

## Followup:

What went well:

- Climbed the generator well at the right times
- Robust, strong robot construction for defense and offense

What needs improvement:

- Aiming for the high goal as it is more rewarding
- Constructing the robot to traverse under Control Panel
- Fuel cell holding strategy didn't go as planned; the design could be improved to efficiently hold more cells

## General Strategy

This season, we kept the principle of a **simple**, **robust**, and **fast** robot. These three ideas are so important to us because we prefer to be consistently good over occasionally great. Our strategy at-a-glance is to focus on scoring five power cells at a time to the bottom port of the loading bay. Additionally, we want to be able to spin the control panel to be able to advance to the next stage of scoring and activate the shield generator. We also plan to climb onto the generator switch and be able to level ourselves while we are on the switch to get the fifteen point level bonus. This general strategy allows us to do multiple things. First, we are able to be a very reliable alliance partner as we have fast and consistent cycle times. Second, we are able to keep the robot as simple as possible (KISS principle) since we are not planning to have any major actuated mechanisms. And finally, we are able to perform easy maintenance on our robot as a result of simple mechanisms.

## Power Cell Scoring

We are focusing on scoring in the bottom port of the loading bay. The main discussion on this was about the time vs point values. We thought that we would be able to dump five power cells at a time into the bottom port but that, due to the space needed to add a shooter mechanism, we would only be able to shoot a maximum of three power cells at a time. Thus, one cycle at the lower port would give us five points (five power cells scored at one point each) while one cycle in the upper would only give us one point more (three power cells scored at two points each). We decided that the one point difference was not worth the added complexity and inevitable time needed to line up to shoot in the high port. Additionally, the target zone offers protection (G10) while we're shooting whereas if we were to back up from the alliance wall to shoot, we would no longer be protected while we were lining up and shooting.

## Control Panel Scoring

We feel that being able to spin the control panel in order to advance to the next stage and activate the shield general will be integral in achieving high scoring volume and low cycle time. In addition, being able to both spin the control panel the required amount to advance to the next stage ( at least three rotations, but no more than five - game manual page 28) will make us a more versatile alliance partner as we are able to complete more tasks. We also decided that being able to automate this task will drastically decrease our cycle times as we would be able to quickly drive up to the control panel and clasp on, then, in a matter of seconds, perform the required task for our current stage in match scoring.

## Generator Switch Climbing

For endgame, we are planning on climbing, alone or with other teams, on the generator switch to receive the climb bonus of 25 points. Our big idea for the climb is to be able to auto level to be able to be very flexible when climbing with other teams. Additionally, we are planning on being able to adjust our position on the generator switch while we are already hanging so that if we are the first team to get on the switch, we will be able to maintain levelness while other teams climb on the generator switch. To account for matches where we might be the only team climbing, we have decided to go with a two-prong climbing system so that we will be able to climb in the center of the generator switch need be.