

Contest Four: *Bomb Squad/Color Touch-Free*

ROBOTIC AUTONOMY
Summer 2002

You now have given your trikebot sight with CMUcam and are learning how to "see" from a remote location. This week's contests will require you to demonstrate well-rehearsed teleoperation as well as a new version of TouchFreeBot that uses multiple colors to cue the robot in a game of robot-on-robot strategy.

Bomb Squad

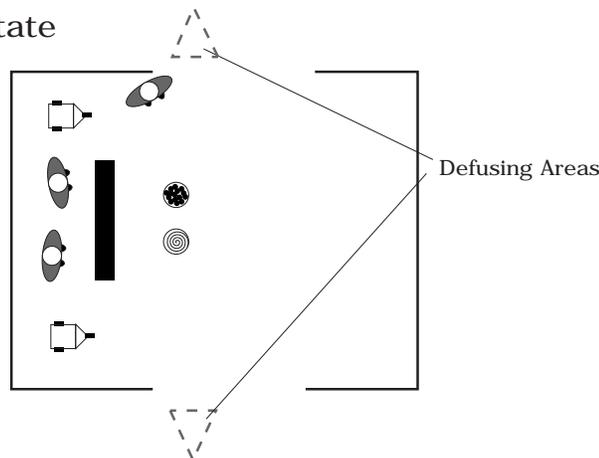
Your whole team (including the robotic members) will work together to defuse a scary compound bomb. For this dangerous assignment you may deploy two of your trikebots. You'll also use two humans as trikebot drivers and the lucky third will serve as the spotter who defies death.

Two styrofoam cups have been found in the central hall. Each contains a different colored substance. If the chemical vapors from each substance mix, all will be lost. Your bomb squad's job is to separate these substances by 3 meters so that you'll neutralize the possibility of explosive chemical reaction. You may make reasonable modifications to your robots so that they can handle the cups. You must act fast, but safely. The winning team will safely clear the bomb in the shortest time.

You have two robot drivers who are shielded from possible danger by a barrier. They can drive the robots but cannot see them. One highly paid human spotter is also on your team, and he can see the area well. He is so highly paid and well armored that he is allowed beyond the safety wall and can give directions. Your job is to get your trikebots to the containers and move them to separated defusing areas without upsetting the cups.

Remember, if you spill either of the cups the vapors will mix and GAME OVER!

Initial Game State



Color Touch-Free

We're revisiting challenge #3, but this time using much more capability and intelligence. Team members will be TouchFree signalers to one trikebot, each one manning a zone. Your robot begins in a marked start position in front of Building 17. Your job is to help it cross the large concrete entrance, enter the opposing sidewalk, and travel to the finish line near the end.

Two teams simultaneously race to the finish lineó the winning team has the best time. You can communicate with your robot, after a single button-press to start the game, using only color markers that you place in front of CMUcam or the rangefinder. You can use multiple signalling colors to communicate different commands to the trikebot. You may not foul the other robot nor the opposing signalers, or you'll rack up a of major penalty. *Good luck!*