

```

//*****
//
// Bolo standard Autopilot Brain
// (C) 1993 Stuart Cheshire <cheshire@cs.stanford.edu>
// I make no claims that this is good code. It is provided solely as
// simple example code to assist in writing Bolo plug-in Brain modules.
// I do not have the time to tidy it up and make it elegant at all, so
// if you have ever been a student of mine and lost marks for bad style,
// don't even think of trying to use this code to justify claiming extra
// marks. It is crap. And it uses far too many global variables.
//
//*****

//*****
//
// Tonto! v1.0, nonstandard Bolo brain
// Modified by Milo Sharp <fxmcs@aurora.alaska.edu>
// I will make many claims that this is not good code. It is provided
// solely as an alternative to the standard brain. I do not program in
// C, so if I ever let you look at the code, you would probably cringe in
// horror. I do. And it STILL uses far too many global variables.
//
//*****

```

Tonto! v1.0

Changes Since Milo's Autopilot 1.0:

Follower - A new function to the Bolo world. This'll make Tonto follow the closest ally he finds. You may not see it much, since it's a low priority, but when two or three tanks come rumbling into you all at once, you'll realize how important it is. If the follower option is set, when Tonto finds a allied tank WITH A LOWER PLAYER NUMBER than his, Tonto will attempt to follow him. Sometimes Tonto will shadow you a bit too closely, so it's not ideal for creating a roving army, but if you stay ahead of him, you can use this to make Tonto join you in an attack on an enemy tank or pillbox. Once something higher in his priority list takes over (refuel/repair, enemy tanks/pills/bases, rescue buddy, etc.), he'll leave you for his own agenda.

Spike Enemy Bases - Hah! About time this was implemented. Doesn't work perfectly, but a step upwards nonetheless. He'll also drop pillboxes like hot potatoes if he's in danger and low on armour.

Numerous bug fixes & improvements - Still needs work, but is improving gradually. Repair pillboxes now works properly.

New options:

Roam - This used to be a part of the 'Aggressive' function. However, I

thought it was stupid that a non-aggressive brain would just sit and rot. To me, non-aggressiveness means you won't embroil yourself in fights - not that you don't have any motivation. A roaming tank will avoid fights with other tanks and will not attack pillboxes. Bases are still fair game, as are builders. (see Murderous)

Aggressive - Due to the addition of the Roam function, this has no control over what your tank will do UNLESS he is within sight of an enemy tank or pillbox. With Roam unchecked and Aggressive checked, your tank will sit in one spot, but chase after any enemy tanks that come into view.

Drop Only Near Bases - The standard bolo brain would just place a pillbox wherever he picked one up. This didn't make for a tough offense against them - they would leave their bases unprotected and scatter pillboxes around the map randomly. Now, with this option checked, the brain will carry any pillboxes it has picked up with it until it reaches a base. Once upon a base, the brain will place a pillbox one square behind itself. It's still pretty mindless, but I've seen brains build some decent forts this way - I've stumbled upon bases with two or three pills surrounding it before.

Murderous - The old brain took no notice of builders whatsoever. This made it simple to have your builder sneak up behind it and drop a pillbox, which would take upon itself the duty of pulverising the brain. Now the tank will make a concerted effort to blow the builder to smithereens. Unfortunately, this rarely works, as the builder generally moves much too fast for the poor brain to catch it. However, other brains, at least, have the tendency to leave their builders stranded amongst some buildings or rivers, and this has some use if a Murderous brain happens upon a lost builder.

Repair Pillboxes - Milo's Autopilot 1.0 had some problems with this, but it works fine now. I had been giving the build command some faulty data. Go figure. It'll repair any pillbox that's taken more than three points of damage.

Build Fortresses - This will more or less work, but it's still buggy. Be careful with this - it has the potential to lock up Tonto!

Making the brain a little bit smarter:

I tried to modify the brain's behavior a little bit, since I found it had some incredible moronic habits. Here's a small list of eccentricities:

Attacked pillboxes while in deep water on a boat
Preferred the head-on-with-guns-blazing-until-a-immense-wave-of-shells-washed-over-the-tank,causing-instant-death method of pillbox fighting
Would wade into battle carrying a pillbox, where most real players would be more cautious with a valuable asset like an unplaced pill
Would attack other tanks EVEN while wounded and hiding in the forest

I've tried to fix all of these. While still not as bright as it could be, and far from a human opponent, it performs obviously better. I've seen it take two pillboxes at the start of the game without being killed. It still likes the head on approach, but when there are more shells coming at

him than he has armor, he'll turn tail and run (usually) which (usually) winds up saving his butt. This works best if there's a base nearby he can use to repair his armor.

He won't attack pillboxes while in a boat, which saves him from both slow loss of ammo and instant death. He'll try to runaway from enemy tanks when he is trundling around with a pillbox, and will definitely shy away from pillboxes. And if he's down to his last points of armor, he develops an affinity for the forest and avoids the open road, giving him the cloaking advantage that many human players are fond of.

Still and all, I've seen my brain make more than its' fair share of blunders. He's STILL trying to burrow his way into a wall right now. But this is at least a improvement, which makes playing with computers a bit more fun.

About this brain:

I did NOT write the original code for this brain. That honor goes to Stuart Cheshire, the author of Bolo. I've only modified it to improve performance. Why, you might ask, didn't I just make my own? Well, for all Stuart's remarks about the shoddiness of the code, it's actually pretty good. Better than I would have done, since I don't understand Bolo as well as Stuart (but then, who does?). And the best reason of all, I don't know how to program in C. All the programming I did came from a basic knowledge of programming (from Pascal experience) and looking at Stuart's code for syntax examples.

I hope you get some use out of this brain. I don't claim it'll outperform anyone, but I think it makes a decent sidekick for any of them, which is, after all, what it was meant to do. My favorite setup is to play me (and a friend, sometimes) against one Indy 1.2, one Maxwell 1.4, one Dumbot 0.3 and one Tonto! 1.0 (all allied). The variety keeps you on your toes, and they all complement each other well.

Milo
<fxmcs@aurora.alaska.edu>