6.30.0) also does this, but also clears the options stored in win.ini.

## v3.6.31.2b Alpha Update (2012.09.12) - first Steam release

### Fixes

- [CS] Removed stub .WAgame context menu entry for "Convert to Beta" option, accidentally left in v3.6.30.0 and v3.6.31.0.
- [CS] Intrinsic scheme files were being created with filenames in an incorrect encoding.
- [DC] When the tweak **StereoFactor** was set to a value less than or equal to **DisplayXSize\*2**, W:A would crash when starting a game. For example, with 1920×1200 as the configured game resolution, setting "Stereo effects" in Advanced Options to anything from 0% to 5% would result in a crash when an attempt was made to start a game.
- [CS] The custom resolution selection drop-down was being disabled when the team limit (32 teams) was reached.
- [DC] In an offline game with "Weapons Don't End Turn" enabled, a supply of multiple Longbows, and Instant Replays enabled, it was possible to crash the game by triggering an instant replay while Longbow arrows were in the air. Normally this could only occur with a "modified" version of W:A,

because the "Weapons Don't End Turn" option is not in the standard scheme format.

- [DC] Fixes affecting game logic
  - [DC] If the Bungee was triggered on the same frame (at the same instant) as damage to other worm(s) began to be displayed, the Bungee would instantly be cancelled and the Worm using it would fall and lose its turn. (This bug could only happen if BattyRope was not enabled.)
  - [DC] Bug introduced in v3.6.30.0: If a rope that was not perfectly vertical was allowed to settle into a perfectly vertical resting state, and then a Girder or Longbow Arrow was created inside the rope, the worm dangling from the rope would "accelerate" due to gravity while actually staying still at the end of the rope; when released, the worm would then fall downward at an artificially high initial velocity.
  - [DC] When an Indian Nuclear Test (2 poison points) was used right before the onset of a Sudden Death Nuke (5 poison points), the loss of health due to poison was applied twice (once after the Indian Nuclear Test and again after the Sudden Death Nuke). Each time only the Indian Nuclear Test's 2 poison points were applied, ignoring the Sudden Death Nuke's 5 poison points on that turn and subsequent turns. The fixed behavior is now to add the poison points (2+5=7), applying the cumulative poison only after the Sudden Death Nuke and not between the two nukes.
  - [DC] If a worm standing on land placed a Girder next to a moving or jittering object (e.g. a worm), such that there was adequate clearance the moment the mouse button was clicked, but blockage on the following frame, the Girder would be placed anyway, intersecting with the object that should have blocked it. An analogous thing happened for Teleport, except that the worm would enact the Teleport animation and sound without actually teleporting.
  - [DC] In v3.6.30.0, a fix to a glitch accidentally had the effect of increasing the average depth of the Pneumatic Drill from 158 to 185 pixels, and significantly changing the probability distribution of its depth. The average depth and its statistical characteristics have now been restored to legacy behavior.
  - [DC] In a Crate Shower, it was possible for both Super Sheep and Aqua Sheep crates to fall, regardless of whether the Aqua Sheep was enabled or not.

## Changes

- [CS] W:A will now use the larger font for the in-game chat and network panel on resolutions of 720 pixels in height or taller, as opposed to the old value of 768.
- [T17:CB] W:A now uses 32-bit color graphics modes both in the front end and in-game. Internally it still uses 8-bit palettised graphics, with a software renderer converting to 32-bit color in real time. This fixes all remaining OS-related palette glitches.

## v3.7.0.0 Update (2012.12.20)

### Fixes

- [DC,CS] Compatibility and interoperability
  - [CS] Windows 8 compatibility has been improved.
  - [CS] When W:A is run under Windows 8 for the first time, it will offer to configure Windows compatibility flags which should improve compatibility and performance under Windows 8.
  - [DC] Problem introduced in v3.6.30.0: WA.exe triggered a false positive in some virus detection programs.
  - [DC] Support was added in v3.6.28.0 for opening land\*.dat map files from OnlineWorms and WWP Aqua in W:A's Map Editor. However, three land\*.dat maps (land07.dat, land21.dat, and land27.dat) from the Korean small version of OnlineWorms could not be opened.
  - [DC] With the command-line parameters **/getmap**, **/getscheme**, and **/getvideo**, the use of forward-slashes instead of backslashes in the file's path name was not supported.
  - [DC] Bug introduced in v3.6.23.0: After connecting to a non-WormNET IRC server that attempted ident authentication, W:A would fail to properly join channels.
- [DC,CS] Default files, folders, settings, and persistence of settings
  - [CS] W:A will now create empty user content subdirectories on start-up if they do not exist.
  - [CS, DC] W:A will now create a default team file if one doesn't exist.
  - [CS] The **/register** command-line parameter will now report errors, and also save W:A's install path.
  - [DC] When registering its associations, W:A did not override the current "Open With" user choice.

- [DC] When a host enabled one of the "test versions" (BattyRope, RacingStuff, etc.), this state was meant to persist both through multiple rounds and new matches, as if the enabled test version were part of the scheme. However, it did not persist through new matches.
- [DC] Bug introduced in v3.6.30.0: After returning from a Mission or Training, the default scheme would be incorrectly set in Offline Multiplayer.
- [DC] Intrinsic maps were not remembered in Offline Multiplayer mode; every time a Multiplayer screen was entered (including the end of a game round), a selected intrinsic map would be overwritten with a randomly generated map.
- [DC] When a replay file using an intrinsic map was launched, the current map (stored in current.thm) was deleted. If this was done while another instance of W:A was open, this would cause the map thumbnail in that instance to become empty (or, in versions before 3.6.29.0, garbled).
- [DC] When an online game was joined, and the host loaded a .BIT or .LEV map (without necessarily starting the game), on the client's side, it would result in a state in which part of the representation of the current map was not updated. In this state, if the client-side user entered the Offline Multiplayer screen, the last map loaded by the host in the online game would be shown — but if the user then right-clicked it to open the Map Editor, the incorrect map would be opened.
- [DC] After a round of Training, in-game options such as volume and detail level were not being saved.
- [DC,CS] User interface
  - [DC,CS] Compatibility tweaks in the Advanced Options screen that were obsoleted by v3.6.31.2b have been removed.
    - [CS] The "Slow Frontend Workaround" setting is now a checkbox, which selects between the previous "Off" and "Alternative" settings. The previous "On" setting has the same effect as "Off".
  - [DC] When playing on very wide maps (at or close to the map width limit), moving an aiming cursor (e.g. Teleport) to the right edge at high speed (especially when using Shift and/or the middle mouse button) could result in the cursor wrapping around to the left edge.
  - [DC] In the Map Editor, when moving the mouse out of the map and back in while holding Alt (for fine tuning) the entire time, the coordinate at which the brush cursor re-entered the map did not match the coordinate at which the mouse cursor actually re-entered.
  - [DC] When moving the mouse over the Map Editor's drop-down list of files, the help text for controls underneath the list box would be shown.
  - [DC] Despite the wraparound fixes in v3.6.28.0, when playing on very wide maps (at or close to the map width limit), a worm flying off the right edge of the map at very high speed could cause the camera to wrap around to the left edge. A speed sufficient for this was only possible if "no maximum speed" was enabled (e.g. by TestStuff).
  - [DC] In the Options screen, if a team was created, edited, or deleted, the Language combo box would have the entire list of languages repeated at the bottom of the list (in an A-B-C-A-B-C manner); this would continue to happen each time (A-B-C-A-B-C-A-B-C, etc.), until exiting the Options screen.
  - [DC] Bug introduced in v3.6.30.0: In an offline game, selecting a weapon using the mouse (in the weapon panel) would cause the next attempt to open the chat panel (to make replay annotations) unsuccessful — the chat would open a little bit and then immediately close itself.
  - [CS] In-game mouse movement input handling has been improved. Previously, W:A would incorrectly accumulate earlier mouse movement input messages received within the same frame, and in specific circumstances, W:A could get stuck at a black screen when starting a game or restoring after minimizing during a game.
  - [CS] When the primary DirectDraw surface was lost, it was not being restored correctly. This needlessly slowed down restoring W:A after minimizing by one frame.
  - [CS] Rendering of background gradients (both in-game and in the main menu) has been optimized.
  - [DC] Front end buttons were not highlighted instantly upon mouse-over, but rather, only when the mouse was moved from one point on the button to another point on the button.
  - [DC] Bug introduced in v3.6.19.7: In the Network Host screen, when the Start button was enabled and the host's mouse was over it, and then a remote player turned their light bulb off (disabling the Start button), if the host subsequently moved the mouse, the Start button would be redrawn as if it were enabled, but it would not highlight upon mouseover and would not respond to being clicked. It would go back to normal the next time it was enabled by having all players light up.
  - [DC] Under Wine, pressing ESC anywhere in the front end would instantly propagate to all windows,

usually resulting in an instant exit.

- [DC,CS] Cosmetic video/audio issues
  - [DC,CS] Bugs introduced in v3.6.31.2b
    - [CS] The brush cursors in the Map Editor were incorrectly rendered.
    - [DC] The phone icon, meant to be displayed only when the chat panel is hidden and a remote player has just said something in the chat, would (under certain conditions) be shown fleetingly when closing the chat panel (with PageUp) or decreasing its height (with Ctrl+Up).
    - [DC] The water level slider in the Map Editor rendered its blue fill rectangle incorrectly.
    - [CS] When running the game at a high resolution such as 2560x1600, on some systems, minimisation in-game could sometimes result in a constant flicker when the game was restored.
    - [DC] In the Steam version of W:A, there was a bug in which custom soundbanks would not be heard in-game, except for the soundbank of the first team in the list of teams. For all other teams, the default soundbank of the local player would be heard.
  - [DC] Front end checkboxes would sometimes be drawn with a weird-looking solid background, if the checkbox was ticked when the dialog containing it was entered. This was random every time the dialog containing the checkbox was entered, and more likely on some machines than others (but very unlikely on most machines).
  - [DC] Front end group boxes were improperly restored after minimizing; their text captions were being redrawn in bright white instead of grey.
  - [DC] The button to open a front end list box would be temporarily erased upon opening certain list boxes for the first time after entering a dialog screen.
  - [DC] When exiting from the Offline Multiplayer or Network screen into the Main Menu, there would be a single-frame flash of incorrect palette. This had been a latent bug since v3.5 Beta 1, but in v3.6.31.2b became a reliable bug that happened every time.
  - [DC] Bug introduced in v3.6.19.7: When entering a Next Round screen a second time during a Multiplayer/Online match (i.e. on the second round or beyond) the auxiliary palette of the map thumbnail would be lost. For .BIT and .LEV maps this resulted in a loss of anti-aliasing; for .PNG and intrinsic maps it resulted in a peppering of black pixels over the thumbnail.
  - [DC] In certain conditions a GDI-style 3D frame could be seen around the W:A logo in the Main Menu. Usually it was only seen upon quitting — for a moment, the border would be visible against an otherwise completely black background when the screen was cleared. However, on some systems the border would be visible at the same time as the logo, clashing with its intended look.
  - [DC] Bug introduced in v3.6.19.7: In the front end, the help text for a default-disabled button would always be shown immediately upon entering a screen. For example, "You're all set let's go!" would be flashed (or shown) upon entering the Multiplayer or Host screens.
  - [DC] Activated utilities displayed in the lower-right corner of the screen (in-game) were rendered with black pixels in all four corners. The corners are now transparent.
  - [DC] Bug introduced in v3.6.23.0: During playback of a game in which "god mode" was enabled, it was impossible to hide the display of crate contents and precise mine fuses, even at the minimum info detail level.
  - [DC] When W:A started the Intro after 60 seconds of inactivity in the front end ("attract mode"), the menu loop ambient sound continued to play.
  - [CS] Elements of the background debris in the front end would only become visible when they could be drawn entirely on the screen, which caused them to materialize suddenly on the left and top sides of the screen.
- [DC,CS] Text and translations
  - [DC] The Spanish translation has been corrected, improved, and extended by OutofOrder.
  - [DC] The French translation has been corrected, improved, and extended by LeTotalKiller.
  - [CS] The Russian translation has been corrected, improved, and extended by CyberShadow and StepS.
  - [DC] In the Weapon Editor's "cheat" mode, the utilities now have proper help text.
  - [DC] The description text for the Grenade stage of Basic Training gave incorrect information in its Dutch, German, Portuguese, and Spanish translations.
  - [DC] Some English and Portuguese text has been corrected.
  - [DC] The Dutch, French, Portuguese, Russian, Spanish, and Swedish translations had some Mission briefings that didn't fit on-screen. Furthermore, briefings that reached the bottom of the text box had

their bottom line of text cropped below the baseline.

- [DC] The Dutch, French, German, Italian, Portuguese, Spanish, and Swedish translations of the "Spectral Recovery" mission briefing had extra text in them (compared to the English text) which may have made it easier to complete the mission successfully in fewer attempts.
- [DC] Displayed and outputted text
  - [DC] After clicking the "cheat" button in the Weapon Editor to flip into cheat/utility editing mode, and then clicking it again to flip back, the help text for the top five weapons on the left column were incorrect.
  - [DC] Bug introduced in v3.6.31.0: In the Map Editor, the help text for the terrain texture button vanished when the button was clicked.
  - [DC] When changing the current language in the Options screen, the name of a currently selected intrinsic scheme (e.g. "[ Intermediate ]") was not updated.
  - [DC] The `/url` command in the front end network screens did not include custom ports in its output.
  - [DC] Bug introduced in v3.6.30.0: When an unrecognised command with a parameter was entered in a host/join/LAN screen, the error message was incorrect, e.g., the command `/win gold medal` would result in the error message "Unrecognized command /wingold medal".
  - [DC] Bug introduced in v3.6.30.0: When copying a string from the chat history in the front end, the Unicode copy of the clipboard string was not being null-terminated. All Windows versions seem to deal with this gracefully, but in Wine, this would sometimes result in some stray characters being inserted at the end.
- [CS,DC] Error messages, prompts, and confirmation
  - [CS] Team file save failures are no longer silently ignored.
  - [CS] W:A will now display warnings on start-up when files in the current directory are not writable, or if W:A was run "As Administrator".
  - [DC] Upon starting a Mission / Training exercise, if W:A encountered an out-of-range setting while parsing the .WAM file, it showed an error message dialog — but went ahead and started a game anyway, with an incompletely initialised mission scheme.
  - [DC] In the Advanced Options screen, the Escape key would instantly exit the screen without saving changes. Now, it prompts the user whether to exit without saving changes.
  - [CS] In the Advanced Options screen, W:A will now notify the user when changing options that only take effect on the next start of the game.
  - [DC] The Delete button in the Map Editor did not ask the user for confirmation.
  - [DC] After loading a PNG with more than 112 colors in the Map Editor, exiting it and clicking OK in the dialog box that prompts the user to dither to 112 colors, there was no immediate visual response to the OK button being clicked. Now, the mouse cursor changes to the Busy state while the dithering is being done.
  - [CS] Graphics and audio error messages have been greatly improved, and now communicate detailed localised error messages, API function names, error codes and their descriptions.
  - [CS] Should the graphics system fail to initialise, W:A will now offer to reset the graphics settings to the default safe values.
  - [CS] When attempting to repair a replay containing a map error that the "Repair" feature is not currently designed to fix, W:A would display a blank message box instead of an error message.
  - [CS,DC] Text would appear cropped if W:A attempted to display a message box or confirmation box in the front end containing more text than would fit. Message boxes are now sized to fit the entire text.
  - [DC] Text in some of the Host screens' buttons would appear cropped or inappropriately wrapped in some languages. These buttons are now resized if necessary to fit the text into one line.
- [DC] Numerical ranges
  - [DC] Bug introduced in v3.6.28.0: In the Map Editor, if Placement Holes were adjusted above 255 (up to a maximum of 300), the number would be truncated (it would have 256 subtracted from it), e.g., a count of 300 would become 44. The maximum is now truly 300, but to use a Placement Hole count higher than 255, all players must be using v3.7.0.0 or later.
  - [DC] Bug introduced in v3.6.28.0: In the Scheme Options editor, the health crate energy was shown incorrectly upon entering the editor if the value was above 127.
  - [DC] The maximum air retreat time supported by the game logic is 255 seconds, but the Scheme Options editor only allowed it to be adjusted up to a maximum of 127 seconds. Any value higher than 127 (adjusted using an external scheme editor) was shown incorrectly. (Note that the game

logic really does only support a maximum of 127 seconds for land retreat time, as opposed to air retreat time.)

- [DC,CS] Crashes and memory corruption
  - [CS] It was possible in theory for W:A to enter an infinite restart loop, where each iteration would start a new process instance and immediately exit. This could happen if W:A reliably crashed before it processed its command-line parameters.
  - [DC] When an error was encountered creating the output file for **/getmap** or **/getscheme**, or the output folder for **/getvideo**, W:A would crash instead of displaying a proper error message.
  - [DC] Bug introduced in v3.6.30.0: If a host selected a map file larger than 5120 bytes, and then switched to a map file 5120 bytes or smaller while the earlier map was in the process of being sent, the host would get an "Out of Memory" error leading to subsequent problems.
  - [DC] Certain out-of-range numeric values, or too many events, in a .WAM (mission/training) file could cause W:A to crash when loading the corresponding Mission/Training round.
  - [DC] A team file (WG.WGT) edited using an external editor to have a team name of 17 characters (with no terminating null) could make W:A crash if the corresponding team was teamed in locally in an online game, and then clicked to team it back out. Other bugs may have also resulted from having the team name and/or other strings in the team file of maximum length with no terminating null. These strings are now forced to have a terminating null if they don't already (e.g., the team name is now forcibly limited to a maximum of 16 characters).
  - [DC] Wine would sometimes crash when audio streams were played in the front end. These streams (in Data\Streams on the CD-ROM or under the main W:A folder in the Steam version) include the intro title music, the Mission/Training win/lose sounds, and the music played at the end of a multiplayer match. The front end now uses the same API as is used for in-game ambient music (also in Data\Streams).
  - [DC] Minimizing during the Intro resulted in a crash upon restoring.
  - [CS] If W:A attempted to set an in-game resolution wider than 2048 or higher than 1536 and failed, W:A would get stuck at a black screen directly after the loading pie. The lock-up was due to W:A continuously failing to move the mouse cursor position to the "center" of the expected resolution, which was outside the screen area of the actual fallback resolution (1024×768).
  - [CS] A potential security vulnerability has been fixed.
- [DC] Fixes affecting game logic
  - [DC] It was possible for a Double Time crate to fall in a scheme with infinite turn time. This was inconsistent with other aspects of the game logic; for example, crates never fall containing contents that are already at infinite ammo in the scheme.
  - [DC] A bug in the Spanish translation of "N Shots Remaining" caused an exclamation mark to be inserted in front of the number ("Quedan !N Disparos") and caused the message to be queued up, instead of flushing the game comment / morse code text queue as it is supposed to (like weapon selection messages also do). Under contrived conditions, it was possible for this to lead to a desynchronization, if there was a mixture of players, one or more of whom had Spanish selected as their language, and one or more with a different language selected. Besides being fixed, the bug is also now emulated in online games and replays thereof.
  - [DC] With BattyRope enabled, if a worm was still on the Bungee upon winning the game, its bungee would be detached (to do the victory dance); as a result it would fall down and possibly lose the game instead of winning.
  - [DC] With BattyRope not enabled, if a worm with a perfectly vertical rope attached was touching the ground, and pending damage on another worm was ready to be displayed, the rope would be detached. (This usually happened with a Ninja Rope that had just been fired straight up.)
  - [DC] If a player disconnected while their team(s) were frozen, they would stay frozen for the rest of the game (or until drowned). Teams are now automatically unfrozen upon surrendering.
  - [DC] Bugs regarding Blow Torch / Teleport and explosions / impacts
    - [DC] A worm using the Teleport (at the stage in which the wavy-light teleportation animation is showing) would have its teleport interrupted, if and when an explosion happened anywhere on the map (out of range of damaging the teleporting worm); if the worm was in the air at the time, it would also lose control. (Note, in WWP, this bug also happens for a worm using the Blow Torch.)
    - [DC] A worm using the Blow Torch, when hit by an explosion, would not be pushed by the impact.

(Note, in WWP this was fixed, at the cost of introducing the above Blow Torch bug.)

- [DC] A worm using the Blow Torch, or using the Teleport as described above, when hit by a Dragon Ball, Longbow arrow, or flamelet, would not be pushed by the impact. (For this to happen with a Dragon Ball or Longbow arrow, "Weapons Don't End Turn" would have had to be enabled. With a flamelet, it would be rather subtle, as the first flamelet to hit would cancel the Blow Torch or Teleport, and subsequent flamelets would act normally.)
- [DC] Bugs enabled by very high or unlimited maximum speed
  - [DC] It was possible, despite the wraparound fixes in v3.6.28.0, for a worm to fly off the right edge of the map at very high speed and wrap around to the left edge, if the worm was still in control at the moment it flew off the edge. A speed sufficient for this was only possible if "no maximum speed" was enabled (e.g. by TestStuff).
  - [DC] If the maximum projectile speed was set to a value  $\geq 200$  pixels per frame, or unlimited (like TestStuff3), it was possible for an object to fall so fast that it skipped past the water and disappeared without making a Splash sound effect.
  - [DC] If the above-described glitch happened to a Worm, it would disappear without losing its energy, causing the game to prematurely end the round with an "Avoid Crash" when the game tried to give the current turn to that worm. (Note: The description of this particular "Avoid Crash" has now been edited to be more universally correct and informative.)
  - [DC] If the maximum projectile speed was set to a value  $> 663$  pixels per frame, or unlimited (like TestStuff3), it was possible for a Worm to fall fast enough that its Fall Damage would be improperly calculated, taking a meaningless value in the range 0 to 1820.
- [DC] Health bar bugs
  - [DC] If a team surrendered before collecting a health crate, and the addition of the health to the team's total energy made it at least 25% higher than the best total energy of any team so far in the current round, then the health bar would overflow beyond its maximum length and would be drawn in a glitchy way. In extreme cases, the health bar could even stretch beyond the right edge of the screen.
  - [DC] If a team was damaged and then collected a health crate while the damage was still pending (i.e. before the damage was visually subtracted), and the addition of the health crate to the team's total energy (with the pending damage already subtracted) made it at least 25% higher than the best total energy of any team so far in the current round, then the health bar would overflow beyond its maximum length and would be drawn in a glitchy way. (This could at most make the health bar slightly less than double what its maximum width is supposed to be.)

## Changes

- [DC] Resolutions are now denoted in all places in the front end as `<width>x<height>` instead of `<width>x<height>`.
- [DC] The message sent from the host in the Network Host/Join and Next Round screens, informing the players that the game cannot start due to unsupported features (map, scheme, and/or number of worms) by a subset of players who joined, has been streamlined.

## Features

- [CS,DC] Advanced Options screen
  - [CS] An option has been added to load WormKit modules on startup.
    - By convention, WormKit modules are DLL files whose name begins with "wk".
    - The command-line parameters `/wk` and `/nowk` also control this behavior, and take precedence over the Advanced Options setting.
    - The command-line parameter `/wkargs` causes W:A to ignore following command-line parameters. This can be used by WormKit module authors to allow passing parameters to WormKit modules.
  - [CS,DC] An option has been added to use 8-bit color DirectDraw rendering. As in v3.6.31.2b, rendering is performed in software. As a result, the 8-bit color mode is more similar in performance to v3.6.31.2b than it is to earlier versions (which used 8-bit color with hardware rendering).
  - [CS] An option has been added to use Direct3D rendering. Direct3D may bypass compatibility and performance issues present with DirectDraw, and enable interoperability with software such as the



Steam overlay.

- It is possible to select using either Direct3D 7 and 9 APIs. The respective DirectX runtime needs to be installed.
- Selecting **Direct3D 9 (shader palette)** causes the palette transformation to be performed on the GPU (using a pixel shader). This lowers CPU usage, but requires Pixel Shader 2.0 support on the GPU.
- [CS] An option has been added to control waiting for vertical sync. Lowers latency when disabled, but may cause screen tearing.
- [CS,DC] An option has been added to enable additional synchronization between screen refresh and vertical sync ("Assisted vertical sync"). Enabling the option should lower latency.
- [DC] An option has been added to enable use of hardware mouse cursors. Currently this option only affects the front end. When enabled it eliminates all perceptible lag between moving the mouse and seeing the cursor move on screen, except for the brush cursor in the Map Editor which is still software-rendered. Enabling hardware cursors results in a much more dramatic difference in this version than it would have before v3.6.31.2b, as software rendering has resulted in higher lag in the front end.
- [CS] An option has been added to configure the compatibility flags for Worms Armageddon in the Windows registry. The configured flags improve performance and resolve GUI issues under Windows 8. (Credit for discovering the compatibility flags goes to StepS)
- [CS] An option has been added to use a new CommunityServerList.htm file instead of ServerList.htm, which, upon connecting to WormNET, redirects to a third-party server list linking to community WormNET servers.
  - The game will automatically offer to toggle the option in case of a WormNET connection error.
- [DC] Drop-down list box (and combo box) behavior
  - [DC] When clicking outside of a list box, the mouse click used to be discarded; it now behaves like a normal click on an outside control.
  - [DC] When right-clicking outside of a list box, the mouse click used to be completely ignored (it wouldn't even close the list box); it now closes the list box and behaves like a normal right-click on an outside control.
  - [DC] Mousing over controls outside of an open list box now highlights them and shows their help text, the same as if the list box were not open.
  - [DC] The button that opens and closes a list box now behaves more gracefully.
  - [DC] If a list box is currently open, the ESC key will now close it instead of exiting the current dialog or screen. (Since v3.6.30.0, this behavior applied to the Multiplayer screen's Scheme combo box and the Map Editor's Map combo box, but no others; now it applies to all combo boxes and drop-down list boxes.)
- [DC] Scrollbar buttons now repeat-scroll only while the mouse is inside the button (while the mouse button is held down).
- [DC] It is now possible to start an "online" offline game from the Network Host screen without using the light bulb button, if there are no remote players.
- [CS,DC] Translatable strings have been moved into external text files.
  - The language files are installed to the DATA\User\Languages\*n.n.n.n* directory, where *n.n.n.n* is the Worms Armageddon version.
  - User-created language files can be placed in the User\Languages\*n.n.n.n* directory. This is the recommended location to place new or modified language files, as files in this location will take priority over those under DATA\User\Languages, and are not under risk of being overwritten by a reinstall.
  - The command-line parameter **/langdir** can be used to specify one or more directory paths which override the locations where W:A will look for language files. The directories are searched in reverse order (the last specified location will be the first one searched).
  - The language file format and syntax is as follows:
    - Each file must use UTF-8 character encoding, and start with the corresponding Byte Order Mark. (The Byte Order Mark is usually invisible in text editors with Unicode support.)
    - The first line is reserved to indicate the language name (in the corresponding language).
    - The rest of the file is a list of strings. A string is defined by its identifier (composed from uppercase English letters, digits and underscores), followed by one or more string literals

- (which are joined together when the file is loaded).
- A string literal is a sequence of characters surrounded by double-quotes, and may contain the following escape sequences:
    - `\"` - literal `"`
    - `\\` - literal `\`
    - `\n` - line break
    - `\m` - 1.5× height line break (where applicable)
    - `\1` through `\9` - placeholder for the first through ninth parameter
    - `\,` - substring separator (for randomly-selected substring container strings)
    - `\{<XX`, and `\{>=XX`, - begin conditional block. All characters until `\}` will be included or omitted, depending on whether the current game version is respectively smaller-than, or greater-than-or-equal the indicated version number (in hexadecimal).
    - `\}` - end conditional block
  - A comment begins with the `#` character and continues until the end of the line. Comments are ignored by the game.
  - The set of visible characters is currently limited to Worms Armageddon's custom character table ([http://worms2d.info/WA\\_character\\_table](http://worms2d.info/WA_character_table)). This limitation may be removed in the future.
  - Translation improvements and new translations can be submitted for inclusion via the Team17 forum (**see section 7.0**).
  - [DC] Changes affecting game logic
    - [DC] When a Double Time crate is collected during retreat, the remaining retreat time is now doubled.
    - [DC] When a Double Time crate is collected by an animal, the animal's remaining fuse time is now doubled.

## 4.0 Known Issues/Bugs

### Crashes / Fatal errors

- If W:A is minimised in the front end and it needs to display a dialog, switch to a different screen, etc., it may crash or the screen elements may be displaced or appear corrupted on restoring. For example:
  - During the end-of-round screen in an online game, W:A will crash if the host clicks the "Play Again" button before you have restored;
  - If W:A is minimised just before entering WormNET, upon restoring the screen elements will not be placed at their correct locations.
- There are crashes that reportedly happen for various other causes, sometimes before W:A even has a chance to start up. These have not been thoroughly investigated, but may have something to do with nonstandard or erroneous files in the directory structure of the W:A CD-ROM or installed "Worms Armageddon" folder, often due to a pirated copy of W:A.
- W:A will not run on computers with video cards/chipsets or drivers which do not support the 640×480 screen resolution used by W:A's front end.
- On systems with multiple monitors and Windows 7 or newer, the screen may flicker excessively or continuously upon start, or before and after a round, when using the Direct3D 9 renderers. Known workarounds include switching to the Direct3D 7 renderer (by importing the **Tweaks\Renderer\_Direct3D\_7.reg** registry script), or by enabling the "Disable desktop composition" option on the "Compatibility" tab in WA.exe file's properties.
- Locking the computer (e.g. using a shortcut key) or closing the lid of a laptop may cause W:A to crash or get stuck on a black screen.

### Privacy

- Whispers are not sent securely, and can be spied upon using a network packet logger. This applies both to the host/join screen and the in-game chat.

### Network Connectivity

- In an online game, the delay between turns (a minimum of 2 seconds) is perhaps sometimes longer

than necessary.

- When a v3.6.24.1 user is present in an online game along with v3.6.23 or v3.6.24.2+ users, a desync may happen during long turns of the v3.6.23 / 3.6.24.2+ users.
- In v3.6.30.0, for a client in an online game with 3 or more players, if the host stops responding (without detectably dropping the connection) during a remote client's turn, then the game will not automatically time out the connection.
- IPX/SPX support is not functioning, despite being present in the user interface.
- A temporary network problem (manifesting as a TCP disconnect or timeout) causes the affected player to irreversibly drop out of the current game (and cause a two-player match to end). There is currently no way to continue an interrupted match.
- The user's external IP address will not be autodetected until they connect to a WormNET server.
- WormNET / Direct IP games hosted from systems lacking a network interface with a global IPv4 address (or behind a network firewall) may not be joinable by other players.
- Network configurations with broken path MTU discovery (e.g. due to an overly-aggressive firewall) may cause network packets of a certain size to be lost. As a result, attempting to add a team after joining a game can lock up the connection.

## Usability issues

- The front end may be slow/laggy sometimes. One known cause of this is MSN Messenger; if you are using it, go to Tools→Options→Personal and uncheck the box "Show me as "Busy" and block my alerts when I'm running a full-screen program, such as a slide presentation". Another known cause is video driver related, and this is addressed in v3.6.26.4.
- In the end-of-round screen of an online game, the "Exit" button sometimes stays greyed out for an unreasonable or indefinite amount of time.
- When a WAgame file is launched from Windows Explorer, a refresh is triggered in Explorer, so upon returning from Playback, the selection is reset to the first file in the folder.
- A game hosted on WormNET will disappear from the list after a timeout, even if the game is still open for joining. If this is fixed before the implementation of a new rankings/server system, the fix will be an auto-renewal.
- There are some text strings (mainly those added since v3.0) that have not been translated and are shown only in English.
- Under certain conditions (possibly related to the v3.6.26.4 "slow front end" fix) the Alt fine-tuning key in the Map Editor doesn't work properly.
- Certain Cyrillic characters are internally represented as their look-alike Latin characters. As a result, Cyrillic strings emitted in log files or copied into the clipboard may not coincide with the original strings. One effect of this is that it may not be possible to search generated log files using a Cyrillic search pattern.
- It is too easy to accidentally kick another player in the host lobby.
- When playing on maps with a width smaller than the screen resolution width and a height close to the maximum map height, the background may not be drawn correctly, resulting in visual artifacts.

## Playability issues

- Weapons dropped by a roping worm will sometimes immediately hit or bounce against the roping worm. Examples:
  - The Bazooka may hit the roping worm before it has any chance to retreat, instantly detonating even if there are no obstacles in the immediate vicinity.
  - The Holy Hand Grenade may bounce against the roping worm and fall the wrong way.
  - The Sheep Launcher may brush against the roping worm and drop straight down while requiring one less pressing of the Fire key than is expected to trigger explosion.
- Graves can block a Girder from being placed in certain positions that would be possible if the grave were not present. The alternative, however, would be to allow the girder to be placed, thus causing the grave to fall down through the terrain, which would be rather weird (although it is already possible to do by shooting a grave with the Longbow).
- It is too easy to accidentally Surrender.
- It is possible to fall onto a Crate in the middle of Rope Roll without collecting the crate. This is very

rare. (This can also happen in a Mission/Training round, if a worm continues roping after losing enough health to die; that is a separate issue, and if anything needs to be fixed in *that* case it is the fact that a zombie worm can keep moving.)

- When computing the possibilities for firing a projectile, a CPU worm follows the paths with staggered pixels. However, a projectile's actual collision path sweeps a 7x5 rectangle, which may collide in a place the CPU worm didn't check. This can result in the CPU worm accidentally throwing a Grenade which bounces back onto itself, regardless of its CPU skill level.
- When the Pneumatic Drill is used on top of an Oil Drum, it does not cause an explosion. (It does, however, if a corner or side of the Oil Drum is hit.)
- The camera follows an opponent's active worm and cursor even if they are Invisible. This gives an advantage to players who are running W:A at a low resolution, since this narrows down the opponent's location.
- There are several performance issues with large maps, particularly during the spawning of randomly placed crates.
- In certain situations, it may be possible to have Double Time and Crate Shower crates in the weapon inventory, however these utilities will appear invisible due to not having weapon inventory icons.
- The weapon tips in the sprites of worms holding the Uzi, Handgun and Minigun weapons do not correspond with the actual coordinates from where the bullets emerge.
- On maps 32568 pixels tall or taller, objects will not drown, instead remaining on the bottom and blocking the end of the turn.
- In some cases, fall damage is incorrectly not being applied to falling worms.

## Cosmetic issues

- PNG maps with more than 64 non-black colours create glitches in the soil texture when land is destroyed. (Note that the glitches can be avoided in 3.6.25.1+ by disabling Placement Holes, at the cost of losing soil textures and some or all background graphics.)
- During fast-forward, rising water can cause a graphical glitch in which there is a temporary shift between the terrain and sprites. (This may only happen when the resolution is high enough to letterbox a cavern terrain.)
- Several sprites for in-game graphics contain various errors:
  - In the sprite of a Worm holding a Freeze, the worm is incorrectly shown as standing on a downward slope if it is standing on an upward slope. A fix for this will be bundled with the next update of Gfx0.dir and Gfx1.dir (delayed because it is hard to get the palette just right).
  - In the sprite of a Worm firing a Minigun at certain angles, some stray pixels are visible at a 90 degree angle from the direction of the aiming angle.
  - In the sprite of a Worm aiming or swinging a Baseball Bat, the bat's tip appears cut off at certain angles.
  - In the sprite of a Worm activating a Suicide Bomber, the worm is incorrectly shown as standing on flat terrain if it is standing on a slope.
- With ambient music enabled, sudden switches in the music track (for example, when Sudden Death initiates) can cause an ugly audio pop. It is unknown whether this happens on all systems.
- Sometimes some buttons, e.g. the light-bulb icon in the host/join screen, are replaced by a small (16x16 pixels) black square.
- When viewing a map of nonstandard size (something other than 1920x696) in the Map Editor, the cavern borders are not rescaled or moved; they are shown as if the map is still 1920x696. Also, the water level will not be proportionally correct.
- The background debris in the front end moves at a speed dependent on your video refresh rate.
- The description for the eighth mission, "Big Shot", is wrong. The error is present in all translations.
- Long weapon names may not fit in the bottom text bar of the weapon selection panel (especially when the weapon has a delay and limited ammunition).
- Various kinds of dynamic in-game objects have fixed count limits. Reaching limits may cause e.g. multiple explosions to cause older flamelets to disappear, or dud mines to not emit visible smoke.

## Interoperability issues

- Certain versions of Media Player Classic may crash when W:A is started.

- In the Steam edition of the game, it is not possible to open a replay if the game is already running.
- In the Steam edition of the game, it may not be possible to open a replay if its filename contains international characters. To work around this problem, rename the file and remove international characters from its filename.
- Temporary files use fixed locations, which may cause conflicts for multiple instances of the game. For example, opening two replay files, then rewinding the first one would cause the second one's map to be used, which will result in playback desynchronization.
- When certain compatibility flags are enabled in the WA.exe file's properties, W:A may crash when attempting to edit or create a team. The crash is caused by a problem in Windows' compatibility layer. Clear any unnecessary compatibility options to resolve this problem.
- When certain compatibility flags are enabled in the WA.exe file's properties, it may not be possible to select high resolutions on the options screen. Clear any unnecessary compatibility options to resolve this problem.
- Norton Personal Firewall, and possibly other personal firewalls, do not gracefully detect the replacement of "WA.exe" with a new version.
  - Symptom: You can no longer connect to WormNET.
  - Workaround: Each time after you install a new W:A update you need to delete the entry for "WA.exe" from your firewall so it can create a new, working entry.
  - Plan: In a future version this will be addressed by "faking" accesses to the needed ports before going full-screen, so that the user has a chance to respond to firewall windows that may pop up.
- PeerGuardian may prevent W:A from successfully connecting to a WormNET server.

## Replay/logging issues

- In recorded replay files of online games, only the passage of game time separates lines of chat. Chat that took place during network lag or game loading will be displayed all at once during playback.
- In situations where a Mine is triggered after the end of a turn but before the beginning of the next, a Checksum Spurious and subsequent Checksum Missing may be reported during playback or in an exported log.

## Further Troubleshooting

Additional troubleshooting resources are available at the following locations:

- "Troubleshooting FAQ" on the Worms Knowledge Base Wiki: [http://worms2d.info/Troubleshooting\\_FAQ](http://worms2d.info/Troubleshooting_FAQ)
- Team17 Worms Armageddon forum: <http://forum.team17.com/forumdisplay.php?forumid=47>
- #Help channel on WormNET

## 5.0 Footnotes

1. If a Worm dismounts a horizontally-stationary Ninja Rope in direct contact with the ground, it will land instantly, thus ready to do other things without delay. It is not always possible to extend a rope to the length necessary for this to happen — since it extends and retracts 4 pixels at a time, it may stop with 1-3 pixels of room remaining between Worm and ground. Also, even if a rope appears to be horizontally stationary, it may have a microscopic amount of momentum. Following are ways to recreate the circumstances required for an instant rope dismount:
  - (*All versions of W:A*) Worm is standing in a confined space (e.g. at the bottom of a tunnel 9 pixels wide and at least 8 pixels high), and shoots the Ninja Rope straight upward. It may then retract and extend the rope and/or fire a weapon, as long as it does not nudge the rope left or right. Then, when that rope is extended to maximum length (either by not moving at all, or by re-extending the rope as far as it will go) the Worm is in direct contact with the ground.
  - (*v3.6.23.0 and later*) Same as above, but Worm is not required to fire the rope from a confined space. It may do so from any standing position.
  - (*v3.6.23.0 and later*) Worm is in midair, with no horizontal velocity, and shoots the Ninja Rope straight upward. There is a 25% chance that the rope will be phased such that it is possible to put

the Worm in direct contact with the ground.

- (All versions of W:A) Same as above, but Worm must be in a 9-pixel-wide tunnel at the time the rope connects.
2. This bug is emulated for compatibility with older versions of W:A. An emulated crash ends the game in a draw for those using a newer version. The older versions will still crash.
  3. The **wa://** protocol can be used to join or host games with advanced parameters. The format is **wa://address?param1=value1&...&paramN=valueN**. Specifying a blank address will cause the game to host a game with the specified parameters. The following parameters are supported:
    - **pass** or **password** – specifies the game's password.
    - **id** or **gameid** – specifies the game's ID, as used on WormNET.
    - **scheme** – specifies the channel scheme to be used. This setting should be identical on all ends. Since this information isn't transmitted via the game peer-to-peer connection, unmatching values can cause a desynchronisation. For more information on the channel scheme format, see [http://worms2d.info/WormNET\\_\(Worms\\_Armageddon\)#Channels](http://worms2d.info/WormNET_(Worms_Armageddon)#Channels)  
Using the scheme parameter, it's possible to create direct IP games with rope knocking enabled. To do this, the host must run **WA.exe wa://?scheme=Pf**, and other players must run **WA.exe wa://address?scheme=Pf**.  
If the game is hosted on a TCP port other than the default one (17011), the port can be specified with the syntax: **wa://address:port?parameters...**
  4. The following registry tweaks allow setting certain game options, most of which can also be set using the **Advanced Options** screen. These files are located in the **Tweaks** folder, and are activated by double-clicking them (the game should not be running).
    - **BackgroundGradientParallax\_Disable.reg, BackgroundGradientParallax\_Enable.reg** - enable or disable the dithered gradient parallax effect introduced in the same version. (introduced in v3.6.30.0)
    - **FrontendUseDesktopWindow\_Enable.reg, FrontendUseDesktopWindow\_Disable.reg** - Enables a workaround to allow the front end to render correctly under Wine. (introduced in v3.6.30.0)
    - **ForceWineVirtualDesktop\_On.reg, ForceWineVirtualDesktop\_Off.reg** - Causes W:A to automatically restart itself under a Wine virtual desktop. (introduced in v3.6.30.0)
    - **LargerFonts\_On.reg, LargerFonts\_Off.reg** - Use a larger font in some places in-game and in the front end. (introduced in v3.6.28.0)
    - **LegacyUtilityKey\_On.reg, LegacyUtilityKey\_Off.reg** - Use the key used for typing the ` character for the current input language to select utilities, instead of using the key under **Escape** (for non-US keyboard layouts). (introduced in v3.6.28.0)
    - **LoadWormKitModules\_Enabled.reg, LoadWormKitModules\_Disabled.reg** - Load WormKit modules (DLL files starting with "wk") on startup. (introduced in v3.7.0.0)
    - **MapAreaWarnLimit\_Always.reg, MapAreaWarnLimit\_Default.reg, MapAreaWarnLimit\_Unlimited.reg** - Sets the threshold for which to display the map loading prompt, to prevent a Denial of Service attack by loading a very large map. (introduced in v3.6.28.0)
    - **SkipIntro\_On.reg, SkipIntro\_Off.reg** - Skips the intro and logos shown upon W:A startup; identical to the /nointro command line option. (introduced in v3.6.30.0)
    - **OfflineRopeKnocking\_On.reg, OfflineRopeKnocking\_Off.reg** - Enables "rope knocking" in Offline Multi-Player and Quick CPU games. (introduced in v3.6.24.2)
    - **Phone\_Disable.reg, Phone\_Enable.reg** - Disables or enables the in-game telephone icon (used for notification of new chat messages). (introduced in v3.6.26.4)
    - **RegisterAssociations\_Automatically.reg, RegisterAssociations\_Manually.reg** - Enables associating W:A with replays and wa:// on W:A start-up. (introduced in v3.6.30.0)
    - **SlowFrontendWorkaround\_Alternative.reg, SlowFrontendWorkaround\_Off.reg** - Enables a compatibility tweak for certain new video cards, which may resolve low responsiveness and refresh rates in the front end. Even if there is no frame rate problem, it can reduce the black-out period when switching between dialog screens. (introduced in v3.6.26.5, v3.6.28.0)
    - **SmoothBackgroundGradient\_Disable.reg, SmoothBackgroundGradient\_Enable.reg** - Disables or re-enables the dithered background gradient in all in-game detail levels. (introduced in v3.6.30.0)
    - **StereoEffects\_Disabled.reg, StereoEffects\_Normal.reg, StereoEffects\_Reversed.reg** - Disable, enable (default) and reverse the stereo sound effects. (introduced in v3.6.29.0)
    - **TimerWorkaround\_On.reg, TimerWorkaround\_Off.reg** - Prevents W:A from using the system's high-resolution timer. (introduced in v3.6.20.1)

- **UseCommunityServerList\_Enabled.reg**, **UseCommunityServerList\_Disabled.reg** - Load CommunityServerList.htm (instead of ServerList.htm), which redirects to a third-party server list linking to community WormNET servers. (introduced in v3.7.0.0)

## 6.0 Credits

<b>Lead Code</b>	<b>Karl Morton</b>
<b>Lead Art</b>	<b>Dan Cartwright</b>
<b>Original Concept</b>	<b>Andy Davidson</b>
<b>Lead Support Code</b>	<b>Colin Surridge</b>
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<b>Scenario Art</b>	<b>Tony Senghore, Rico Holmes, “Jan The Man”</b>
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<b>QA Manager</b>	<b>Paul Field</b>
<b>Localisation</b>	<b>Paul Sharp</b>
<b>Update Coding/Design:</b>	
<b>Versions 3.5 to 3.7.0.0 and later</b>	<b>David Ellsworth — “Deadcode”</b>
<b>Versions 3.6.27.1 to 3.7.0.0 and later</b>	<b>Vladimir Panteleev — “CyberShadow”</b>
<b>Version 3.6.31.2b</b>	<b>Charles Blessing (Team17 Senior Programmer)</b>
<b>Update Localisation:</b>	
<b>French</b>	<b>“Jabba”, “LeTotalKiller”</b>
<b>German</b>	<b>“bonz”</b>
<b>Dutch</b>	<b>“Koen”</b>
<b>Spanish</b>	<b>“OutofOrder”</b>
<b>Russian</b>	<b>“Mr.X”, “CyberShadow”, “Shtirlitz”, “StepS”</b>
<b>Update Testing and Research:</b>	
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Murray "Muzer" Colpman,  
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Paulo "Twyrfer" Miranda,  
Simon Arlott,  
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"StepS",  
Trey Brisbane,  
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Vincent Povirk,  
and others**

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## **7.0 Bug Reporting**

Feedback may be provided through the Team17 Worms Armageddon forum, located at:

<http://forum.team17.com/forumdisplay.php?forumid=47>

Before posting, please make sure to read the threads marked as "Sticky" relevant to your inquiry.