

2017 FLYSET FTC Workshop

Hosted by

technicbots



#8565 Robot Improvements



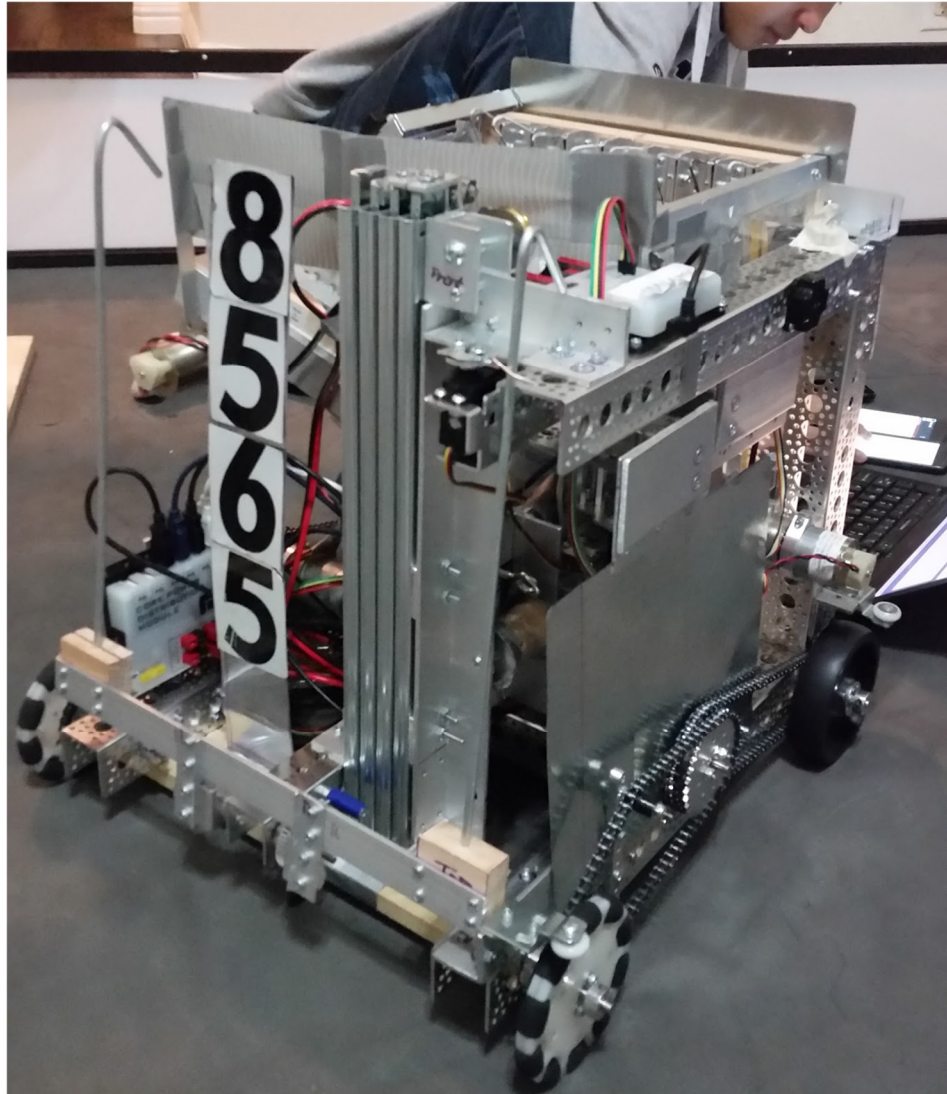
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Qualifier





Qualifier Highlights

- Broke the world record with a score of 260 with team #7172 Technical Difficulties
- During the competition, before finals our shooter broke, but we managed to fix it.



Robot details

Chassis:

- 2 motor 4 wheel drive with chains
- Slow turns
- Motors get hot easily

Teleop:

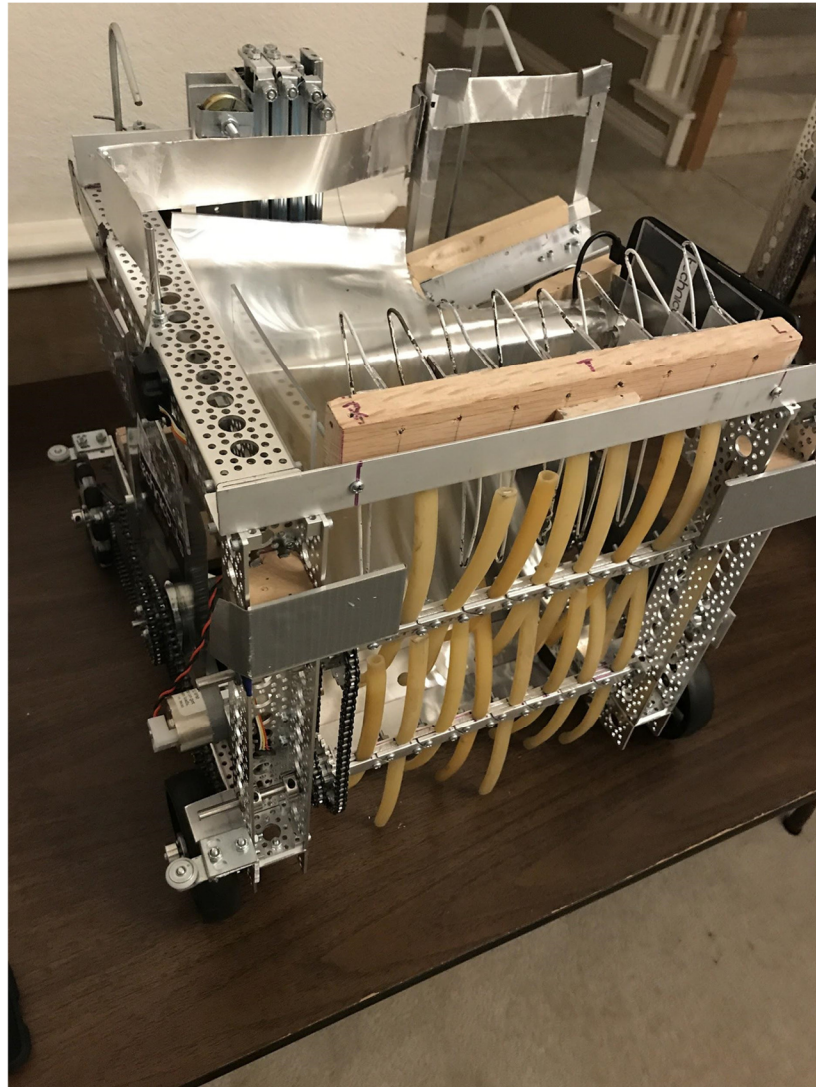
- Spring flicker: somewhat consistent
- Could hold 2 - 3 particles in the robot at once

Endgame:

- Could cap the cap ball, but the driver had to be very delicate with the controls

North Texas Regional Championship





North Texas Regional Highlights

- An inconsistent autonomous (because of loosen guider wheel structure) made it very difficult to win games in this regional
- We barely qualified for Super Regionals: one more loss would have ended our season

Autonomous Changes made for Regional

- Slightly tuned the navigation portion: turns and moving forwards and backwards.

Autonomous Performance

- Continued to get stuck occasionally on the border and mat, costing us a few qualification matches
- Pretty inconsistent, we had little confidence that we could get 2 beacons

Teleop Changes made for Regional

- Modified our tape walls that prevented particles from flying out of our sweeper
- Converted from primarily Tetrax to Actobotics for the chassis and robot general structure

Teleop Performance

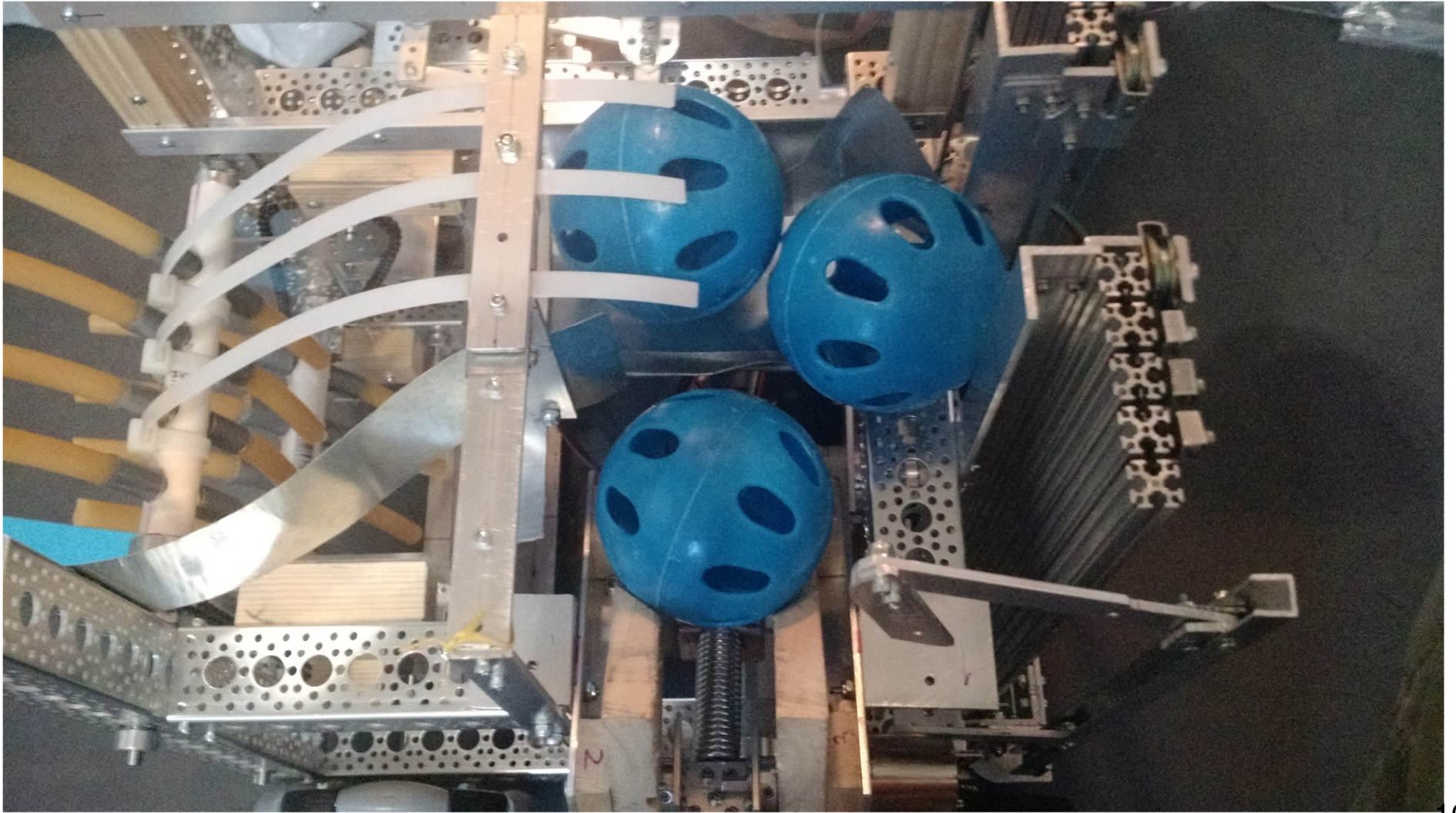
- Averaged around 4 particles a game as an alliance
- Wheels fell off less with Actobotics clamps

Endgame Changes made for Regional

- Minor adjustments

South Super Regional (SSR)





South Super Regional Highlights

- Qualification matches: 7 wins - 2 loses
- Lost our first eliminations match

Autonomous Changes made for SSR

- Changed the autonomous route to go for the further beacon first (bonus discovered at Worlds)
- Added more autonomous programs for strategy diversity
- Extended our glider wheels further out so wheels wouldn't fall off the edge

SSR Autonomous Performance

- Hit both beacons 80% of the time
- Often missed one particle out of two

Teleop Changes made for SSR

- Changed to 6" wheels to drive faster, 2 of which are omni wheels for faster turns
- Added an ultrasonic sensor to detect how many balls in storage
- Lengthened the path the particles had to travel in order to hold more balls
- Added zip ties to help glide the balls from the

SSR Teleop Performance

- Averaged around 10 particles in an alliance
- Able to navigate the field much faster

Endgame Changes made for SSR

- Converted to REV Robotics rails for our duo linear slide
- Changed from aluminum sticks to aluminum beams on our cap ball mechanism, and adjusted their dimensions
- Changed the linear lift motor cylinder shape to more of an hourglass to prevent the string from falling out

SSR Endgame Performance

- Slightly better than previous tournaments
- Very few mechanical errors, mainly relied on driver performance

Houston World Championship





Houston World Highlights

- Qualification matches: 8 wins - 1 lose
- Lost our first eliminations match:
 - The first game the opponents outscored us in particles
 - The second game our alliance disconnected after getting sandwiched

Autonomous Changes made for Worlds

- Tuned the pathway of the robot so that it wouldn't cross the middle of the field
- Tuned basic turns, and distances
- Added more autonomous programs for more variety
- Extra long beacon pressers

Houston Worlds Autonomous Performance

- 95% consistency autonomous (2 beacons and 2 particles) in worlds, messed up once on the first day
- Extremely fast autonomous, was able to avoid defensive autos from opponents

Teleop Changes made for Worlds

- Same spring flicker, but adjusted the length of the spring to shoot less far
- Added a passive beacon pressed on the back
- Changed our zip tie particle glider to wooden triangles for more speed

Houston Worlds Teleop Performance

- Averaged around 14 - 18 particles WITH our alliance partner
- Could more easily press beacons

Endgame Changes made for Worlds

- Very minor length adjustments on our arm to allow cap ball to get on easier

Houston Worlds Endgame Performance

- Cap ball success continued to rely too much on driver performance, sharp turns or fast accelerations would make the cap ball roll off

