Manual

John Morrison

Version: 1.17

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1   Quick Start

1.1 First Time Player

1. Run Lin/Winbolo.
2. Select Tutorial from the Network Selection window.
3. Click OK.
4. Follow the on screen prompts.

1.2 Single Player

1. Run Lin/WinBolo.
2. Select Single Player.
3. Click OK.
4. Select your map and modify the game setting to your liking.
5. Click OK.

For more information on game settings see section. Section 3.1.6.

For more information on playing against computer controlled tanks see Section 2.9 Brains/How to Play without a network.

1.3 LAN Game

To start a LAN game:
1. Run Lin/WinBolo.
2. Select LAN Game.
3. Click OK.
4. Click New.
5. Select your map and modify the game setting to your liking.
6. Click OK.

For more information on game settings see Section 3.1.6

To Join a LAN Game:
1. Run Lin/WinBolo.
2. Select LAN Game.
3. Click OK.
4. Click Refresh.
5. Select the game you wish to join.
6. Click Join.

1.4 Internet

To start a Internet game:

1. Run Lin/WinBolo.

2. Select Internet Game.

3. Click OK.

4. Click New.

5. Select your map and modify the game setting to your liking.

6. Click OK.

For more information on game settings see section. Section 3.1.6.

To Join an Internet Game:

1. Run Lin/WinBolo.

2. Select Internet Game.

3. Click OK.

4. Click Refresh.

5. Select the game you wish to join.

6. Click Join.

2 Introduction

Welcome to the Lin/WinBolo manual. It provides information on a wide variety of topics from how to play the game, to a reference section on windows and menus as well as a trouble shooting section.

Lin/WinBolo Manual is copyright © 2000-2006 John Morrison.

Portions, in particular section 2.7 are based largely upon the Bolo Manual copyright © 1987-1995 Stuart Cheshire.

2.1 What is Bolo?

The game of Bolo is a tank battle set on an island, for up to 16 players, using separate computers and monitors, so that each cannot see what the others are doing. This enables players to lay minefields which others cannot see, and to hide under the cover of forest and watch (or ambush) other players without being seen.

Another important factor of Bolo is that it is not a two player game, where your objective is to kill your single enemy, but a multi-player game, where you can work as teams. In this game you are not alone when you find yourself cornered by the enemy — you can shout for help, and have your allies break cover and come out of the forest shooting, to wipe out your attackers and rescue you.

2.2 What is LinBolo/WinBolo

WinBolo is an implemented of Bolo from scratch on the Linux and Windows platform. Both the Linux and Windows versions are network compatible and their names are used interchangeably within this manual except in specified sections. Screen shots from windows version.

2.3 System Requirements

2.3.1 Windows

Windows 95/98/NT4/2K

DirectX 5 or greater (and DirectX capable video card)*

For NT4 you must have DirectX3, Service Pack 5+

Display capable of 16 bit colours or greater

8Mb of RAM**

Winsock

* It is recommended that you have 250K of free display RAM as WinBolo will move all graphics and processing to the video card (if supported) resulting in a performance increase.

** Although the game processing only uses about 550K of RAM loading of DirectX modules result in 5Mb of RAM being required. (Removing sounds may save 500K)

2.3.2   Linux:

Linux x86

Linux 2.2

X Server (XFree 3.3.6+) capable of 16 bit colour

8Mb RAM

Glibc 2.2

GTK 1.2*

SDL 1.2**

SDL_Mixer 1.2 ***

SDL_TTF 1.2 ***

*GTK can be downloaded from: http://www.gtk.org/

**SDL can be downloaded from: http://www.libsdl.org/

*** SDL Libraries can be downloaded from: http://www.libsdl.org/libraries.html

2.4 Shareware Information

LinBolo, WinBolo   (c) 1998-2006 John Morrison

Bolo   (c) 1987-1995 Stuart Cheshire

NOTE: This file is largely based upon the Bolo readme.shareware file as WinBolo shareware scheme is similar to Bolo. The terms WinBolo and LinBolo can be freely interchanged as the shareware scheme is the same for both. If you register LinBolo you are free to use WinBolo. If you register WinBolo you are free to use LinBolo. I.e you only have to register once.

The price of WinBolo is $25 in US Dollars. You have the opportunity to actually play the game before you decide whether it is worth the price I ask. WinBolo has no copy protection, no expiry date, no network serial number registration, and no disabled features which you cannot use until you pay. My attitude is that some people are honest, and some people are not. The dishonest ones will never pay anyway, so all the software protection just inconveniences the honest people.

If you want to show WinBolo to a group of 10 friends who have not seen it, they are not required to buy their own copies before they can play, as they would if WinBolo were like most commercial software. However, if YOU are a regular WinBolo player, and you wish to see WinBolo continue to be improved, then please pay your shareware fee. Knowing someone else who has paid does not count as "having paid your shareware fee." The company Kagi handles registration of WinBolo. You may register in one of the two following ways:

1. Visit http://order.kagi.com/?XYV which allows credit card orders to be placed via the internet.

2. Run the "Register.exe" application located in the WinBolo directory. Follow the instructions to register by credit card or cheque/money order.

If you can't afford anything at all then obviously I'd rather you played WinBolo than not, so send me a post card instead. Contact me via my web email form for address details. Ultimately, it's down to your own conscience to decide.

If you are a school teacher who wants to register for a WinBolo 'site license', please be considerate to my time. I don't have a marketing department to negotiate prices and conditions based on the number of computers you have, how old the students are, etc. This is shareware. YOU decide what a fair price is. A lot of school teachers have collected $5 each from the students who want to play, which I approve of -- too many children grow up thinking that the only way to get software is to steal it because it is so expensive that they could never afford to buy it legally. I'm glad to be able to offer them a game they enjoy at a price they can afford.

Kagi automatically replies with a confirmation email if you include your email address when registering. For a written acknowledgment of your payment Kagi charges an additional $1 to cover posting costs.

WinBolo may be distributed freely by electronic means, such as anonymous ftp services. WinBolo may be distributed on any form of physical media provided the author is contacted prior to the distribution. If it is included on a shareware disk or cover disk then the author would appreciate a copy free of charge though it is not a requirement. (Notification however is) When notifying please include all relevant details.

WinBolo may not be used for any commercial purpose whatsoever without the express written permission of the author.

2.4.1   Legal Information

LinBolo, WinBolo   © 1998-2009 John Morrison

Bolo   © 1987-1995 Stuart Cheshire

WinBolo is a version of Bolo by Stuart Cheshire, implemented from scratch on the Windows platform by John Morrison and released with the consent of Stuart Cheshire. Shareware proceeds are split between both parties.

Although copyrighted, the WinBolo software may be freely distributed by electronic means, provided that it is not modified in any way and that it is accompanied by all of the original documentation unaltered. However, ownership of and interest in this software, together with all associated codes, techniques, software tools, formats, designs, concepts, methods, ideas, and documentation shall remain with the author. Use and distribution of this software is governed by the following terms in an effort to reasonably ensure that this software will remain freely available and that no one other than the author will derive a commercial benefit from this software.

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2. Make as many backup copies of this software as you want.

3. Pay the author the Shareware fee ($25) and continue to use this software after the one month trial period expires.

4. Freely distribute this software via wire or electronic communications (BBS's and online information systems) for the sole purpose of use by their customers.

5. Terminate this agreement at any time by destroying all copies of this software and derivatives of this software and cease distributing the same.

You may not:

1. Create any derivative works from this software.

2. Charge money for this software other than reasonable charges for downloading time or shipping expenses.

3. Charge money for use of WinBolo, such as in a commercial "WinBolo arcade". (If you have commercial plans along these lines, please contact me.)

Disclaimer of warranty:

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Although the author would appreciate any feedback and bug reports, the author shall not be responsible for correcting any problems which you discover or otherwise help you maintain and use this software. Furthermore, the author may at any time replace, modify, alter, improve, enhance or change this software.

Complete agreement:

This agreement constitutes the entire agreement and supersedes any prior agreements between you and the author concerning this software. This agreement cannot be amended, modified, or waived except in writing.

General:

If any provision of this agreement shall be found to be unenforceable, it shall be deemed severed from the remainder of this agreement.

2.5 History

Bolo was originally a multi-player game written in 1987 for the BBC micro**§**, a British microcomputer made by Acorn Computers of Cambridge in 1982.

§Although it cost only £235 ($400) and was 6502 based like the Apple II, the BBC micro had more in common with the Macintosh. It had its equivalents of QuickDraw, the sound manager, and an INIT loading mechanism. It supported cassette tape, floppy disks of various capacities, hard disks, and had a network file system, with the option of a quarter megabit CSMA network (called Econet) built in on the motherboard. It supported multiple additional slave processors of many different kinds, including the Acorn Risc Machine - the world's first dollar-per-MIPS processor ($27 for 27 MIPS) - which has now finally reached the USA in the form of the Apple Newton and the 3DO. Its incomparably good BASIC taught me to use functions, procedures, recursion, local

variables, pointers, while loops etc. so that for years I never understood the "Goto Considered Harmful" debate - but then I had never used one, or a "gosub" for that matter. It had inline assembler, like modern C compilers, but still provided Operating System calls to do everything, with dire warnings that IBM PC style poking the hardware would cause your program to fail on multi-processor configurations or on later versions of the BBC micro hardware. I offer my gratitude to the geniuses who created this machine which gave me my start in the computer business.

Bolo has no connection with the game of the same name for the Apple II, although it is a similar game. The name is an unfortunate coincidence.

The game Bolo is fundamentally based on communication between the computers running the game, and on communication between the players working together as teams. Bolo is the Hindi word for communication.

The last release of Bolo was 1995.

2.6 What is included in the archive (Windows)?

WinBolo.exe	Main game executable.
WinBoloDS.exe	WinBolo Dedicated Server executable.
BoloSounds.bsd	WinBolo sounds file.
Register.exe	Application allowing you to register via email or print out registration forms.
Readme.txt	Readme file.
Readme (shareware).txt	Information on WinBolo and registering.
Bug Report Form.txt	Bug Reporting Form.
Brains (Folder)	Location to put plugin Brains for WinBolo to use.
Languages (Folder)	Location to put language sets for WinBolo to use.
Maps (Folder)	A collection of popular maps. View the Readme file in that directory for more information.
Manual (Folder)	Folder containing the WinBolo users manual in PDF form.
Sample Code (Folder)	A collection of C sample code and documents on writing WinBolo brains, map viewers and network addons.

2.7 What is included in the archive (Linux)?

Linbolo	Main game executable.
Linbolods	LinBolo Dedicated Server executable.
BoloSounds.bsd	LinBolo sounds file.
readme.txt	Readme file.
readme_shareware.txt	Information on LinBolo and registering.
Bug Report Form.txt	Bug Reporting Form.
brains (Folder)	Location to put plugin Brains for LinBolo to use.
maps (Folder)	A collection of popular maps. View the readme file in that directory for more information.
manual (Folder)	Folder containing the LinBolo users manual in PDF form.
sample_code (Folder)	A collection of C sample code and documents on writing LinBolo brains, map views and network addons.

2.8 Is it compatible with (Macintosh) Bolo?

Regrettably not. The networking protocols used by Bolo and WinBolo are radically different. I have plans to make them compatible in the future. (but don't ask when) LinBolo and WinBolo are network compatible.

Also see section 3.6, Difference between Bolo and WinBolo for more details.

2.9 How to Play

2.9.1 Driving the Tank

These are the default keys for driving the tank.

Left hand:			Right hand:	KB
Accelerate	Q		Turn anticlockwise	O
Decelerate	A		Turn clockwise	P
Lay Mine	Tab		Shoot	Space

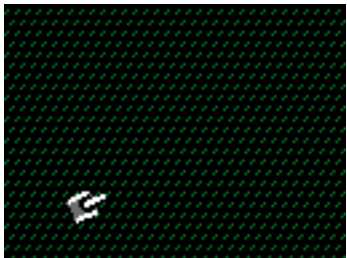The key assignments can also be changed if you prefer something different.
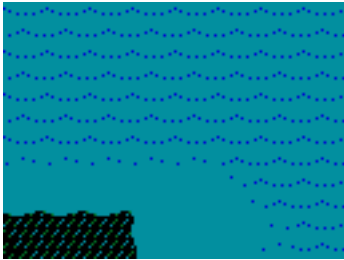
2.9.2 Beginning the Game
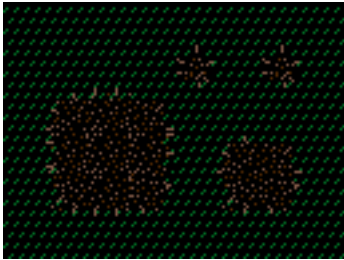
When you start the game, your tank is out at sea, on boat. You should head towards the island and drive off the boat onto the land. You may have to be going quite quickly to leave the boat.
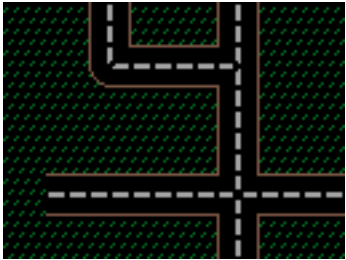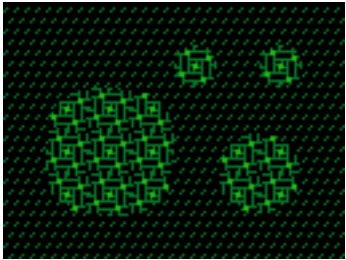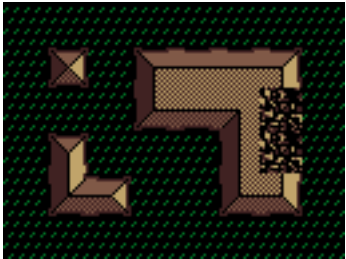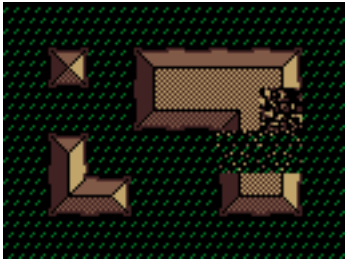
Boats can sail up rivers, but not under the low floating bridges which are laid by tanks. To pass a bridge you must either leave the boat and proceed on land or shoot the bridge to destroy it. Do not rely too much on boats as they are extremely vulnerable — they are sunk by a single hit. If you are on a boat when this happens you will be dumped into the water and will be at the mercy of your attacker. If you are out in 'Deep Sea' (water shown with dark ripples in it) then your tank will sink and be destroyed immediately — so take care!
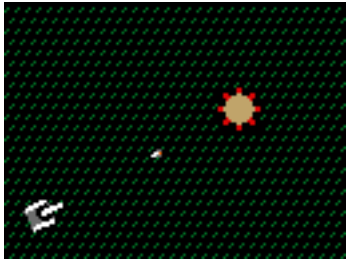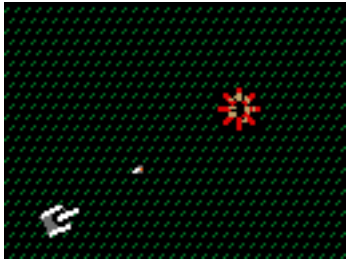
2.9.3 Terrain

On the island you will encounter different kinds of terrain and obstacles which have different properties.

Terrain	Name	Top speed	Special notes
	Grass	Medium	Most of the island is covered with grass.

	Water	very slow (except when on a boat)	If you stay in water for too long (without a boat) then the tank's stocks of shells and mines will be depleted.
	Deep Sea	instant death (except when on a boat)	Don't drive your tank into deep sea without a boat — it will sink and be destroyed. You cannot build anything — roads, bridges, boats or buildings — on deep sea. Deep sea is immutable and unchanging throughout the game
	Moored Boat	Fast	You can drive your tank onto moored boats to travel quickly by river and sea.
	Swamp	very slow	Swamp is usually found in areas near to water. It looks quite similar to normal grass, but will bog your tank down, so watch carefully where you go.
	Mine		You can lay mines on any terrain (except buildings, boats or water) and they will explode and damage any tank which goes over them.
	Crater	very slow	Exploding mines leave craters in the ground. Craters adjacent to water will flood. You can make use of this to build artificial waterways, both for transport by boat and for defensive purposes.

	Road	fast	Build roads where you expect to travel frequently.
	Bridge	fast	Build bridges over rivers you expect to have to cross frequently so that you won't lose shells and mines by driving through the water every time.
	Forest	slow	If your tank is completely enclosed in forest, surrounded on all sides, then other players and pillboxes will not be able to see you. Forest also provides the source of building materials.
	Buildings	none (barrier)	You can build buildings to make a barrier and provide cover from enemy fire.
	Damaged Building	none (barrier)	If you shoot a building then it becomes damaged.
	Rubble	very slow	If you shoot a building repeatedly then you can reduce it to rubble which you can drive over, but only very slowly.

	Pillbox	none (barrier)	Pillboxes shoot at any enemy tanks which come into range. You can capture them to make them loyal to yourself, so that they will shoot your enemies for you.
	Damaged Pillbox	none (barrier)	When you shoot a pillbox, it becomes damaged. You can estimate how damaged it is from its appearance on the screen.
	Dead Pillbox	medium	If you completely destroy a pillbox, then it becomes inactive and you can drive over it to pick it up.
	Refueling base	medium	Refueling bases provide your tank with more shells, mines and armour.

2.9.4   Pillboxes

Once on land you will encounter automatic pillboxes which shoot at any enemy tank which comes within range. They are very accurate, and, when provoked, can fire very rapidly, so beginners should think twice before carelessly attacking one. In a straightforward confrontation, with a tank and a pillbox both firing at each other as fast as they can, a pillbox will win every time. To destroy a pillbox requires more subtlety. You must attack it quickly, score a few good hits, and then turn and run to get out of range before it has time to destroy you. Be patient, stay away from pillboxes unless you have full armour, and always remember the option of hiding in the forest when confronted by pillboxes or hostile players. Remember also that there is no reason why you should kill a pillbox in one go — after damaging it, you can go to a refueling base to replenish your shells and armour, and then come back to finish it off.

Pillboxes can never be totally destroyed, just disabled. When you are confident enough, you should try to do this, because then you can drive over the pillbox and pick it up. It will be repaired, and will become loyal to you and your allies. Later, when a suitable location is found, it can be placed back onto the map (see "Farming and Building" below) and left to attack enemy tanks. This is the key to the game — not fighting the other players yourself — but claiming a territory for yourself and using the pillboxes to defend it against other players.

More strategies for capturing pillboxes call be found at the Official Bolo Homepage.

2.9.5 Refuelling Bases

Tanks enter the game with limited shells and mines, so the first thing you must do before you can attack pillboxes or other tanks is find a refuelling base to replenish the tank's supplies of shells, mines and armour. Most bases are defended by nearby pillboxes, but there are a few which are isolated and easily accessible — it is up to you to explore the map and find them.

On the right of the screen you will see an indication of the stocks of shells, mines and armour of the nearest refuelling base to your tank (if there is one nearby). When you drive onto the base, you will see the stocks go down as your tank is refuelled. The base will slowly replenish its stocks automatically. The base will also be automatically captured, and will become loyal to you and your allies. An enemy tank cannot drive onto your base to refuel, although it can shoot your base and deplete the armour that it has. When the armour is all gone, there is nothing to stop the enemy tank from driving onto your base and capturing it.

The object of the game is, eventually, to have captured all of these refuelling bases.

2.9.6 Farming and Building

Farm Trees

Build Roads or Bridges

Build buildings (or boats)

Place or repair pillbox

Lay mine
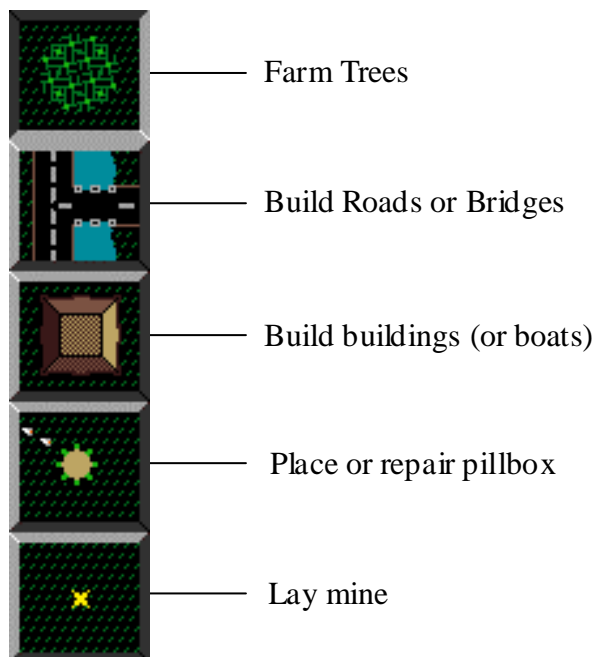
To build, first select the mode you require by clicking on the appropriate button on the left side of the screen, and then click on the map.

A man will leave the tank, run to the square, build the required object, and return to the tank. You can only build if you have sufficient building resources, so you will need to farm trees first before you can build anything. Building a **road** or **bridge** or **building** costs you $1/2$ a tree from the tank inventory and building a **pillbox** requires a whole tree. **Boats** are expensive — they cost five trees to build.

Some other restrictions: You cannot build on deep sea, on a moored boat, or on forest (farm it or shoot it down first).

You can also repair a damaged pillbox by selecting 'Pillbox mode' and putting the cursor on top of it. Instead of putting down another pillbox, the man will repair the one which is already there — even if it belongs to someone else, although you probably won't want to do this normally. He may take up to whole tree, depending on how damaged the pillbox is.

Laying mines this way is an alternative to using 'Quick' mines. It does take slightly longer, but has the advantages that you don't actually have to drive the tank to the place to lay the mine, and that the mines you lay are invisible even if someone is watching you while you do it.

Your computer informs your allies' computers whenever you lay mines, so that they can be marked on their maps. Once they are marked, they are never erased, even if you break the alliance. Of course, any mines you lay *after* the alliance is broken are not shown on their maps, nor are any you laid *before* the alliance was formed — only those laid during the time you were actually in the alliance.

If the man gets shot by another player while outside the tank, you will not be able to build any more. A new man will be parachuted in for you, but this may take several minutes, during which time you will not be able to build anything.

Forests grow all the time, so trees you farm will be replenished slowly.

2.9.7   Alliances

At first, when you capture a pillbox for yourself, it will shoot at **all** other players. When there are several people playing, one person does not have much chance of winning on his own, so you will want to work as a team with some of your friends. So that your pillboxes know not to shoot at your friends, a formal alliance must be declared. To do this:

1. Select a person whose alliance you would like to join on the "Players" menu and select "Request Alliance" on the "Bolo" menu.

2. The requested person will receive a popup window asking them if they wish to form an alliance with the requesting player. They have the choice to allow them in or not to.

If you are already in an alliance, you must select "Leave Alliance" first before you can join someone else's.

Members of an alliance can also see each other's mines as they are layed, (this does not apply to mines layed before the alliance was formed — they remain secret.)

At any time, a player may opt to leave the alliance simply by selecting "Leave Alliance" and he is then on his own.

Any member of the alliance may also invite a new member in at any time. To do this, the newcomer must select "Request Alliance" first. The alliance member allows them to join via the alliance request popup window.

If two people decide that they wish to 'go it alone' and break free from their previous alliances then they should **both** leave their old alliance(s), and then both select "Request Alliance" to begin a new alliance.

2.9.8   Building a Fortress

Players should pick a location in which to build a home base. The art of building a secure fortress is an important skill to be learned, and different players favour many different design strategies, but one common feature is that all bases rely on pillboxes for defence. Care must be taken in the placement of pillboxes so that they give each other adequate covering fire (a pillbox left alone at the corner of a base will be picked off easily by attackers) but they must not be placed too close or they risk hitting each other by accident when firing at the enemy.

Other common features of fortresses are thick walls of buildings around the edge, large areas of tarmac in the centre, and invisible minefields hidden around the approaches. Minefields are invisible to everyone except the player who laid them and his allies.

When mines explode, they leave craters which will slow down any tank which tries to drive through them. An exploding mine will also set off any adjacent mines — so a long line of mines will all go off together in a chain reaction. If you don't want this to happen, you must lay mines in a checker-board pattern so that they don't set each other off. Craters adjacent to sea or river will flood with water, so setting off a long line of mines leading to the sea will have the effect of creating an artificial river. Using this method, you can create a moat around your fortress. As well as slowing down tanks, water also damages any shells and mines carried by the tank, so any tank caught in your moat will soon be helpless.

Players may also take advantage of natural features such as swamps around the base to slow down the approach of attackers. Forest slows down the approach of tanks too, but this benefit is more than outweighed by the fact that tanks cannot be seen whilst they are

under the cover of trees, and this enables enemy tanks to make surprise attacks. This means that a fortress surrounded by forest is extremely vulnerable. Unfortunately, you *need* forest in order to get the raw materials you need for making buildings, bridges and roads, so a fortress positioned well away from the nearest forest is also vulnerable because you will not be able to make the necessary repairs to keep it secure.

It should be noted that due to the varying tactics of players forts are less effective against veteran players in tournament and strict tournaments.

2.9.9   Mine Laying

You can lay mines in two different ways — by sending the man out to bury them (as described in "Farming and Building" above) — or by just dropping them onto the ground where the tank stands by pressing the 'Tab' key. This can be quicker, but all other tanks which are near to you will see mines that you lay this way.

If you're out of shells and low on armour and being chased along the road by an enemy tank, remember this. Don't assume that you can kill him just by dropping mines in his path, because he will see mines you lay this way and will be able to avoid them.

2.9.10   Mine Clearing

It is not normally necessary to change the range of the tank's gun, since shells hit the first obstacle in their path anyway. The time when you may want to control the range manually is when you want to deliberately land a shell on top of a mine to set it off. You can also use this if you suspect that you are near to an enemy minefield. Change range and fire at the same time and you will saturate a path in front of the tank and set off any mines which may be there.

If you want to use these features, the targeting controls work like this:

Press $\boxed{+}$ again to bring the cursor nearer to the tank (shorter gun range).

Press $\boxed{9}$ to move the cursor further away from the tank (longer range).

The scroll wheel can also be used to change the gun sight range.

2.9.11   The Screen

The Info Boxes on the right hand side of the screen show the status of the various tanks, pillboxes and refuelling bases in the game. The screen display is complicated but learning the simple colour conventions should make it easier to understand:

A **red square** indicates a **hostile** tank/pillbox/base.

A **green circle** indicates a **friendly** tank/pillbox/base.

A **hollow circle** is a special case of the green circle (friendly) which indicates **your own tank** in the Tank Info display.

Each icon also has a **shrunken version** which indicates a pillbox which is currently **being transported** by a hostile tank, a friendly tank or yourself, respectively.

At the start of the game, all pillboxes are indicated by red squares because they are all hostile to you, but the drawn in a chequer-board pattern. This enables you to distinguish between pillboxes which are just hostile to everyone because no-one has captured them yet, and pillboxes which are actively hostile because they are now loyal to an enemy tank.

Similarly, all refuelling bases are initially friendly so they are indicated by a green circle, but the circle is drawn in a chequer-board pattern. This is so that you can tell the difference between bases you actually *own*, and bases which are just friendly because no-one else has captured them yet.
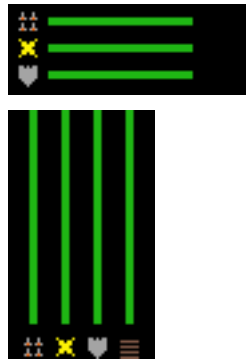
Below the base indicators is the base stocks display. These indicate the stocks of the closest friendly refuelling base, if there is one nearby. The first bar represents the number of shells the base has in stock, the second bar represents the number of mines the base has in stock, and the bottom bar represents the amount of armour the base has in stock.

To the right are similar indicators displaying the current stocks of your tank. The bars show the number or amount of shells, mines, armour and building materials that your tank has.

The map view in the centre of the window uses the same basic red/green colour scheme as the status indicators:

Tanks are identified by the colour of the turret. **Red** indicates a **hostile** tank, and **green** a **friendly** one. To make sure you never get confused when there are a lot of tanks on the screen, **your own tank** is always marked by a **black turret** to make it stand out clearly.

Refuelling bases are initially shown with a dotted pattern, which becomes green when you capture them. In a hostile refuelling base the marking is red instead.

You can tell whether a pillbox is hostile by looking at the colour of the guns sticking out of it. Hostile pillboxes have **red** guns, friendly ones are shown with **green** guns. You can also by looking at a pillbox is how damaged it is, and this will give you some idea of how many more hits are required to destroy it.

2.9.12   Remote Views

 Select 'Pillbox View'   Normal 'Tank View'

If you leave your base defended by pillboxes and go out attacking someone else, you may be worried that your own base could be under attack itself. You can check by occasionally switching back to a 'Pillbox View'. Each press of the pillbox view key cycles to the next pillbox which is owned by you (or your alliance). When in Pillbox view, you can also use the cursor keys to switch view between neighbouring pillboxes.

2.9.13   Notes:

- The game is complicated, so there is no need to try to do everything the first time you play. To get the feel of the game, just find a refuelling base and get some shells, shoot at each other a bit, and perhaps lay a few mines. As you play the game however, you will begin to discover that the key to success is not just fast reflexes and a good eye for aiming in one-to-one combat. Team-work counts. However good a player is at combat, if he suddenly runs into three allied tanks coming through a forest together, then he will not have much of a chance. Eventually, when permanent bases begin to be set up, planning and strategy become vital. The player who is still running round the map using mercenary 'if it moves kill it' tactics will find more and more that he can't get near to the enemies he wishes to attack because they are inside their fortresses, behind rows of accurate and deadly pillboxes.

- Many players have problems driving the tank when they first play because they continually hold down the 'Q' key to try to make the tank go as fast as possible, especially when the tank is slowly plodding through marsh or water, and they want to get out quickly. What actually happens, is that as soon as they reach the road, the tank accelerates and they go flying off the other side of the road into the marsh again. **Don't hold 'Q' down!** Drive onto the road slowly, turn the tank round to face in the direction you want, and **then** press 'Q' to speed up.

- When you come out of water, remember that you may have lost shells and mines, so check your inventory before you start shooting at anyone!

- Remember that you can hide in forest. You can use this both to make surprise attacks, and to flee when being chased. If an enemy tries to chase you into forest, then he will probably waste most of his shells blowing trees away and it is likely that you will receive very little damage.

- Remember that repairing a dead or damaged pillbox with your man **never** claims ownership of it for you. To claim ownership you must pick it up with your tank first.

2.9.14 Other Maps

If you get bored of playing WinBolo on Everard Island, you can play on other maps by clicking the "Choose Map" button in the Game Setup dialog. There is a small selection of maps in the "Maps" folder inside the WinBolo folder. More maps and map making utilities can be found off the Official WinBolo Homepage. See the references section for more details.

2.10   Brains/How to Play without a network

If you are forced to leave the keyboard briefly in the middle of a game, there is no way to "pause" WinBolo like other computer games, because there are other live human beings out on the network playing also, and you cannot pause the universe by clicking a button.

Brains provide a way to take over if you need to leave your seat for a few minutes or don't have a network or people to play against. For each copy of WinBolo you only one brain can run at a time. Follow the directions for starting a LAN game listed in the quick start section, making sure to check the allow computer tanks mark in the Game Setup window. Join each computer/copy of WinBolo you want to run a brain on following the instructions in the starting LAN game section then from the Brains menu select which brain you wish to run. Brains also have other uses:

Opponents

If you have spare computers or a fast computer, you can run automated opponents on them, to play against when you don't have human opponents.

Allies

If you have spare computers, you can run WinBolo on them, ally those tanks with yours, and then hand control over to specialised ally Brains.

Cyborgs

The most specialised AI Brains play in conjunction with you, and allow hybrid human/AI control of your tank. They can perform automatic targeting and mine clearing, control building and farming functions, or even provide "head-up displays" showing tactical information.

These specialised Brains are also available from software archive sites and Internet News Groups. They should be placed into the "Brains" folder before you run WinBolo, and will appear on the "Brain" menu for you to select them.

If you are an experienced programmer, you can also create your own Brains in C, C++, Pascal, or another language of your choice. See Section 6.3 Writing Brains/Map Viewer/Utilities for more information. Note at this stage WinBolo does not include any functional brains with its standard distribution.

3 Reference

3.1 Windows

3.1.1 Main Window

For information on the main window see section 2.9 How to play

3.1.2 Network Selection

When starting WinBolo the player is greeted by the Network Selection window. From here the player can select the network game mode they wish to play. There are six options.
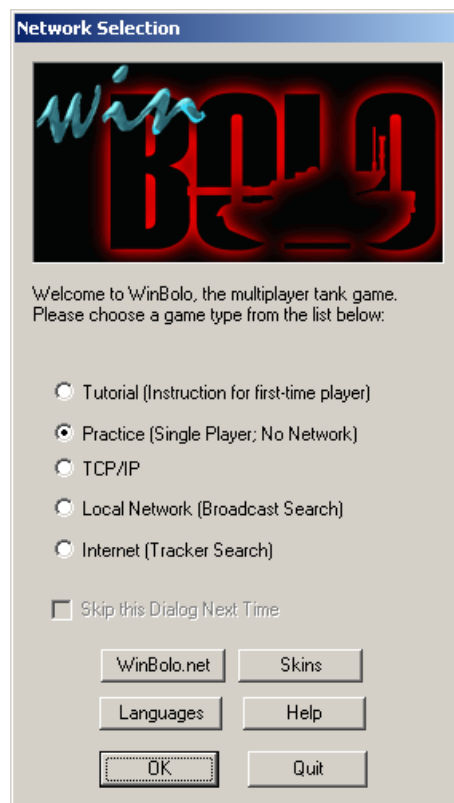
Tutorial: This mode is for first time players to get the hang of driving the tank and the various aspects of the game.
Single Player: This mode is for practising without a network. This will lead you to the game setup window.
TCP/IP: This mode will allow you to manually set the IP address and port for starting and joining network games.
Local Network: This mode will search your local area network for currently running games. This will lead you to the LAN Game finder window.
Internet: This mode will search the Internet game tracker for games running on the Internet. This will lead you to the Tracker Game Finder window.

After selected your mode click OK to continue. The Quit button will exit the game. The window also contains two other buttons. The Language button will lead you to the language selection window. The WinBolo.net Settings button will lead you to the WinBolo.net Settings window. The Skins button will allow you to set your playing skin. The Help button will open this manual file.

3.1.3 Language Setup
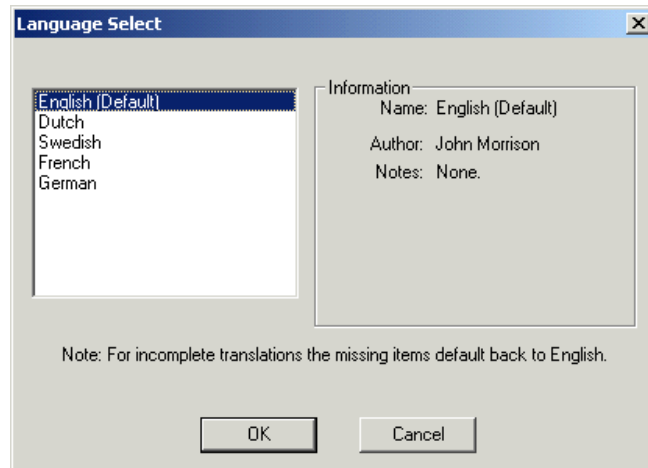
WinBolo has the ability to display and windows and in game messages in different languages. Upon start up WinBolo looks for a sub directory called "Languages" that contains WinBolo Language Set files. (They have the file extension wbl) The list of these files are then loaded into this window where the user can make their language selection choice. When a language item is selected the notes author name and notes appear in the information window next to the selection area.

Each language file varies in size depending upon its word length of the translations and its translation completion. For incomplete translations, ie items that are missing the default text, English is displayed. For people concerned with saving hard disk space and aren't interested in using different language sets the language folder can be safely deleted. NOTE: Languages are unavailable on Linux version at this stage.

3.1.4 Skin Setup
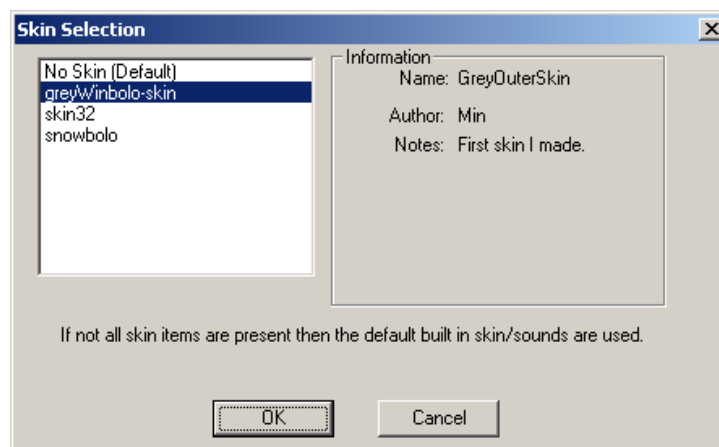
WinBolo allows players to customise the look of their game window by creating skins. For more information on creating skins see section 3.8 of this manual.

'

3.1.5 WinBolo.net Settings

The WinBolo.net settings window allows you set your WinBolo.net password and turn WinBolo.net integration on or off before entering into a game. For more information see later in this manual

3.1.6 Game Setup

When starting a new game the Game Setup window is displayed to set the games playing options. Here is where the player can select the map game style as well as other options detailed below.

There are three different game styles the player can choose:

Game Setup

Please select the options you want for your new game:

Choose Map   Selected Map: Everard Island (In built)

○ Open Game (each new tank comes pre-armed)
○ Tournament (free ammunition early in the game)
● Strict Tournament (no free ammunition at all)

☐ Allow Hidden Mines
☐ Allow Computer Tanks   ☐ and give them an advantage

☐ Game Password [   ]

☐ Game start delay [   ] seconds

☐ Game time limit [0] minutes

OK   Cancel

Open Game	For each new tank it start with full ammunition, mines and trees.
Tournament	At the beginning of the game tanks start with free ammunition. (but not mines and trees) As the game progresses and the number of neutral bases decrease the amount of free ammunition decreases.
Strict Tournament	Each new tank does not start with any free ammunition

It should be noted that each new tank always comes with full armour.

Allow Hidden Mines: enables mines (when delivered by the builder, not dropped by the tank) to be invisible to all players except for players in your alliance when you layed it. It becomes visible to other tanks when they move within one square of it. Disabling this options makes all mines visible to all players regardless of alliances or how they were placed.

Allow Computer tanks: Allows whether players in the game can activate computer controlled brains or not. The "and give them an advantage" option makes them more challenging. They are given the location of every base, pillbox and tank on the map even if they are out of visual range.

Game Password: Sets the password required to join the network game. It is unused if it is a single player game.

Game Start Delay: Sets the time in seconds that the game should wait for before starting play. It is useful to allow all players to join and download the game state and start at the same time.

Game Time Limit: Sets the time in minutes that the game should run for before ending.

3.1.7 LAN Game Finder and Internet Game Finder

The LAN and Internet Game Finder is a method of finding WinBolo games on your local network or over the Internet.
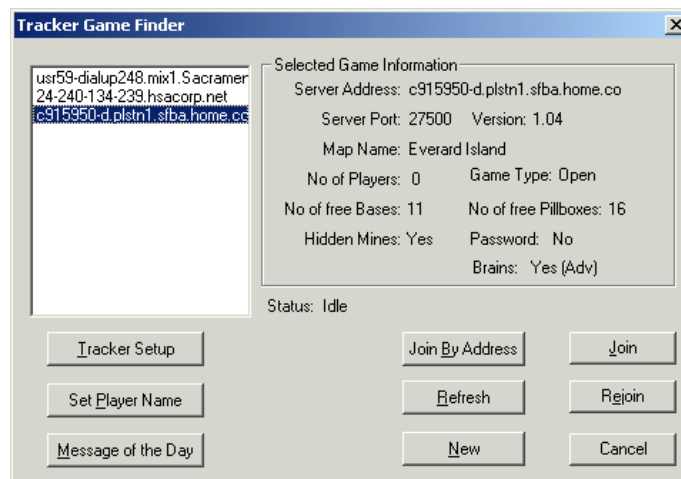
To activate it hit refresh the button. The status line will keep you informed of the progress. When completed the list of current games appear in the box on the left. Upon selecting a games the games details show up in "Selected Game Information" section of the window. To join or rejoin a game click on the respective buttons. From this window you can also goto the UDP window for joining by address, start a new game, set your player name, modify tracker settings or view the tracker message of the day.

3.1.8   Tracker Config
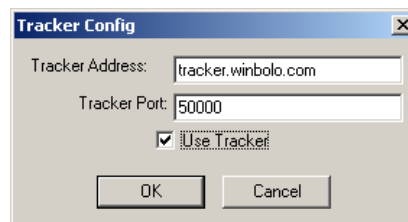
The Tracker Setup window is used for notifying the internet tracker of games going on and for setting the address that is used to perform game lookups. The address and port fields set the tracker address and port to use. If "Use Tracker" is enabled then your game will attempt to periodically notify the tracker that it is playing a game so other players can join your game via the Internet Game Finder window.

Notes:

1. If this is disabled it still uses the tracker address to perform the game lookups for Internet game finds.

2. Games started via the LAN Game Finder window always have tracker notification disabled.

3.1.9 UDP Setup

This window allows you to modify the port and settings for joining games
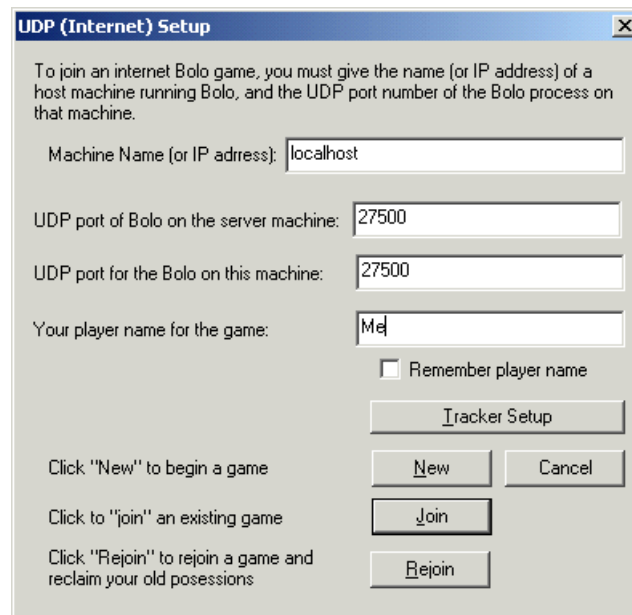
3.1.10 Password

This window is displayed when you attempt to join a password protected game. Enter the password into the text field and click OK to continue joining. If you password is incorrect you will be returned back to the joining screen.
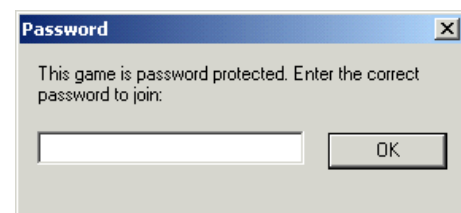
3.1.11 Game Information

The game information window displays information about the current game. It shows the map name, the number of players in the game, the game type, whether hidden mines are available, whether computer tanks are allowed and the time left in the game.

3.1.12 System Information

The System Information window displays information about the current system resources WinBolo is using and its frame rate.
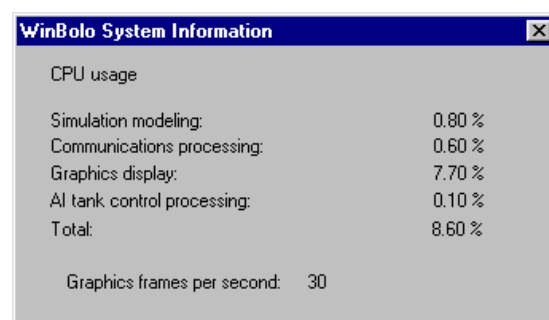
3.1.13   Network Information

The Network Information window displays statistics about the current network game.
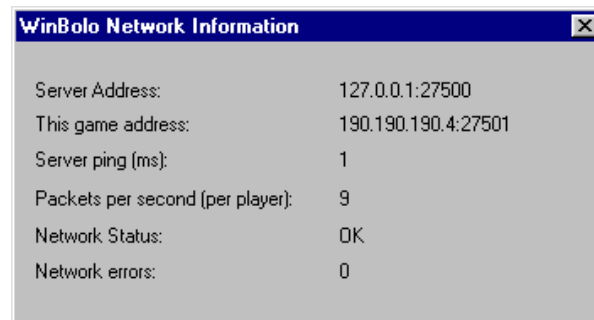
3.1.14   Key Setup Window
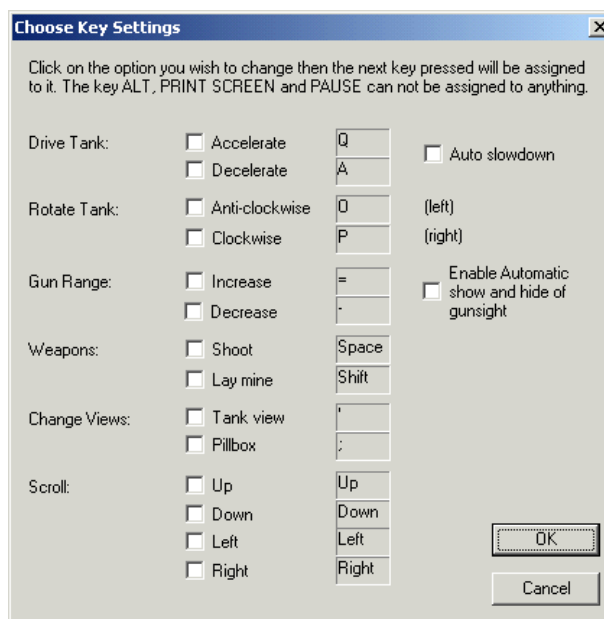
The Key Setup window allows you to customise your keys. To set a key click on the white square next to the key you wish to set. Then the next key you press will be assigned to that operation. The Key Setup window also sets two other options:

Auto Slowdown: When you let go of the accelerate key your tank will gently slow down to a halt.

Enable Automatic show and hide of the gunsight: When you decrease your gunsight range it becomes visible, when you increase it beyond its maximum it turns invisible again.

3.1.15   Compose Message
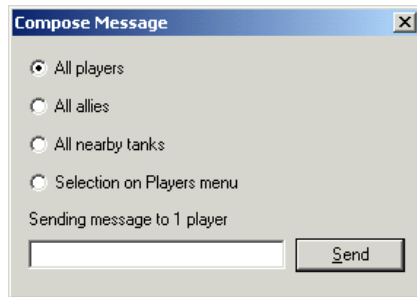
The compose message allows you to communicate with the other players in the game. Type your message in the text field and click "Send" (or press the return key) to send your message. After sending a message the send button will become disabled for a few seconds to prevent flooding the game with messages.

The window has several message sending parameters:

All Players	Send the message to all players in the game.
All Allies	Sends the message to all your allies in the game.
All Nearby Tanks	Sends the message to all tanks in close proximity to your tank.
Selections on the Players Menu	Sends the message to the players you have selected in the players menu.

The information line changes to reflect the number of players that the message will be sent to.

3.1.16   Set Player Name

This window allows you to change your player name inside the game. Type your new player name in the text field and click OK to change your name. If the requested name is in use then an error message will be displayed.

3.2 Menus

3.2.1   File

New	Starts a new game and returns you to the network selection window.
Save Map	Saves a copy of the current map in its current state to your computer.
Game Information	Displays information about game option settings.
System Information	Displays information about the system resources being used by WinBolo.
Network Information	Displays information about the network.
Exit	Quits the current game and exits WinBolo.

3.2.2   Edit

Frame Rate	Adjusts the frame rate (the amount of times per second the screen is redrawn) of WinBolo.
Window Size	Adjusts the window scaling of WinBolo. For people with larger monitors and high resolutions they may prefer to have a bigger window. Note that this may impact on your frame rate.
Automatic Scrolling	Enables/Disables WinBolos automatic scrolling. Automatic scrolling attempts to keep the WinBolo tank in the centre of the screen.
Show Gunsight	Enables/Disables the gun sight target that shows where the shell will land.
Message Sender Names	Sets the length of the labels that will be displayed in the message pane when a message is received from a player.
Tank Labels	Sets the length of the tank label that will be drawn next to the tank when it is on screen.
Pillbox Labels	Enables/Disables labels to be drawn on the pillboxes. Only useful for brain authors.
Base Labels	Enables/Disables labels to be drawn on the bases. Only useful for brain authors.

3.2.3   WinBolo

Allow New Players	Enables/Disables allowing new players. If each player in a network game unchecks this setting the game will become locked and will not allow any more players to join. (See also dedicated server section)
Allow Alliance Request	Enables/Disables people being able to request alliance with you. If alliance requests are disabled both you and the requester will receive a message to say that the request has been ignored.

Set Keys	Opens the Set Keys window where the player can select their keys.
Change Player Name	Changes the player on screen name.
Sound Effects	Enables/Disables sound effect playing.
Background Sound	Enables/Disables playing of sound effects when WinBolo is in the background. (ie not the active application) (option unavailable on Linux)
ISA Sound Card	For people with older computers and ISA sound cards this should be checked to improve performance. (option unavailable on Linux)
Newswire Messages	Enables/Disables whether you receive news about events in the game. eg: "Player 1 captured a neutral base."
Assistant Messages	Enables/Disables whether you receive messages from your builder.
AI Brain Messages	Enables/Disables whether you receive messages from your activated brain if it is running.
Network Status Messages	Enables/Disables whether you receive network status messages.
Network Debug Messages	Enables/Disables whether you receive Network Debug messages. Only useful for reporting errors
Request Alliance	Requests an alliance with people selected on Players menu. Disabled if you are in an alliance.
Leave Alliance	Leaves your current alliance. Disabled if you are not in an alliance.

3.2.4   Players

Send Message	Displays the message sending window.
Select All	Selects all players in the game.
Select None	Deselects all players in the game.
Select Allies	Selects all players you are in an alliance with.
Select Nearby Tanks	Selects tanks that are close by your tank
<Players>	For each player slot in the game if it is occupied the player name is displayed there.

3.2.5   Brains

Manual	Disables any running computer brain.
<Brains>	For each brain they are listed here. Select an item to start it. Brains may add their own menus to WinBolo.

3.2.6   Help

Help	Displays the WinBolo help file.
About	Displays WinBolo's copyright and shareware information..

3.3 Dedicated Server

The dedicated server can be run from the windows command line or linux console. Its usage is as follows. Note examples are from the Windows version.

WinBoloDS -map <Filename> -port <Port> -gametype <GameType> -mines <Mines> -ai <AiType> -delay <Delay> -limit <Limit> -tracker <Tracker> -password <Password> -Addr <address> <-nowinbolonet> <-log> <log filename> <-dontsendlog>

Filename: Path and file name of the map file to open (-inbuilt can be used instead of –map to enable inbuilt map Everard Island)

Port: Port to run the server on

GameType: Specifies the game type: "Open" or "Tournament" or "Strict"

Optional

Mines: Specifies allowing hidden mines: "yes" for allow, "no" for disallow (on if not specified)

AiType: Specifies allowing brains. Valid values are "no" for disallowing, "yes" for allowing and "yesAdv" for giving them an advantage. (disallowed if not specified)

Delay: Specifies the start delay (in seconds) (none if not specified)

Limit: Specifies the game time limit (in minutes) "-1" for no time limit (none if not specified)

Password: Game Password (none if not specified)

Tracker: address:port of the Internet tracker to notify

-addr: Specify IP address to use if the host has more then one IP.

-quiet: No screen input or output (silent mode)

-noinput: No keyboard input is processed but output remains the same

-nowinbolonet: Disables WinBolo.net integration. Game Statistics will not be reported to WinBolo.net

-maxplayers: Sets the maximum number of players allowed in the game.

-logfile: Logs server output to a file rather then to the screen.

-log: Generate WinBolo game log files, that are capable of replaying using the game log viewer tool. An optional file name and path can be given as the next argument to set the filename. If not provided the log file name will be a combination of the current time and map name. Filenames can not begin with a dash.

-dontsendlog: If a game server is reporting to winbolo.net and is logging the log files will be automatically uploaded to winbolo.net. Adding –dontsendlog will prevent the log file from being uploaded.

-statusFile: Will write the output of players in the game to a file called <port.txt> when the status command is typed.

Once the server is running it has several commands:

Lock: Locks the game.

Unlock: Unlocks the game.

Help: Provides help.

Savemap: Saves the map in its current state.

Say: Sends a network message to all players in the game.

Info: Provides information about the current game.

Kick <playername>: Will kick a player from a game.

Quit: Quits the servers.

Note that a server lock overrides a client lock for locking a game, however if the clients have locked the game the server can not unlock it.

Example Command line:

winbolods –inbuilt –port 27500 –gametype tournament –ai yes –mines no –delay 10 –limit 60 –tracker tracker.winbolo.com:50000

This will start the server using the built in map "Everard Island" on port 27500. The game type will be a tournament, hidden mines are allow, no brains allowed. The game has a 10 second start delay and will go for 60 minutes. It will notify the internet tracker of itself at bolo.zoid.com on port 50000.

Additional Notes for Linux Dedicated Server:

The server will listen to SIGINT for graceful shutdown, SIGUSR1 to
server lock a game and SIGUSR2 to unlock a game.

3.4 Linux Specific Information

LinBolo requires the True Type Font Courier New to display text. (And will not run
without one) At time of writing I have not found a free version I can redistribute. You
can find many on the web or use your own if you have windows installed. You can also
download one from here: http://www.microsoft.com/typography/fontpack/default.htm.
Once downloaded copy it into your LinBolo directory called "cour.ttf."

LinBolo runs inside a window on your X Desktop. Subsequently it is subject to X's final
copy to display the image on screen. X Windows is designed to allow remote usage of
windowed environments not real time games. To provide real time graphics updates in X
windows uses a lot of CPU power. You may need to adjust your frame rate and/or stop
other task for best performance.

LinBrains can be stored in both the brains directory inside LinBolo directory in the user's
.linbolo directory. When LinBolo is run it creates a directory. linbolo in the users home
directory to store the preferences. Inside this folder is a folder called brains. Plugin brains
can also be stored in this folder.

The following features are not yet implemented on LinBolo. Look for them in a future

- Localisation (Language) support and background sound.
- Map preview in map file selection window.
- Double/Quad size screen modes.
- Customised Sounds.

3.5 Error Messages/ Common Problems

This section lists the possible errors that can occur when starting either WinBolo or
LinBolo/WinBolo's Dedicated Server component. It details errors that can occur when
trying to join Network games. Each item contains a sentence or two descriptions on why
the particular error can occur and what you can do to fix it.

Notes:

1. These errors are for the English language set.

2. For many of these errors I recommend that you restart windows. This is for the fact
   that they are generated by Windows functions that only fail under abnormal
   situations. If these occur then there may be a problem with your computer that
   restarting will fix.

3.5.1   WinBolo Errors

Startup Errors

Problem: Missing WS2_32.DLL:

Solution: You are probably running Windows 95 and need to download and install the
Microsoft Winsock 2 Update for Windows 95 addon. This can be downloaded from
http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s_wunetworki
ngtools/w95sockets2/default.asp

Problem: Error Creating Window:

Solution: A Windows internal error occurred trying to create a new window. You should probably restart your computer if this occurs.

Problem: Brains Directory does not exist. Not going to load brains;

Solution: Your WinBolo directory is missing a subdirectory called "Brains" so WinBolo is not going to attempt to load brains. If you extracted winbolo from a zip archive (not the installer) and get this error message then you probably forgot to extract using paths. This is a non-fatal error. Brains will not be loaded.

Font Errors

Problem: Cant load font Courier:

Solution: Your system is missing the font "Courier". WinBolo requires this font to run. Please install it and restart WinBolo. (it is included with Windows)

Problem: Error Setting up Fonts:

Solution: An internal Windows Font Error occurred. Try restarting

DirectDraw Errors

Problem: This Version of WinBolo does not run in palette mode. Please change your colour depth to greater than 256 colours:

Solution: WinBolo requires 16bit colour depth or greater. Try going to your Display Control Panel and setting the Colours (In setting tab) to High Colour or greater.

Problem: Any other DirectDraw error.

Solution: Internal setup failed. Try checking your DirectX version.

DirectSound Errors

Problem: Can't Load WinBolo Sounds - Continuing without Sound:

Solution: The "Bolosounds.bsd" file can not be found inside the WinBolo folder. Sounds will be disabled. This is a non-fatal error.

Problem: Error Setting Up Direct Sound - Hardware is in use by another application. Continuing without sound:

Solution: Another application is currently using the computers sound card. Thus WinBolo can not use the sound card. Playing of sound within WinBolo has been disabled. Try quitting (or stopping) the application that is currently using the sound card and restart WinBolo. This is a non-fatal error.

Problem: Any other DirectSound Error.

Solution: Internal setup failed. Try checking your DirectX version.

DirectInput Errors

Problem: DirectInput errors-

Solution: All DirectInput errors mean that an internal setup failed. Try checking your DirectX version.

WinBolo Network Join Errors

There are two types of network join errors. The first type can occur setting up the networking systems for attempting a join. The second can occur during a join.

Network Setup Errors

Problem: Error Starting Winsock:

Solution: An error occurred starting Microsoft Winsock. It is recommended you restart windows if this error occurs.

Problem: Error Creating UDP Socket/Error Creating TCP Listen Socket:

Solution: An error occurred creating one of the WinBolo sockets. It is recommended you restart windows if this error occurs.

Problem: Error Binding UDP Socket

Solution: An error occurred binding on WinBolo's UPS socket to a port. This means that the port is in use by another application. Try changing the port and trying again.

Network Join Errors

Problem:

"There was no response from the game you tried to contact.

   This usually means 1 of 3 things:

   1. You have the address and port fields incorrect.

   2. You are behind some kind of firewall preventing UDP access.

   3. Check that your version of WinBolo is the same as the game"

Solution: Your could not contact the machine you tried joining. Try a different computer in the game.

Problem: This game is currently full.

Solution: The game has reached its player limit. Try joining a different game or starting your own.

Problem: "Failed to make a connection with the server. Try a different machine or wait a few seconds and try again"

Solution: You could contact a machine in the game but you could not contact the server. (You can contact any player in the game and they will refer you onto the address they are using to reach the server) Try connecting to a different machine in the game. The server might also behind a firewall you can not make a TCP connection to.

Problem: The password is incorrect.

Solution: The game you tried to join a game is password protected and you have the password wrong. Try again or join a non password protected game.

Problem: Your player name is in use. Select another and try again

Solution: Someone else in the game is already using that player name. Change it

and try again.

Problem: "You were able to connect to the game but you were not allowed to join. This probably means that your player name has been taken. Please try again with a new name.

Solution: You could connect to the game and initiate the join function but you were not allowed to join. This means your player name is in use.

Network Join Warnings

Problem: The tracker hostname lookup failed. Tracker notification disabled:

Solution: You have set the tracker address to a tracker that does not exist. The DNS lookup failed for the host. The server will not send tracker notification.

3.5.2   Lin/WinBolo Server Errors:

These are the errors that can occur during WinBoloDS startup.

Note: Typing "winbolods" without any options to get the list of valid options. If you get a command line parameter incorrect WinBoloDS will usually inform which parameter is incorrect and then show you the list of valid options.

Problem: Error starting Core Simulation:

Solution: The map file you have selected is not a valid Bolo Map. Alternatively the file could not be opened. If the file name and path contain spaces try placing the entire path and file inside inverted commas.

Windows Problem: Error starting Thread Manger:

Window Solution: The servers thread manager could not be initialised. It is recommended that you restart windows if this error occurs.

Windows Problem: Error Starting Winsock:

Windows Solution: An error occurred starting Microsoft Winsock. It is recommended you restart windows if this error occurs.

Windows Problem: Error Creating UDP Socket/Error Creating TCP Listen Socket:

Windows Solution: An error occurred creating on of the servers sockets. It is recommended you restart windows if this error occurs.

Problem: Error Binding UDP Socket/Error Binding TCP Socket:

Solution: An error occurred binding on the server's sockets to a port. This means that the port is in use by another application. Try changing the port and trying again.

Windows Problem: Error setting socket to listen:

Windows Solution: An error occurred setting one of the servers sockets properties. It is recommended you restart windows if this error occurs.

Server Warnings

Problem: The tracker hostname lookup failed. Tracker notification disabled:

Solution: You have set the tracker address to a tracker that does not exist.(The DNS lookup failed for the host) The server will not send tracker notification.

3.6 Differences Between Bolo and Lin/WinBolo

This section details the main difference between WinBolo and Bolo. It is useful for people familiar with Bolo to move across to WinBolo with knowledge of the slight differences.

Perhaps the biggest difference is the networking topology. WinBolo uses a Client/Server topology as apposed to the ring topology that Bolo uses. Being Client/Server WinBolo helps overcomes the latency problem generated by the ring topology Bolo uses. Thus players from all over the world can join the same game. However since the data is centralised servers require the bandwidth of the sum of its clients. Also if the server quits the game all players are dropped from the game. Hopefully in the future the server will be modified to be "floating" and as such move to a new machine. However this is a non-trivial task.

Unlike Bolo. WinBolo uses client side prediction algorithms to help players with higher latency. As such WinBolo is willing to sacrifice some of its network consistency for brief periods to ensure playability. However this prediction can occasionally be incorrect and so your game may have to undo its prediction changes in accordance to remain in sync with the remainder of the players. For Example: Occasionally when you are shooting at a pillbox and it is shooting back and there is some wall behind you the wall appears to get damaged magically (as no bullets hit it, they hit you) This is because the servers version of the map is always the master copy and on it the wall got hit. (ie your location is presently just slightly out of sync)

Other differences are listed below:

Alliances:

WinBolo's alliance system works as follows. A player selects a name(s) in the players menu that he wishes to ally with. He then selects request alliance from the Bolo menu. On the receiving end a dialog box pops up saying "XXXX requests alliance. Accept?" where they can accept or deny. If the new member is allied, then they are also allied with all members in the alliance. When a player selects leave alliance from the Bolo menu all items personally owned (ie captured) by that player reverts to his ownership. Items that are owned by remaining alliance members remain owned by the alliance.

Autoscroll:

Autoscroll only keeps the tank in the centre of the screen. It does not move around to focus on pillboxes or other tanks.

ISA Sound Card Menu Item:

Enabled by default. Every time a sound gets played the sound mixer must be started and when it is finished it must be stopped. On older ISA sound cards this slows down the games speed because of increased use of the sound cards DMA. Enabling this may speed up the game on older ISA sound cards. There should be no effect on PCI sound cards. (NOTE: On my ISA sound card it makes no difference...) - This option will be disabled if the sounds file is missing or Direct Sound could not be set up. NOTE: ISA Sound card menu item is not available in Linux version.

Key Settings:

To set the keys choose "Set Keys" from the WinBolo menu. Check the item you wish to say. A small window will show up saying: "Press new key for item" The next key you press will be assigned to the item selected. WinBolo will only accept one key per item, unlike Bolo's multiple.

Networking Topology:

WinBolo makes use of a Client/Server topology as such a variety of items are different. If the server quits then all players are dropped.

System Info Window:

If you run a System Information program such as System Monitor you may notice that the total CPU usage is higher then the total amount of CPU used being used by WinBolo even if there are no other programs open. This is because WinBolo only records the amount of processor it is using. For instance, WinBolo tells DirectX to draw a tank. DirectX will draw the tank asynchronously allowing the calling program to continue running. Thus WinBolo only records it used the amount of time to tell DirectX to draw the tank, where as the System Information program also includes the amount of CPU to do the actual drawing as well.

Tracker: If you enter a hostname (rather then an IP) for the tracker at the beginning of the game it will perform the hostname lookup before it tries to join the game. This can cause significant delays if the hostname does not exist.

3.7 Improving Performance

To improve performance of WinBolo try doing the following:

1. Close unnecessary background programs.

2. Run WinBolo in Normal Window size.

3. Turn off base and pill labels.

4. Reduce WinBolo Frame Rate. (From the edit menu)

5. Turn off tank labels.

6. If you are running multiple copies of WinBolo consider selecting Hide Main view after dropping the frame rate down on the background copies.

3.8 Customised Sounds

WinBolo supports playing of custom sound files instead of using the inbuilt game sounds. This is accomplished by creating a subdirectory called "Sounds" under the WinBolo directory and placing WAV files inside with the correct names. The following table lists the file names and what in game event they are:

File Name	Game Event
tank_sink_near.wav	A tank sinking nearby.
tank_shoot_self.wav	Your tank shooting.
tank_shoot_near.wav	A tank shooting nearby.
tank_shoot_far.wav	A tank shooting far away.
explosion_far.wav	An explosion far away.
explosion_near.wav	An explosion nearby.
bubbles.wav	The sound your tank makes when in water and losing shells/mines.
farm_near.wav	A builder farming trees nearby.

farm_far.wav	A builder farming trees far away.
tank_hit_far.wav	A tank hit far away.
tank_hit_near.wav	A tank hit nearby.
tank_hit_self.wav	Your tank hit.
build_far.wav	A builder building far away
build_near.wav	A builder building nearby.
man_dying_far.wav	A builder dying far away.
man_dying_near.wav	A builder dying nearby.
mine_near.wav	A mine being layed nearby.
mine_explosion_far.wav	A mine exploding far away.
mine_explosion_near.wav	A mine exploding nearby.
shoot_wall_far.wav	A building being shot far away.
shoot_wall_near.wav	A building being shot nearby.
shoot_tree_far.wav	A tree being shot far away.
shoot_tree_near.wav	A tree building shot nearby
tank_sink_far.wav	A tank sinking far away.

If any of these files are missing then WinBolo will use the built in sound effects instead.

Please note customised sounds are not available in LinBolo yet.

3.9 Skins

WinBolo allows players to "skin" their copy of WinBolo. Skinning can change the game sounds, graphics and background. Additionally a higher resolution skin file can be used for window that are double sized.

WinBolo skin files are named either .wsf or .zip. They are ordinary zip files containing a set of files. None of the files are required and when not provided the default skin is used from WinBolo. Note that skin items in the zip file must not be contained in directories as WinBolo will not read them.

The filenames of the skin files inside the zip file are as follows:

Filename	Description
skin.bmp	A Windows bitmap file containing the graphics to display ingame.
skin32.bmp	A higher resolution file containing the graphics to display. This is the same as skin.bmp only it has been double sized so each graphic image is 32x32 not 16x16. Also note that 32x32 graphics are not scaled down nor up for any other window sizes.
screen.bmp	A Windows bitmap file containing the background file.

tank_sink_near.wav	A tank sinking nearby.
tank_shoot_self.wav	Your tank shooting.
tank_shoot_near.wav	A tank shooting nearby.
tank_shoot_far.wav	A tank shooting far away.
explosion_far.wav	An explosion far away.
explosion_near.wav	An explosion nearby.
bubbles.wav	The sound your tank makes when in water and losing shells/mines.
farm_near.wav	A builder farming trees nearby.
farm_far.wav	A builder farming trees far away.
tank_hit_far.wav	A tank hit far away.
tank_hit_near.wav	A tank hit nearby.
tank_hit_self.wav	Your tank hit.
build_far.wav	A builder building far away
build_near.wav	A builder building nearby.
man_dying_far.wav	A builder dying far away.
man_dying_near.wav	A builder dying nearby.
mine_near.wav	A mine being layed nearby.
mine_explosion_far.wav	A mine exploding far away.
mine_explosion_near.wav	A mine exploding nearby.
shoot_wall_far.wav	A building being shot far away.
shoot_wall_near.wav	A building being shot nearby.
shoot_tree_far.wav	A tree being shot far away.
shoot_tree_near.wav	A tree building shot nearby
tank_sink_far.wav	A tank sinking far away.
skin.ini	A information file about the skin in for following format: `[Skin]` `Name=Your skin name` `Author=Your name` `Notes=Your notes.`

3.10   Bug Reporting

Please read the text file "Bug Reporting Form" inside the WinBolo directory to report bugs

3.11 Known Issues

See http://www.winbolo.com/bugs.html

3.12 Future Plans

The main priority is to fix any network or game related bugs that people report.

Other plans:

- Add map preview, languages support, background sound option, skin support and double size view to linux client.

- More platforms.

- Port standard autopilot to WinBolo.

- Make WinBolo compatible with Bolo.

- Floating server.

4   WinBolo.net

Winbolo.net is a real time game tracking and player statistics website.

The idea for Winbolo.net came around in the middle of 2000, but took a year before any work was started on it. It was originally a way to publish the #winbolo IRC server game bot results to the web as well as to display player ranks.

Almost 3 years later Winbolo.net is finally realised. Players can sign up and share the same online profile between the game and the online community. Also importantly, there is no impact on the game as Winbolo.net player information integration is completely optional and can be decided by the player if they wish to participate on a game by game basis.

WinBolo.net is free to signup and use.

For more information please visit: http://www.winbolo.net/

5   Version History

Version 1.17 (3/9/09)

Game Play

- Tank acceleration improved.

- If a tank dies while the LGM is completing some task, the LGM will now sit still on the square on which the task is to be completed or - if the task is already completed - stop at it's current world coordinates until it's owner's tank respawns.

- Updated alliances so that if a player leaves alliance, they no longer keep their pillboxes or bases, only the pillboxes in their tanks, this is to mimic the same behaviour in macbolo. It will also limit traitorous behaviour, and allow people to switch teams which they feel are unfair more easily.

- Slightly increased the lgm return goal, so that the lgm will get into the tank a tiny bit sooner.

- Fixed Pills not get damaged by that shells pill fire directly east and directly south.

- Updated pillbox repair to behave like macbolo does, this behavior is simple, 1 'unit' of tree's repairs 4 damage to a pillbox, so if you have 2 'units' you will repair 8 armor to a pillbox. When you farm a tree, its 4 'units', if the pillbox only requires half health(8 armour) you will only use 2 'units', if it requires full armour (its fully dead) it will use a full block (4 units) This means if you only have one unit of tree left, you can still attempt to repair a pillbox, and will repair some of its armour.

- Increased tank refuelling speed. See SVN comments for more details. Fixed pillbug. Pills should no longer switch alliances by themselves.

- You are now allowed to use pillview during static.

- Fixed LGM compass which would sometimes not point correctly until you got close to your LGM.

- A LGM parachuting in will no longer get trapped if it lands on a block, pillbox, or enemy base.

- Fixed LGMs dancing around if the player dies. They will now stay still.

Server

- Added kick command. Server Admins can now kick players by typing kick <playername> in the console.

- Added status command. Typing will print out who has locked. If the -statusFile command line parameter is provided it will output the results to a file named <port>.txt in the current directory.

- Fixed -addr address binding not being used for WBN connectivity.

- Fixed multiple joining at the same time.

- Fixed server crash on player dropping from game.

- Fixed RSA error when two players joined at the same time.

- Fixed server crash when two players fight over a base.

Graphics

- Static darkened.

- Added back buffer for background to reduce flickering on alt-tabing/window moving/window changing. No more flickering on Vista.

- Fixed LGM buttons graphic and death and kills counter on Vista.

Interface

- Added check for blank player names.

- Alliance window now longer stays open when a new game is started(?)

- Fixed in-game player name changes.

- Brains now work again.

- Key Settings window updated.

- Added QuickKeys feature so you can now map keys to LGM buttons. Default is 1 2 3 4 5.

Logviewer

- Changed 2.5x speed to a 'fast' option that speeds playback to its maximum amount. For when you really wanna go fast.

- Fixed the tank label not being redrawn properly, I lowered the label length check and increased the width slightly also.

- Fixed the log output mixing up who killed who.

Version 1.16 (12/2/09) – First Open Source Release

- WinBolo and related utilities are now free software and released under the terms of the GPL version 2. For more information see: http://www.winbolo.org

Game Play

A lot of changes were done to game play to make WinBolo closer to the feel of playing bolo.

- Tank acceleration, deceleration and automatic slow down rates have been changed to match Bolo.

- When hit by a shell the tank now slides in the direction it has been hit rather than getting moved there straight away.

- Changes to the base regeneration of stocks algorithm. Bases now regenerate new stock at a rate of one unit per 20 seconds per player.

- Pillboxes now shoot slightly faster.

- The time between when a player dies and when they can restart has been changed to 7 seconds.

- Swamp now takes 4 shells to turn be destroyed.

- Tanks can no longer build underneath their boat.

Networking

- RSA public key encryption. To prevent players from compiling their own clients and exploiting cheats within the games source code a test is done on joining network games to ensure that only official clients can join official servers. For more information see the WinBolo wiki.

- Dedicated server: IP addresses are now displayed with incoming information request packets.

- Dedicated server: -autoclose flag no longer closes the server when all bases are taken.

Interface

- New game opening dialog.

- Static is now drawn on the screen when a player dies. Note this changes the skin file format and older skins will no longer work correctly. Skin authors will need to update their skins to work with 1.16.

- The scroll wheel can now be used to change the gun sight range.

- Fixes drawing problems on Windows Vista.

- Players behind a NAT firewall now have their IP address displayed correctly in the networking info dialog.

- Number of free pillboxes in a game is now displayed correctly in tracker game search window.

- A single road square in water now displays the water colour correctly.

- Fixed crash on network game startup from within the game client when the inbuilt map "Everard Island" is used. – Note: Starting a game server from within the client on Vista or newer operating system has been currently disabled. Please use the dedicated server to start games.

Version 1.15 (21/4/06)

- Game logging. Includes log viewer capable of replaying log files. Game servers can be set to record log files using -log parameter. Log files can be uploaded to winbolo.net for players to download at game end. For more information please see the log viewer manual and WinBolo manual for information on parameters.

- Fixed tanks not disappearing immediately in game clients when destroyed by running into mines.

- Many other fixes.

Version 1.14 (9/3/04)

- Built In Server support - WinBolo can now start a server from within the game client. This mean it will no longer have to run an external program to run a server which was problematic under some systems.

- Skin Support - WinBolo now allows players to customise their graphics and sound. For more information about creating skins see Section 3.8 of the WinBolo manual.

- Cheat Detection. Better detection of players using cheats.

- New server commands – Say to send a message to all players in the game and info to bring up information about the game and a current player list.

- Game lock status as well as version is now reported to WinBolo.net

- Slight increase in tree regrowth rate.

- Fixed lock up when pillboxes are dropped in the surrounding mine field.

- The builder is no longer able to drop a pillbox the carried pillbox on other pillboxes, bases or walls when it is shot.

- Fixed unable to find brains and other directories when the directory has windows attributes set on it.

- Fixed builder being shot when driving into a enemy base while shooting it and sending it the builder.

- Other Fixes

Version 1.13 (9/3/03)

- Network fixes and changes. Players who are out of sync with the server will now be unable to move till they are re-synced. An error message will display in the main window.

- Added –logfile dedicated server command to output to a file name rather then to the screen.

- Added –maxplayers dedicated server command to specify the maximum number of players a server will allow. Any players attempting to join a full server will receive an error message.

- Added -savemap dedicated server command to save the map in its current state.

- Fix for man not being able to repair pills on trees.

- Fix for man trying to farm trees on a base.

- Fix for a local player showing up with an asterisks next to their name after playing a WinBolo.net game then starting a new game after un-checking their winbolo.net participation option. All other players did not see the asterisks, nor did they show up on WinBolo.net as a participant.

Version 1.12 (23/2/03)

- Lock game fix.

- Password network games fix.

Version 1.11 (23/2/03)

- WinBolo.net integration. WinBolo.net is a game tracking and player statistics website. For more information visit: http://www.winbolo.net/

- Linux Client redistributed.

- New network transport layer.

- DNS Lookups fix in client.

- Fixes for pills/builders.

- Tank hit boundaries changed

- Ignore Alliance Request menu option.

- Winbolo:// URLs can be used to start WinBolo and join a game from a website.

- Added –noinput dedicated server flag.

- Customised sounds on Windows.

Version 1.10 (21/2/02)

- Fixed LGM issues.

- Fixed "Invisiwall" bug.

- Base recharge rate changed. Bases now recharge at a more bolo like rate.

- Slightly slowed tank deceleration rate.

- Fixed cursor getting stuck as busy cursor on some Windows 2000 systems.

- Fixed Brains not being able to receive all messages and pill strength information.

- Player name is now pre-highlighted in change player name window.

- Lots of fixes.

Version 1.09 (29/4/01)

- Added more anti-cheat mechanisms. Moved to more of a server authoritarian network architecture.

- Like Bolo, trying to repair a captured pilbox that has since been moved and replaced by a visible mine can no longer kill a LGM. (Which has become common practise now.)

- Tweaked man death check.

- In pill view you can now move between your pills by using the arrow keys.

- Reset alliance requests on new game.

- Fixed infinte trees LGM bug.

- Tree growth rate increase.

- Tank slowdown rate increased.

- Fixed LGM remember next action after death.

- Fixed xsync() lockup in LinBolo under XFree 4+

- Fixed partial screen redraw problem under X Windows on some systems.

- For lazy copy and pasters WinBolo now removes blanks spaces at the beginning of lines when you copy and paste address:port into the TCP/IP setup window.

- WinBolo now performs reverse DNS lookups on players in network games and displays their DNS name if available.

- By popular demand Bolo like starts allocation are now implemented. WinBolo tries to avoid starting you near tanks and enemy pillboxes. From the Bolo Version History document: "Improved start position allocation for maps with very few start squares defined, to cope better with certain "creative" map designs. For example, if you have a map with only two start squares, and you have a game of two teams where each team has a pillbox close to one of the start squares, then each team will effectively have their own 'private' start square, because with only two start squares to choose from when bringing a new tank into the game, Bolo will choose the one near the friendly pillbox, not the one near the hostile pillbox."

- Fixed tank label clipping problem.

- WinBolo now uses the TERRAIN_UNKNOWN terrain until the tank first encounters the map location. This is in accordance to the Bolo brain standard.

- Brains no longer get passed bases armour amount for enemy bases. A value of 0 is given in the direction field of the ObjectInfo structure. if the base is non capturable a value of 1 is passed.

- When using the scroll keys to scroll the window manually, this will temporarily override the auto scrolling till you reach the map edge. Pressing the tank view key will re-enable auto scroll.

- Increase in pill maximum fire rate.

- Dead pills do not get angry when allied bases around them are attacked.

- Message scrolling speed increased.

- Fixed passing player names to brains.

- Reduced volume on sound effects.

- Fixed crash on computers that have no sound cards.

- Linux servers now unbind listening ports quicker.

- LinBolo now allows using the return key to set a key.

- Lots of internal changes.

Version 1.08 (16/9/00)

- Adding Linux port. (LinBolo)

- Linux server now listens to SIGINT for graceful shutdown, SIGUSR1 for lock game and SIGUSR2 for unlock game.

- Added -addr flag to dedicated servers so users can specify IP address to use if they have more then one IP.

- Tanks no longer shudder when refuelling in network games.

- Fixed LGM repair trick.

- Tweaking pillbox aiming code.

- Fixed DC errors on NT.

- Network updates, more validity checking. First stage of the network code rewrite. This should eventually lead to floating servers and some other neat stuff.

- Fixed long wait on joining with a taken player name taken.

- Manual updates.

Version 1.07 (31/7/00)

Game Play:

- Improved aiming angles. Much closer to Bolo angles for pill takes etc.

- Lgm now enters tank at its edge rather then centre.

- Lgm kills checked based on range from explosion rather then map square.

- Last pill in view set to first pill in view on next pill view.

- Pills retain their angry mode when inside a tank (and cool down at the same rate as normal pills)

- Mines that are underneath bases are removed on map load.

Networking:

- Easier to kill lgm in high lag.

- Fixed killing lgm and dropping a pill desync problem.

Interface:

- Fixed File -> New for second network game.

- Fixed starting server via client on Windows 2000.

- Changed drawing main screen offsets.

- Fixed Linux server crash.

- Fixed a couple of graphics glitches.

Version 1.06 (14/7/00)

- Added map preview to Open Map dialog.

- New more sensible command line for dedicated servers. (See manual for more information)

- Fixed players leaving and pill carrying issues

- Fixed Alliancing issues.

- Fixed Internet -> New crashes.

- Window size check mark is stored correctly.

- Fixed crash when a server has no players for over an hour.

- Fixed DNS lookup failure on player join server crash.

- Fixed keyboard issues on certain international keyboards.

- Tracker lookup information carries through to join by address dialogs.

- Network changes.

- Closes child windows on new games.

- Brains sent middle of pillbox and base squares, not edges.

- Brains sent correct tank directions.

Version 1.05 (24/6/00)

- Linux dedicated server port.

- Window NT4 (SP5+) support.

- Added WinBolo Manual. PDF Viewer required. The latest version (if changed) can be found online.

- Localisations support and translations. As part of one of my university subjects, Software Internationalisation we had to internationalise something. As such WinBolo is now localised for English, Swedish and Dutch. More languages to come. Thanks to David Tuffley for allowing me to use WinBolo as my project.

- WinBolo now uses proper ini files. All game keys, options and menu settings are saved. You may need to reset your keys after upgrading.

- Fixed Windows 2000 game serving issues.

- WinBolo now centres maps on loading.

- Improved gunsight range change responsiveness.

- Mouse building location selection now works like Bolo mouse. It changes only when you move the mouse, not when the screen moves.

- New threads/networking code. Stability of servers significantly improved.

- Pillboxes dropped by tanks will no longer be placed on the game edge mine field. Pillboxes will also not be placed on walls or bases.

- Fixed game synchronisation issues.

- Drawing speedup.

- Updated collection of maps included in the package.

- Fixed long standing occasional crash on client shutdown.

- Brains get past correct tankobstructed values.

Version 1.04 (12/3/00)

Game Play:

- Pillboxes wait a short time before firing upon you when you enter range.

- Bases wait a short time before beginning to refuel tank

- Added tutorial. Presently there is no provision for adding user built tutorials. This may change in future release. Contact me if interested. (I've never seen a user built Bolo tutorial)

Networking:

- Added LAN Game Finder. Works via broadcast packets.

- Added "Rejoin" functionality. Players can select rejoin and it will attempt to rejoin a game they left. All pillboxes and bases that they owned and are still neutral will be reassigned to them. The rejoin window is 5 minutes. You must rejoin with the same player name.

Interface:

- File -> New now works.

- Scroll view keys speed improved.

- Aiming is now easier and smoother.

- Always shows closest bases statistics on grouped bases.

- Alliance Dialog always appears on top.

- Fixed brain direction bug. Thanks to smithel for pointing it out to me

- Huge speedup in double size and quad size views.

Version 1.03 (5/3/00)

Game Play:

- You now get kills for shooting players on boats in deep sea.

- Slowed tank acceleration rate.

- Base refuel tank rate increased.

- Slight increase in builder parachute speed.

Network:

- Clients can lock games from new players joining. If every player in the game unchecks the "allow new players" menu item then the game is locked. Note that the server lock game function overrides the client lock.

- Added show network messages option. (On by default) It displays messages sent out to all clients from the server, such as the game being locked and unlocked. In future it could be used to set a welcome message upon players joining the game or for display a message when the server administrator removes players etc.

- Server sends out a message to all players when it is told to exit.

- Fixed long player names corruption. Thanks to DeathWalker for helping track this one down.

- Increased tracker data timeout to 10 seconds.

- Players who connect to the server via "127.0.0.1" have their addresses changed to that of the servers.

- Slight packet optimisation.

Interface:

- Everard Island map is now inbuilt into server and client. You can set the server to use the inbuilt map rather then a map by setting its map parameter to "-inbuilt"

- Fixed alliance messages turning up twice on your own screen.

- Added "Change Player Name" button window to game finder window.

- Game Finder prevents you from trying to join games running a different version of WinBolo then you are using.

- Added message spam prevention. You can only send a message every second.

- Pills carried by your allies now appear as filled in circles. Not hollow circles.

- Fixed "Join By Address" dialog lockup.

- Fixed crash on really long paths and file names for maps.

- Fixed crash when you leave alliances request window open for a really long time.

Version 1.02 (27/2/00)

Game Play:

- Tank makes noise when it lays a mine.

- Fixed lockup on duplicate mine build.

- Fixed pill takes from trees.

- Fixed tank being drawn on top of parachutes.

- Halved builder parachute speed rate.

- Tweaked refuelling and base replenishment rates.

Networking:

- Added dedicated server "lock" and "unlock" commands which lock and unlock the server from accepting new players.

- Fixed invisible tank bug caused by routers and proxies dynamically changing their clients ports.

- Fixed alliancing problems.

- Fixed duplicate name problems on simultaneous join requests.

- Packet Optimisations.

Interface:

- Added Internet game tracker search option. Provides a graphical way to join Internet games.

- Maps which have invalid ownership set on pills and bases are set to neutral rather then hostile (but not owned by a player)

- Fixed brain receive message crash.

Version 1.01 (10/1/00)

Game Play:

- Mines now give off damage to the surrounding squares like Bolo.

- Damaged done to the tank by a mine has been lessened.

- Tanks hide in trees that are 2x2 like Bolo. It was 3x3 before. Tanks are still visible to everything with in a 3 map square raduis of themselves

- Amount of shells given to a new tank in a tournament game is now dependant on number of free bases in the game.

- Bases not replenishing in single player mode.

- Fixed enemy tanks being able to refuel on bases they don't own (by being pushed over them)

- Slowed tree growing by a third.

Networking:

- Map downloads occur 6x faster then before

- No longer reports negative ping times.

- Reports corrupt packets.

- Removed pill building sound echoes on laggy connections.

- Servers now send out their addresses to the tracker. If the server address field of the info packet received is 0 (0.0.0.0) it is from the server, not a client so the IP that the packet arrived from can be used to contact determine the server address.

- Reduced bandwidth by about 50-60%

- Overall game syncing and networking significantly improved.

Interface:

- Changed graphics to appear more Bolo like. Thanks to Canuck for supplying and editing new tile graphics.

- Brain menu now appears in the correct location. (No more submenus) Thanks to db48 for information on how to do this.

- By popular request, there is now an "Auto Slowdown" option which makes the tank automatically decelerate as soon as you release the "Go" button. Before you use this though, let me warn you: The result is that you hold the "Go" button down to go full speed, and let go to stop, making it almost impossible to drive at any speed in between.' (From Bolo Version History 0.97) The auto show/hide gunsights also been added. This addition however causes your preferences file to be recreated so the first time you run WinBolo 1.01 you will be informed your preferences file is corrupt and the values will be reinitiated. Sorry.

- Send Messages window now sets the focus to the text box so you can start typing straight away. It sets the focus back to the main window when closed.

- If DirectSound start up fails then WinBolo will continue without sound. (Having no sound card causes it to fail)

- Fixed crash caused by changing the window size while the map is still downloading.

- Cursor no longer shows through window.

- Fixed "DD GetDC Failed" bug.

- Fixed &'s in displaying messages.

Version 1.00 (21/12/99)

Initial Release.

6   Further Reference

6.1 Contact Information

If you wish to contact me about WinBolo send me email via:

http://www.lgm.com/bolo/clones/wb/mail.cgi

or visit the webpage at: http://www.winbolo.com/

Do not email Stuart Cheshire on matters concerning WinBolo.

6.2 Thanks To….

Stuart Cheshire

Jolo, Kax, Max, Mecca, Plastic Fist, Wharf Rat, Nix, Wilfred Verkley, Canuck, db48, Min, sheeps

GU play testing team:

Todd Becker, Daniel Everton, Luke Morton, Cameron McNiel, Ben Muller, Daniel Thomas.

VB play testing team:

John Bettiol, Cameron Deane, Robert Dragoi, Adam Fawns, Charles Henden, Jacqueline Stark

Translators: C.H, D.K

Plus those on #bolo and r.g.b who answered all my annoying "So does Bolo do this or this?" questions.

6.3 Writing Brains/Map Viewer/Utilities

Programmers and individuals interested in writing brains map viewers or editors should look at the Sample Code folder inside the WinBolo folder for more detailed information.

6.4 Board Games (Inspiration for Bolo)

From Stuart Cheshire:

"When people ask me why I made Bolo the way it is, two board games come to mind which I think served as inspiration for some of the concepts I have tried to include in Bolo.

1. "Combat"

Devised by G. Rostant, for J. & L. Randall Ltd, Potters Bar, Herts, England, and sold by "Merit", with the endorsement of Lt. General Sir Brian Horrocks K.C.B., K.B.E., D.S.O., M.C., L.L.B.(Hon).

Merit Cat. No. 6192. Unfortunately no copyright date anywhere on the packaging or the manual, or indeed any copyright notice at all.

This is a two-player board game which I enjoyed playing as a child. It had tanks, artillery guns, aircraft and mines. It had grass, forest, hills and road, which each imposed a different top speed of the vehicles as they passed over them. The game board itself was blank, and these terrain elements were printed on pieces of plastic film which were placed on the board so that each game could be played with a different map layout. However, in Combat, the terrain was fixed once the game began, and mines were not secret -- they were placed on the board and openly visible. Tanks inside forest were protected from being shot, but of course they were still visible to the other player, and Combat did not have that other element of secrecy -- limited visibility range so that you could not see what was happening deep in enemy territory. It was also limited to two players (or two pairs of partners), so there was no question of shifting alliances or treachery.

I liked Combat for having different kinds of terrain with different properties which gave a wide range of choices of route, instead of a simple line of squares along which the pieces move, as in Monopoly. I also liked the fact that the moves were deterministic, dependent on the terrain, instead of being decided by the throw of dice, and the fact that, although the two players took turns, on each turn you could move all or none of your vehicles, unlike games in the chess model where you only move one of your many pieces per turn. In Bolo I tried to keep these ideas, and enhance them by using the computer's ability to provide more subtlety -- simultaneous play instead of alternating turns, and smooth movement instead of pieces moving from square-to-square in discrete steps.

2. "Diplomacy"

Copyright 1976, The Avalon Hill Game Company, 4517 Harford Road, Baltimore Maryland 21214, USA.

At first sight Diplomacy would seem to have little in common with Bolo, but it has elements which I tried to include. The most obvious is the alliances -- the shifting, uncertain, treacherous alliances, of players making promises they donÕt keep, of players offering support but then 'forgetting' or 'accidentally' doing the wrong thing by mistake.

The other feature of Diplomacy which deserves mention is the simultaneous play aspect -- all players decides their moves (and write them down on paper) at the same time, uncertain of what other players' plans may be. In chess and most other games, you decide your move with full knowledge of the state of the board. In Diplomacy, it is only after you have committed yourself to a series of moves that you find out whether other players have themselves made moves which render your own useless. It was this aspect of having to make decisions, to formulate plans and strategies with only partial or even sometimes incorrect knowledge, which I wanted to capture in Bolo."

6.5 Links

Official Lin/WinBolo Page: http://www.winbolo.com/

WinBolo Game Tracking and Statistics: http://www.winbolo.net/

Fermats WinBolo statistics: http://fermat.winbolo.us/bolo/

Official Bolo Homepage http://ww.lgm.com/bolo

Official Bolo Homepage's WinBolo page: http://www.lgm.com/winbolo/

Bolo Strategy Guides: http://www.lgm.com/bolo/guides/