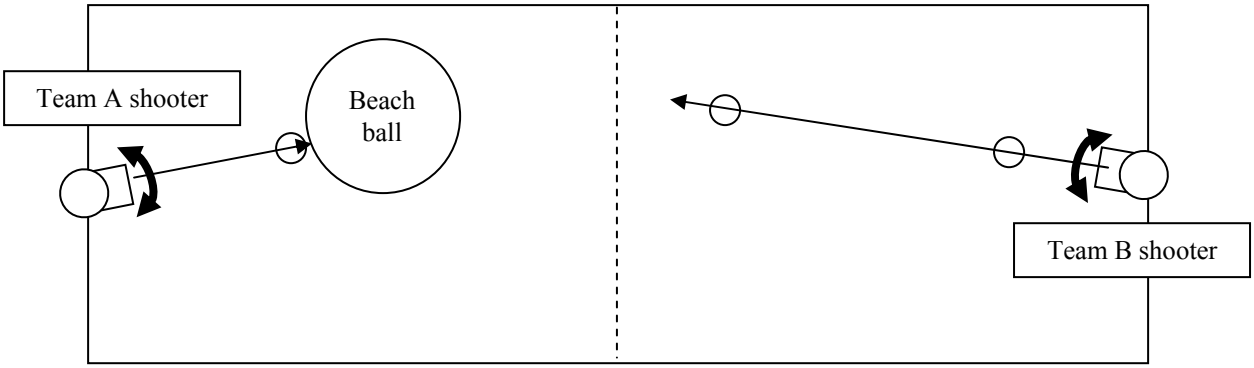
MAE 106 Mechanical Systems Laboratory
Final Project Initial Description 2009

CROSSFIRE

Your team (4 people on a team unless a TA or Prof. Reinkensmeyer gives an exception) will build a robotic player for the game crossfire. Your team will then compete in a tournament with the 4 other teams in your lab section. The 9 winners of the lab sections will advance to the grand finale, which will be held on the last day of lecture during the lecture time.



TOP VIEW

The basic idea is to try to move the beach ball to your opponent's side by shooting small foam balls at it. The loser will be the person with the ball on their side after one minute. You will get a kit with a motor and you must actuate the shooter (an air gun controlled by a pneumatic valve, which will already be built for you) with the motor to make it rotate. The air gun will have a proximity sensor that will electronically indicate the presence of the ball when the ball is in front of the sensor. The table will be 4' wide by 8' long. You must be able to install your drive for the shooter in three minutes, or you will disqualified. You will have to control the pneumatic valve and your motor using a LabView program that you write

You will be provided with a starter's kit (available beginning April 13 from Dave Hartwig, EG 2118). Key elements in the starter's kit will be a small, DC brushed motor, power amplifier, op amp, and potentiometer.

IMPORTANT NOTE: You must program the computer to automatically control the robots. You may not teleoperate the robots using a potentiometer. In other words, once the game begins, you cannot touch any part of your robot.