

OPEC-CTF - Capture the Flag Game

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Capture the Flag - A Brief History

Believe it or not, Capture the Flag originated on the battlefield of some of the most deadly wars in history. In fact, that was exactly how all the soldiers knew when a battle was over - once the enemy's flag was captured, both sides considered the skirmish settled.

In the US Civil War, soldiers that were able to either capture the enemy's flag or save their own were rewarded with a Medal of Honor.

Nobody knows for sure when Capture the Flag took off as an outdoor activity, but Boy Scouts have been playing the game for over 60 years!

If you look at Basketball, Football, Baseball, Hockey etc ... pretty much most sports today are based on the basics of Capture the Flag ... even children's games like Kick the Can, can be traced back to Capture the Flag.

OPEC-CTF ver. 1.0 CASTLES & CROSSES from: OPEC of the West

A New Beginning, a New Revolution in hobby robotics!

The initial robot the game is designed around the POB-Bot by POB-Technologies. However, the game (version 1) can control any robot using DC motors for primary drive, servos for camera Tilt and three Sharp GP2D12 Distance Measuring IR Sensors all setup the similar to the POB-Bot.

OPEC-CTF Game Rules:

The first robot to enter an Enemy Home Base identifying the enemy pattern on the wall declares a Victory for that robots team. Future versions will enable Robots with guns to aim & shoot (laser tag) the Enemy HomeBase Pattern for an extra point, and Robots with grippers can pick-up the Enemy Flag (a game piece found just under the Enemy HomeBase Pattern) and place them in the CaptureZone depicted by the King pattern for an extra point.

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Game Map Specifications

The game map is similar to a FPS (First Person Shooter) map or a large laboratory rat maze. The robots will move about the isles or hallways looking for direction clues posted on wall panels to help the robots navigate to their objective (finding the enemy Team HomeBase or finding its own Team HomeBase.) BigA's and Spots are Left & Right directional patterns (see the table below) that direct the robot towards each opponents team HomeBase.

The arena wall panels will be adjustable to create different "maps" as needed for each new game. Each wall panel is approximately 12"/30cm tall.

Wall panels can be held-up by posts having a base plate not more than 0.08in./2mm thick to allow bipedal robots to comfortably walk over them.

Robots will be allowed to look over the tops of walls. All wall markings will be about 3"/7.5cm by 3"/7.5cm and 12cm above ground level centered horizontally and vertically on a wall panel pattern page.

Isles and hallways will be no more than 1yard/1m wide (typically 14"/35cm to 18"/45cm wide) and no less than 12"/30cm long. The Home Bases will be 1yard/1m by 1yard/1m square to provide adequate space for Robots to perform the Victory Dances.

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General Description of the OPEC-CTF Game

The end-user will use the POB-Loader tab in the POB-Tools load the OPEC-CTF game application into the robot (POB-Bot or other POBified¹ Robot).

When the user turns ON the Robot or resets the system ... the game application (OPEC-CTF) will open to a Welcome screen on the display waiting for the user to press the Joy/Button to move to the first menu to select which team to join, then moving to the next menu the primary AI components as needed to play the game.

Primary OPEC-CTF components are:

- **User Selects Team:
Castles or Crosses**
- **User Selects AI when in doubt turn:
AlwaysLeft or AlwaysRight**
- **User Selects either Tweak or Play OPEC-CTF**
- **User sets Robot into Gaming Arena and Lets it Go!**

[¹ A POBified Robot is a robot modified to be controlled by a POB-Technology POB-Eye system.]

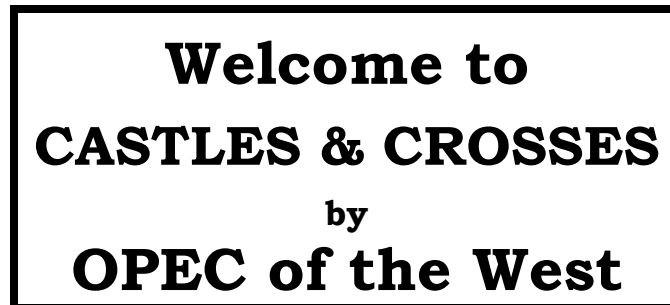
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OPEC-CTF Menu



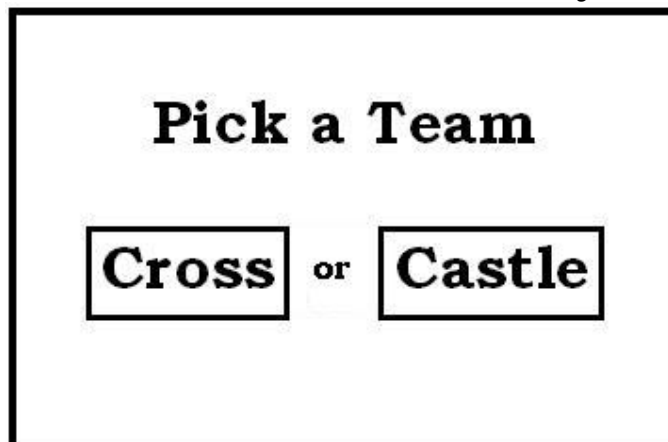
Turned-ON Welcome Screen:



User Presses Joy/Button to continue ...

Main Menu:

The user chooses which team the robot will join.



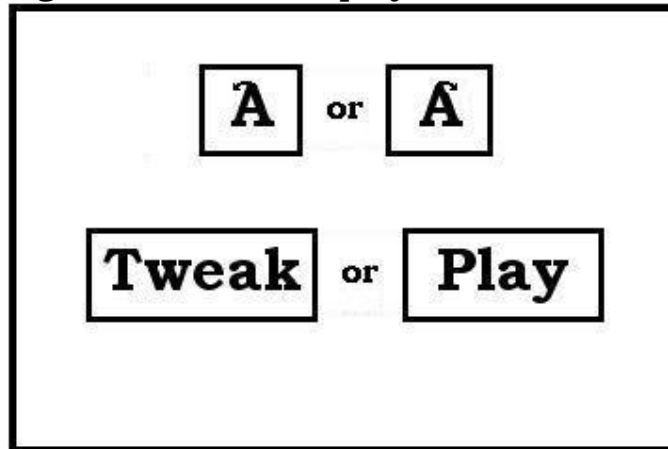
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OPEC-CTF Menu

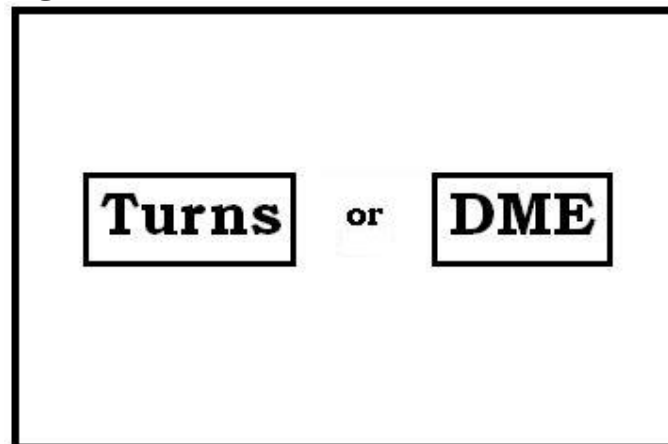
Sub Menu:

The user will choose AlwaysLeft or AlwaysRight turns when there are no directions on a wall panel, or the user can enter the Tweak menu to program settings to best fit their robot to the game software or play OPEC-CTF.



Tweak Menu:

The user selects either the Turns testing and adjusting program or the DME adjusting program to “Tweak” their robot to the game software.



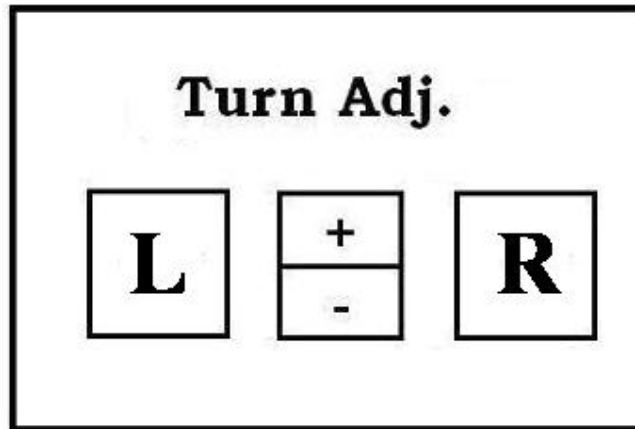
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OPEC-CTF Menu

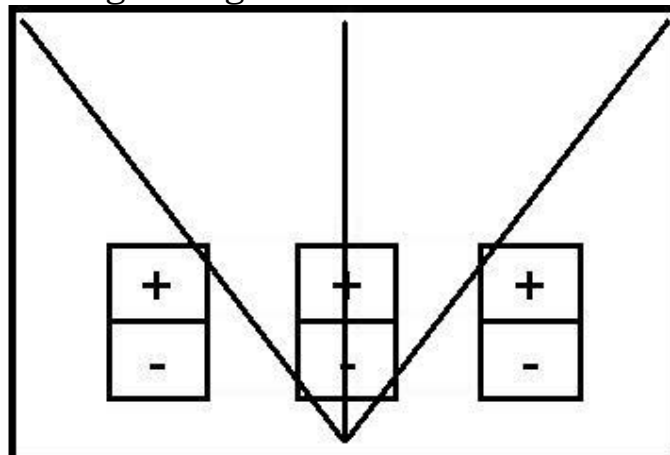
Turns Menu:

The user clicks on the TEST button and the program makes a test (AlwaysLeft or AlwaysRight) turn ... if the robot turns more than 90° the user would select - on the menu and test again ... if the robot turns less than 90° the user selects + on the menu and tests again until the robot can make as accurate 90° turn as possible for normal movement through the game arena. Choosing other turn rates may benefit if the game arena is built with walls at less than 90° angles.



DME Menu: Ver. 2.0

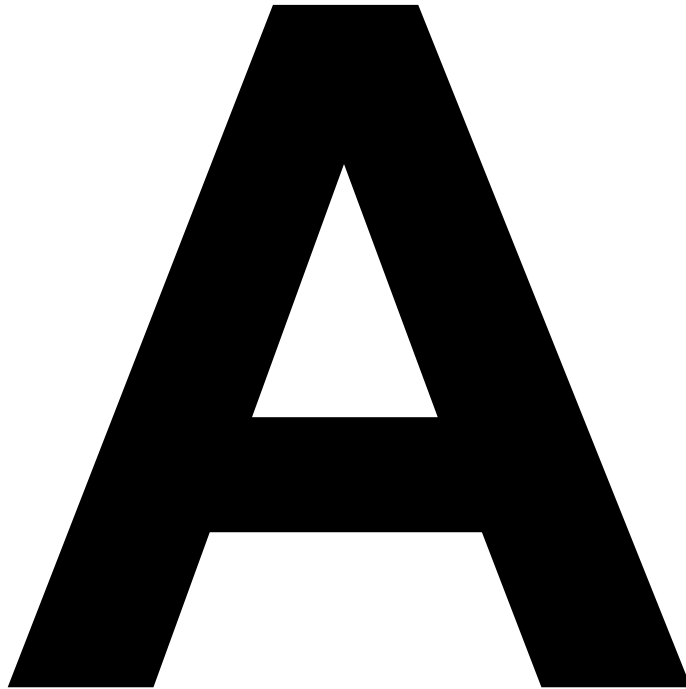
Adjusting the DME is to permit even spacing between walls ... since no two game arenas are the same walls may be closer or farther apart so optimizing the DME may speed movement through the game arena.



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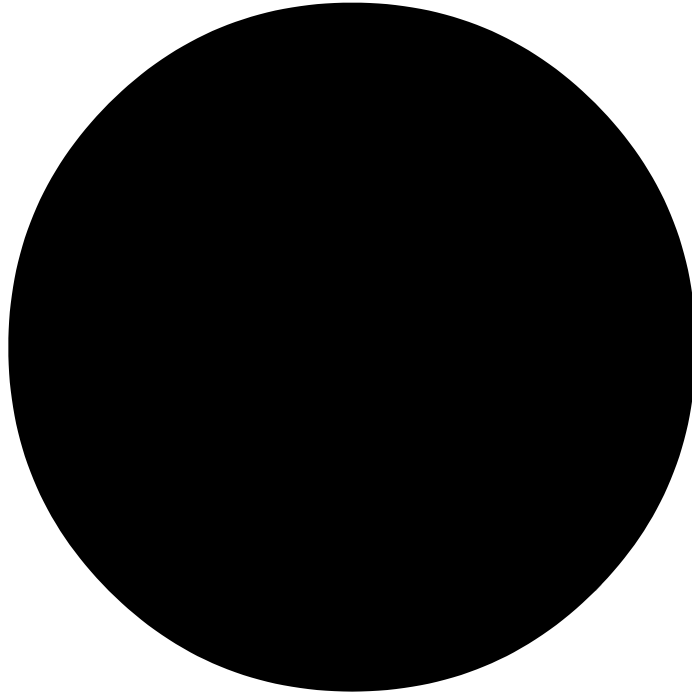
**OPEC of the West - OPEC-CTF
Wall panel Patterns for Printing = 90° Turn**



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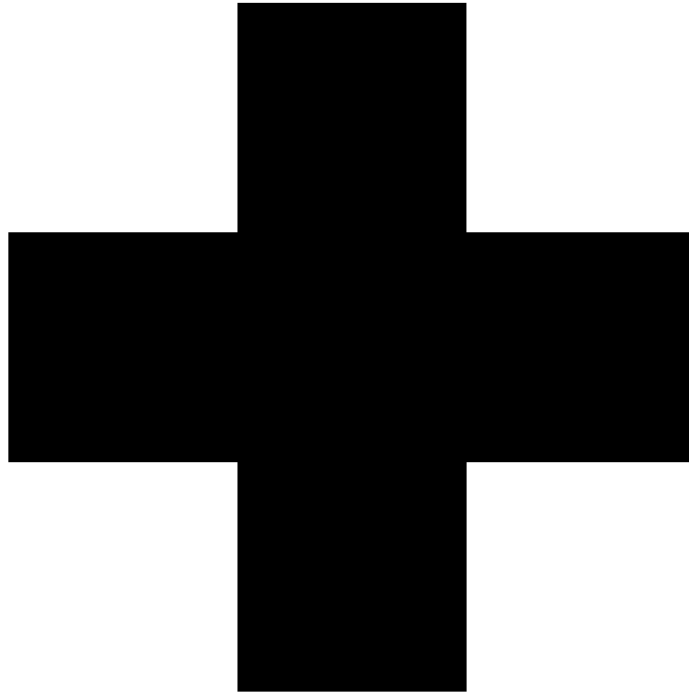
**OPEC of the West - OPEC-CTF
Wall panel Patterns for Printing = 90° Turn**



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OPEC of the West - OPEC-CTF
Wall panel Patterns for Printing = Castle Victory



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OPEC of the West - OPEC-CTF Wall panel Patterns for Printing = Cross Victory



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OPEC of the West - OPEC-CTF Wall panel Patterns for Printing = CaptureZone



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OPEC of the West - OPEC-CTF Wall panel Patterns for Printing

