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The Long Journey to the Finals: Vex World Championship

Dragging a squeaky, wobbly cart with a large cubical black box on top of it, my team and I entered The Kay Bailey Hutchison Convention Center which hosted the Vex World Championship. I felt accustomed to the setting seeing the large concrete walls, concrete floors, and hundreds of STEMies walking around. Returning to the Vex World Championships once again, my team and I had our sights set high, reaching the dome where the grand elimination rounds between divisions happen. My team had seven people including me, each of us devoted to being as competitive as possible. We had three long days ahead of us, and I shook with excitement and exhaustion. Having spent the last two months endlessly tinkering, building, and programming our robot, we all wanted to see how our robot would compare to the others.

The first two days consisted of qualification matches between teams in randomly selected alliances. Based on the number of wins each team has in the qualification matches, the tournament manager ranks them. After the tournament software calculates the final ranks, teams form the final alliances. Teams form alliances by a process where the number one ranked team chooses an alliance partner first, and then it goes down the ranks, each team picking another until teams form 16 alliances. With these alliances, the elimination round starts, and if an alliance loses, the tournament manager removes them. Each match consisted of a fifteen-second autonomous period in which code controls the robot. Then, a one-minute forty-five-second driver-controlled period in which the driver of a team controls the robot with a controller. To

score points in this game, robots had to score discs into a net (similar to disc golf), spin colored rollers to their alliance color (either blue or red), and then at the end of the match, called the endgame, robots had to cover as many of the tiles that made up the field as possible, usually with string.

Two days later we ranked fifteenth out of the eighty teams in our division. With our rank not as high as we wanted it to be, we started looking for higher ranked teams to alliance with. After trying to persuade teams in any way possible, we finally landed an alliance with the fifth-seeded team. After our round of 16 match and quarterfinal matches went by with a few hiccups, we reached the semifinals, the match everyone in our alliance worried about. The opponent alliance consisted of the world champion from the previous year and one of the best teams in the nation. As our robot lurched forward for autonomous, everyone sat on the edge of their seats, as screwing up in autonomous would lose us the match. Thankfully, although we did not score all of the discs that we wanted to shoot into the basket, we did not break anything on our robot.

Watching the four robots zoom around the field, intaking the discs and firing them into the net, everyone expected a close match. In the last ten seconds of the match, called the endgame, the robots moved to the corners of the field as they fought over the rollers and an optimal spot for expansion (to try to not get their string caught in other robots). As the announcer counted down “3! 2! 1,” we heard the hissing of pneumatics and the twang of rubber bands as we saw strings fly across the field. But, the unthinkable happened. Inspecting the field, the referee noticed that one robot from each alliance had shot a string out of the field (an illegal action), resulting in a double DQ, so there had to be a rematch. We had to set up everything once again as we hoped the match would go as well as it did the previous time.

After the four robots roared to life for the second time, our driver pushed one of the opponent teams into the net behind one of the goals (which keeps missed shots in the field), resulting in the opponent being disabled for the rest of the match due to the possibility of them damaging the field. Thinking we had won a match previously thought unsinkable, we radiated with excitement as the match came to a close. But, once again, the referee had something to see as the other alliance protested a call in the match. As per the rules, both the robot stuck in the net and the robot that pushed the other robot into the net had to be disabled, but the referee missed the event and forgot to disable our robot as well. So, we had to do another rerun. This time, it looked like we lost as the match ended, but in the endgame this time, one of the opponents expanded out of the field! We won!

In the finals, we barely lost the first of the best of three as we messed up and had forgotten to turn on the pneumatic valve to let the air flow throughout the robot. During the second match, we pushed one of the opponent teams to expand out of the field. With everything on the line in the final match and the crowd roaring, we thought we could win. But, as the robots lurched forward and as the driver control period started, all of our hopes dashed in an instant. Our driver drove through the low goal (an area on the field, separated by the rest by an L-shaped raised piece of plastic with two openings to enter and exit) when one of the opposing teams caught him off guard and pushed us over the low goal and onto a disc, making us unable to move for the rest of the match. And with this, our robotics season came to a close. As everyone jumped with happiness with our ability to make it to the finals, but saddened by losing our prospect of going to the dome, we received our awards as some bursted out sobbing and stumbled back to the table.

After two months of hard work, we were done for the season. Looking back, we realized the importance of practice, and we realized that we should have spent the two months practicing with our old robot instead of building a new one. From this experience, I learned first hand the power that burnout has on someone. As I spent the entire school year managing both school and doing robotics, I had become burnt out by spending close to a thousand hours on it. At the competition, I had started to care less about the outcome, and started to desire that we would be done. It was more so the drive of my teammates that kept us striving to get as far as possible. Thus, I learned the power of a break. I should have given myself a week or two every couple of months to keep myself interested in robotics and to recharge. Moreover, this event made me realize that even little mistakes can have disastrous effects. My mistake of forgetting to turn the pneumatics back on could have been one of the deciding factors in us losing the entire championship, illustrating that even the smallest mistakes can have enormous effects.