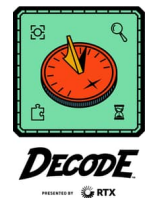




2025-2026 DECODE Season



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A MESSAGE OF APPRECIATION

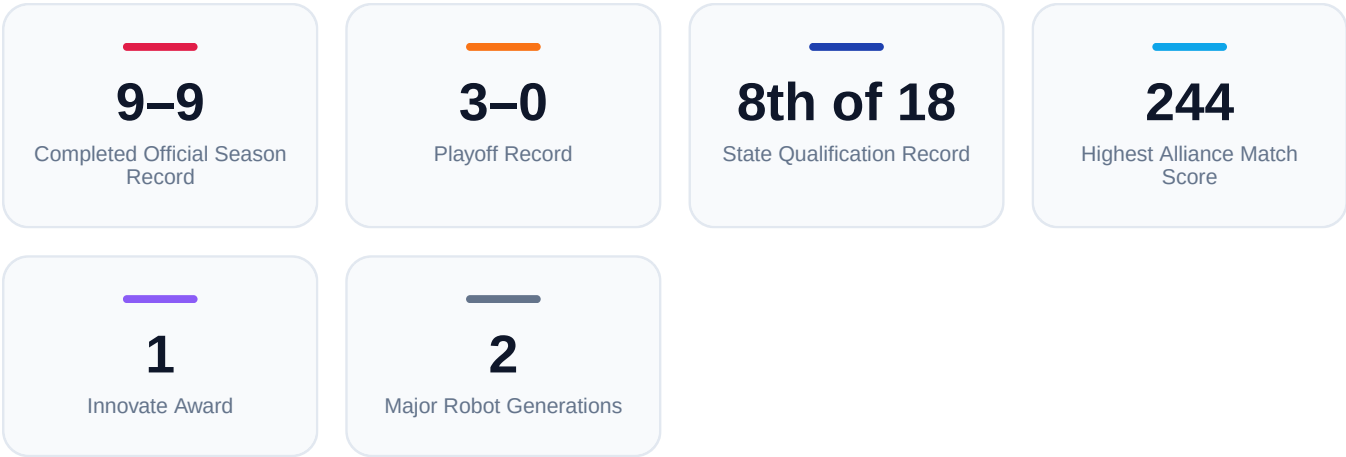
"We are grateful for your generous support of our team and our mission."

Asa H. David M. Davy G. Heath V. James H. Sammy G. Dan C. Russell M. Gray S.
Felix M. Isabel M. Brian H.

About FTC Mechanical Error 33778

Mechanical Error is a second year First Tech Challenge Robotics team in Albuquerque, NM. We are a community team working out of the Manzano High School Teen Tech Center,

By the Numbers



Students



Asa H.

- Team Co-Captain
- Drive Coach
- Drive Team
- Builder
- Fabricator
- Outreach
- Fundraising
- Skilled Bandsaw
- Electronics
- Wiring & Soldering
- Assembly
- Rookie Year
- Portfolio / Notebook



David M.

- Builder
- Fabricator
- Skilled 3D Prints
- Wiring & Soldering
- Assembly
- Design & Prototype
- Portfolio / Notebook
- CAD Designer



Davy G.

- Skilled Autonomous Pathing
- Skilled Vision Coder
- Skilled Java Coder
- Rookie Year
- Team Co-Captain
- Shop Manager
- Human Player
- Outreach
- Fundraising

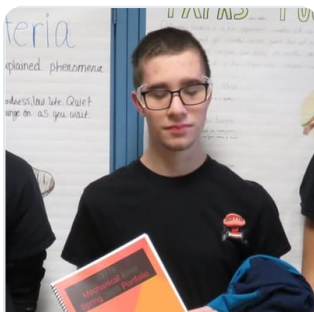


Heath L.



James H.

- CAD Designer
- Builder
- Fabricator
- Drive Team
- Team Co-Captain
- Skilled Bandsaw
- Outreach
- Fundraising
- Portfolio / Notebook
- Assembly



Sammy G.

- Drive Team
- Driver Chassis
- Electronics
- Skilled Java Coder
- Skilled Vision Coder
- Skilled Autonomous Pathing
- Rookie Year
- Learning Java Code
- Portfolio / Notebook
- Outreach
- Fundraising

Coaches and mentors

VERUS RESEARCH



Hank A.
Managing Director & CFO

FTC MECHANICAL ERROR 33778



Dan C.
Coach

Team Administrator

Safety Coordinator

Quality Control

Game Strategy

Robotics Ambassador

Media Production

Design

3D Prints Mentor



Russell M.
Coach #1

Shop Admin

Build & Fabrication

Java Programming

Wiring and Electronics

Quality Control

Machine Training

Systems Mentor

Design

Game Strategy

3D Prints Mentor

Media Production

Robotics Ambassador

CAD Training

Mechanical Engineering



Gray S.
Mentor

FIRST Alumni

Build & Fabrication

Robot Driving

Wiring and Electronics

CAD Training

Electrical Engineering

Quality Control

Game Strategy

Design

Mechanical Engineering

Systems Mentor

Robotics Ambassador

Robotics Control Systems

3D Prints Mentor



Felix M.
Mentor

 FIRST Alumni

 Mechanical Engineering

 Wiring and Electronics

 Build & Fabrication

 Quality Control

 Electrical Engineering

 Robotics Ambassador

 Game Strategy

 Robotics Control Systems

 Design

 Systems Mentor

 Machine Training



Isabel M.
Mentor

 Robot Driving

 Build & Fabrication

 Java Programming

 Quality Control

 Game Strategy

 Robotics Ambassador

 Robotics Control Systems

 Applied Mathematics

 Computer Science

 Systems Mentor

 Design

 FIRST Alumni



Brian H.
Mentor

 Build & Fabrication

 Wiring and Electronics

 Quality Control

 Java Programming

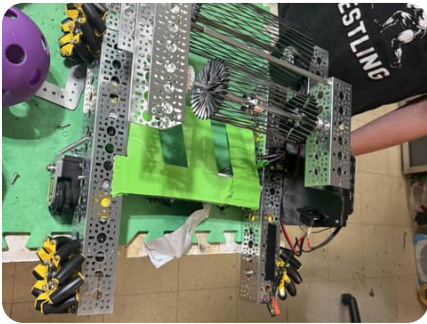
 Mechanical Engineering

 Computer Science

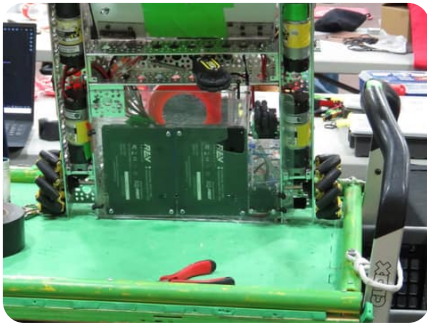
 Game Strategy

 Systems Mentor

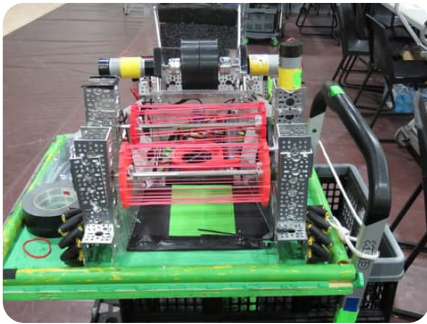
Robot showcase



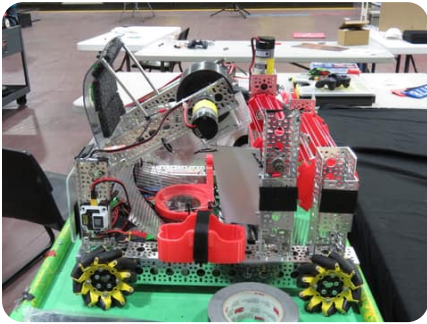
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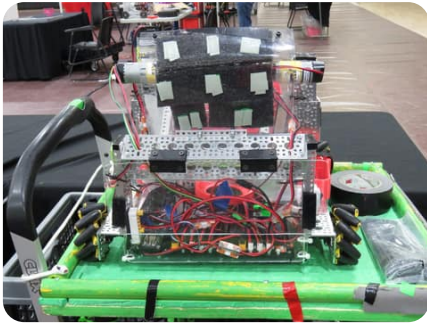
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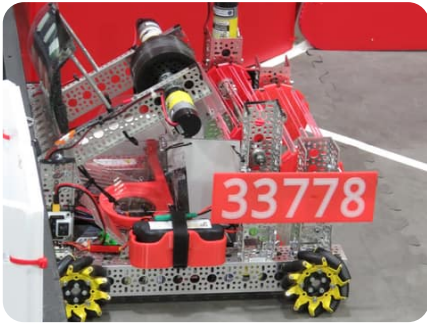
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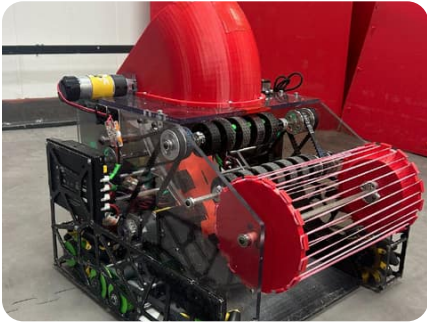
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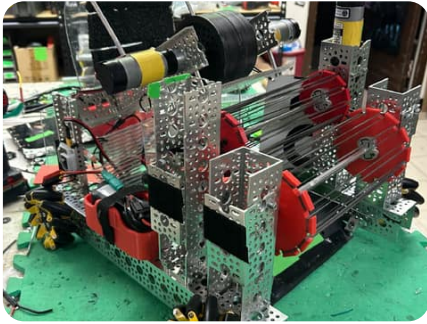
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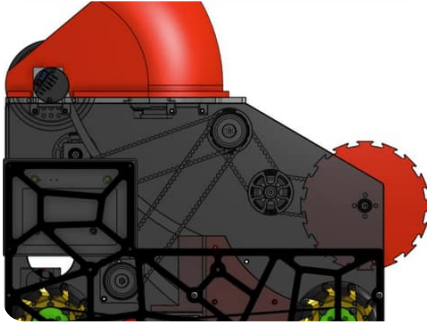
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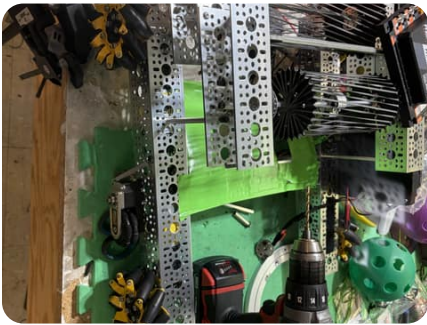
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2026-06-22_07-19-06



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Year in review

DECODE

Total hours invested: 1,680

OUR SEASON

Creating a Team for Developing Students Mechanical Error was formed to give less-experienced students increased ownership and meaningful hands-on roles.

ENIGMA's veteran program already included experienced builders, programmers, drivers, and leaders. Placing every new student onto the established team could have left developing members watching older students make most of the important decisions.

The sister-team model provided another path.

Mechanical Error's students needed to learn how to:

- Build and wire a complete robot.

- Install and configure FTC electronics.

- Program drivetrain and mechanisms.

- Develop autonomous routines.

- Pass inspection.

- Maintain the robot between matches.

- Communicate with alliance partners.

- Present to judges.

- Organize a pit.

- Make strategic decisions.

- Recover from failures.

- Take responsibility for the team's results.

ENIGMA shared its workshop, tools, field, mentors, manufacturing resources, and experience, but Mechanical Error's students still had to create and operate their own program.

Starting With a Learning Robot The team's first robot used a relatively simple structure inspired by machines already competing in the New Mexico league.

Its purpose was not to become the perfect final DECODE robot. It was to create a platform students could build quickly and use to understand FTC systems.

The early robot allowed members to practice:

- Mecanum-wheel assembly

- Motor installation

- Structural framing

- Electronics mounting

- Basic intake construction

- Launcher concepts

Wiring

Tele-operated driving

Autonomous programming

Field testing

Match repair

Mechanical Error competed with this developmental machine at the Albuquerque and Alamogordo Qualifiers.

Those events gave the students something that shop testing alone could not provide: experience under inspection deadlines, match schedules, field tolerances, alliance coordination, defensive contact, and competition pressure.

Learning Through Two Qualifiers Mechanical Error ranked 12th at both regional qualifiers.

At Albuquerque, the team finished with two wins and three losses. At Alamogordo, it again recorded two wins and three losses.

The team did not reach the playoffs at either event, but the results told only part of the story.

The students were gathering evidence about:

Weight distribution

Motor placement

Chassis protection

Artifact transfer

Intake reliability

Shooter consistency

Autonomous movement

Driver control

Repair access

Structural durability

Rather than viewing the two qualifiers as the completed season, the students treated them as full-scale design tests.

A Complete Championship Redesign Following the qualifiers, Mechanical Error moved from a basic learning robot to a far more refined custom design.

The students retained useful components—including the mecanum wheels and drive motors—but reconsidered how those components were arranged and supported.

The final robot differed significantly in:

Chassis construction

Motor placement

Power transmission

Weight distribution

Electronics protection

Artifact routing

Intake geometry

Launcher alignment

CAD organization

Autonomous control

Shooter regulation

This was not simply a cosmetic rebuild. The students reconsidered the robot as a complete system.

Center-Mounted Drive MotorsIn the early robot, the relationship among the motors, wheels, and surrounding structure limited space and design flexibility.

The redesigned drivetrain moved the motors toward the center of the chassis.

The motors transferred power to the mecanum wheels through bevel gears and belts.

This arrangement provided several advantages:

Motors were protected within the robot.

Weight moved closer to the center.

Outer chassis space became available for mechanisms.

Wheel placement could be controlled more deliberately.

Drive components were less exposed to collision damage.

The team gained greater control over the complete chassis layout.

Students learned that keeping the same motors and wheels does not mean the drivetrain remains the same. Placement, transmission, protection, and structural support can fundamentally change how the robot performs.

Polycarbonate ChassisThe final chassis used quarter-inch CNC-machined polycarbonate.

Its primary structure included:

Two side plates

One top plate

One rear plate

Metal wheel guards

Integrated subsystem mounting locations

Polycarbonate provided a useful combination of strength, impact resistance, transparency, and machinability.

The clear structure made it easier to inspect internal mechanisms and wiring, while the metal guards added stability and protected the wheels during contact.

The new chassis reflected a transition from assembling stock structural components toward designing a robot around custom-manufactured parts.

Streamlined Artifact PathThe original machine used a two-part transfer arrangement and a servo-arm mechanism.

The final robot replaced that system with a more direct polycarbonate track connecting the intake to the outtake.

Artifacts no longer needed to move through several disconnected mechanisms. They followed a continuous path from acquisition toward the launcher.

The streamlined route reduced:

Transfer distance

Alignment changes

Potential jam locations

Mechanism timing

Unnecessary moving parts

A direct path also made the system easier for students to understand, test, and repair.

Custom Intake and OuttakeThe final intake and outtake components were designed in CAD and produced through a combination of CNC machining and 3D printing.

The students replaced collections of mismatched or adapted parts with purpose-built components intended to work together.

The intake ramp consisted of four printed sections joined with heat-set inserts and screws.

The indexing system used four CNC-machined rail components:

Two upper rails

Two lower rails

These guided artifacts from the intake toward the launcher.

Creating dedicated components improved:

Ball fit

Alignment

Control

Shot consistency

Structural strength

Repeatability

Ease of replacement

The multi-layer printed construction also helped strengthen components that needed to survive repeated artifact contact.

Rear-Facing FlywheelThe final robot launched artifacts from the rear.

The intake collected from one side of the robot, while the flywheel rotated in the opposing direction to send artifacts out the back.

This pass-through concept reduced unnecessary robot movement.

Instead of collecting artifacts and then turning the entire machine around to score, the robot could move artifacts directly from intake to launcher.

The team sought to improve:

Cycle speed

Transfer efficiency

Shot preparation

Driver simplicity

Overall scoring rhythm

Fixed Hood and BackspinThe launcher hood was designed in Onshape and mounted flat against the CNC-machined

top plate.

The artifact exited at an angle of approximately 36 degrees.

The students selected the geometry to produce useful distance while applying backspin through the flywheel contact.

Backspin can help stabilize flight and influence how the artifact behaves after release.

The hood taught students how launcher performance depends on more than motor speed. Geometry, compression, contact length, exit angle, and spin all affect the final trajectory.

Pedro Pathing AutonomousMechanical Error used Pedro Pathing for autonomous movement.

The team created planned routes through a sequence of position setpoints.

The autonomous system stored target positions in an array. An index tracked the robot's current step and advanced when each destination was reached.

An enumeration controlled mechanism states, determining when the robot should intake and outtake along the route.

The portfolio's path diagram shows the robot:

Moving toward artifacts.

Intaking while traveling.

Returning toward the scoring area.

Outtaking toward the goal.

Repeating portions of the cycle.

This structure helped the programmers separate drivetrain movement from mechanism decisions while keeping the complete routine coordinated.

Multiple Autonomous Starting PositionsThe team developed selectable autonomous options for:

Red alliance

Blue alliance

Near starting position

Far starting position

This made Mechanical Error more adaptable to different match assignments and alliance plans.

The students learned that an autonomous routine is not useful only because it works in isolation. It must begin from the correct field location and avoid interfering with a partner.

Mecanum Tele-Operated ControlThe robot used mecanum-drive kinematics for directional movement.

Mecanum wheels allowed Mechanical Error to:

Drive forward and backward.

Strafe sideways.

Move diagonally.

Rotate.

Combine translation and rotation.

This gave the drivers flexibility when collecting artifacts and positioning for shots.

Two Shooting SetpointsThe tele-operated program included two preset launcher speeds:

Near shot

Far shot

Presets reduced the amount of manual adjustment required from the driver.

Instead of estimating flywheel power during every cycle, the operator could select a known setting based on range.

This improved repeatability and reduced decision-making under match pressure.

PI-Controlled ShooterThe team implemented feedback control for the launcher.

Although the students described the system through the broader PID framework, the derivative coefficient was set to zero because the mechanism performed well with proportional and integral control.

The controller repeatedly:

Measured actual flywheel speed.

Compared it with the desired speed.

Calculated the error.

Applied proportional correction.

Accumulated integral correction.

Adjusted motor power.

The proportional term drove the launcher toward its target speed.

The integral term corrected persistent error where the flywheel remained slightly above or below the requested value.

The result was faster spin-up and more repeatable shots than the team expected from fixed motor power alone.

Backup Competition ProgramsMechanical Error created backup copies of its autonomous and tele-operated OpModes at the beginning of events.

These backups preserved known working versions of competition code.

If a programmer changed the active program and introduced an unexpected problem, the team could return to a stable version rather than attempting to reconstruct it under time pressure.

This was a mature competition practice for a rookie team.

The students learned that software development at an event must balance improvement with risk management.

Albuquerque QualifierMechanical Error's first official competition was the Albuquerque Qualifier on December 12–13, 2025.

The team finished qualifications ranked 12th out of 17 teams with a 2–3 record.

Mechanical Error recorded victories by scores of 51–15 and 90–84.

The team did not advance to the playoffs, but the event gave students their first complete experience with inspection, queueing, alliance communication, match repair, and official FTC competition.

The early robot proved that the students could field a functioning machine. The event also revealed the limitations that would eventually motivate the Championship redesign.

Alamogordo QualifierAt the Alamogordo Qualifier on January 16–17, 2026, Mechanical Error again finished 12th, this time among 15 teams.

The team recorded another 2–3 qualification record.

Mechanical Error earned victories by scores of 93–31 and 46–34.

Students continued developing their driving, code, pit organization, and understanding of match strategy.

The two qualifier experiences gave them enough evidence to move beyond minor repair and begin a more complete redesign.

New Mexico ChampionshipMechanical Error arrived at the New Mexico Championship with a substantially improved custom robot.

The team finished qualifications ranked eighth out of 18 teams with a 2–4 record.

Mechanical Error participated in the highest-scoring qualification match listed on its team record, joining ENIGMA in a 244–14 victory.

The team also earned an 89–50 qualification victory.

Mechanical Error’s ranking and improved robot performance attracted the attention of its sister team.

ENIGMA, captain of the second-seeded alliance, selected Mechanical Error as its first partner.

Together, the teams won all three playoff matches:

149–98

184–64

164–72

Mechanical Error became the first team selected to the New Mexico Winning Alliance.

The team also earned the Innovate Award sponsored by RTX.

For a rookie program, the combination of championship victory and engineering recognition was extraordinary.

Innovate AwardThe Innovate Award recognized Mechanical Error’s creativity, engineering development, and implementation of an original solution.

The final robot demonstrated innovation through the complete redesign of:

Drive-motor placement

Belt and bevel-gear power transmission
Polycarbonate structure
Direct artifact track
Custom intake
Index rails
Rear-facing flywheel
Printed hood
Launcher control
Autonomous architecture

The award was especially meaningful because the final robot emerged from the students' first season of learning CAD, manufacturing, programming, and competition.

Advancing Beyond State Mechanical Error was one of four New Mexico teams recognized as advancing to postseason competition.

The team is scheduled to attend the Chicago Robotics Invitational Premier Event on July 24–26, 2026.

That invitation extends the rookie season beyond the regional championship and gives the students another opportunity to test their custom robot against strong programs from outside New Mexico.

Because the event had not yet occurred when this review was prepared, its competitive results are not included. A Rookie Team Becoming Independent Mechanical Error's season was successful not simply because it joined the Winning Alliance.

The deeper accomplishment was the transformation of its students.

At the beginning of the year, many were learning:

How motors connect.
How a mecanum drivetrain moves.
How to route wires.
How to open Android Studio.
How to build with FTC hardware.
How to use Onshape.
How to prepare for inspection.
How to communicate in the pit.

By the Championship, those same students had created a custom robot, written structured autonomous code, tuned shooter feedback, manufactured parts, supported other teams, earned an engineering award, and competed as regional champions.

GOALS

Create an Independent Rookie Team Mechanical Error's first goal was to become more than an extension of ENIGMA.

The students needed to learn how to operate their own FTC program while still benefiting from sister-team mentorship.

Success meant being able to:

Build the robot.
Understand its systems.
Maintain it at competition.
Write and modify code.
Communicate with judges.
Develop match strategy.
Solve failures.
Make decisions as a team.
Learn Through a Working First RobotThe early robot was intended to get students building and competing quickly.

The goal was not immediate perfection. It was to establish enough capability for the team to experience real matches and identify what needed improvement.
Complete a Custom Championship RobotAfter learning from the qualifiers, Mechanical Error set a larger goal: design and manufacture a substantially custom robot for State.

That required students to advance from assembling existing parts to creating:
Custom chassis plates
Custom intake components
Custom indexing rails
Custom transfer geometry
Custom launcher hood
Organized CAD files
Integrated electronics mounting
Improve Artifact FlowThe team wanted to reduce jams and move artifacts directly from intake to launcher.

The single polycarbonate track replaced a disconnected transfer and servo-arm arrangement.
Protect Critical ComponentsMoving the drive motors inside the chassis reduced exposure to impacts.

Metal wheel guards and polycarbonate plates further protected the drivetrain.
Improve Shot ConsistencyThe students wanted launcher performance that could be repeated rather than guessed.

Their solution combined:
Fixed hood geometry
Near and far speed presets
PI motor control
Improved artifact fit
More direct transfer
Build Reliable Autonomous RoutinesMechanical Error wanted autonomous movement that could follow repeatable field positions and coordinate intake and scoring actions.

Pedro Pathing, position arrays, indexed setpoints, and enumerated mechanism states supported this goal.
Remain Flexible for Alliance PartnersThe team created red, blue, near, and far autonomous choices so the robot could adapt to different matches.
Develop CAD and Manufacturing SkillsStudents wanted to progress from using stock parts toward creating a robot in

Onshape and manufacturing the design through CNC machining and 3D printing.

Learn Safe Competition ProgrammingBackup OpModes protected the team from losing known-good code while making changes at events.

Become Competitive at StateAfter ranking 12th at both qualifiers, the team wanted the redesigned robot to show measurable improvement at the Championship.

Mechanical Error rose to eighth in qualifications, was selected into the second alliance, won every playoff match, and earned the Innovate Award.

Continue Into Postseason CompetitionThe team's successful State performance created the opportunity to compete at the Chicago Robotics Invitational Premier Event.

Support Other TeamsMechanical Error's students were also expected to contribute to the wider New Mexico robotics community.

They helped teams with code, wiring, servo support, field setup, pit problems, and event cleanup.

Build a Future Leadership PipelineAs ENIGMA's sister team, Mechanical Error was designed to prepare students for larger leadership roles.

The team gave newer members direct responsibility in build, code, CAD, drive team, outreach, and competition operations.

Lessons learned

A Learning Robot Does Not Need to Be the Final RobotMechanical Error's original machine served an important purpose even though it was later replaced.

It allowed the students to learn quickly and reveal what a more competitive robot needed.

Competing Early Produces Better InformationTwo qualifiers exposed issues that were difficult to reproduce fully in the shop.

Students experienced:

Match impacts

Time pressure

Driver stress

Field variation

Alliance coordination

Queueing

Inspection requirements

Rapid repairs

That information guided the final redesign.

Keeping Some Components Can Still Produce a New RobotThe team retained its mecanum wheels and motors but changed their placement and power transmission.

Students learned that iteration does not require discarding everything.

Motor Placement Affects the Whole DesignMoving motors into the center changed protection, weight distribution, available space, and drivetrain layout.

Direct Paths Improve Reliability Every unnecessary transition creates another opportunity for a jam.

Replacing the two-part transfer and servo arm with one direct track simplified artifact movement.

Custom Parts Must Work as a System The team's intake and outtake improved when students stopped combining incompatible parts and instead designed components to fit one another.

Material Selection Matters Polycarbonate provided impact resistance, transparency, and CNC manufacturability.

Metal wheel guards added rigidity and protection where the plastic structure needed reinforcement.

CAD Organization Supports Collaboration Separating Onshape work into intake and outtake folders helped students find components and understand subsystem boundaries.

Backspin and Exit Angle Affect Shots Launcher performance depended on hood geometry as well as motor speed.

Feedback Control Improves Repeatability PI control allowed the shooter to respond to speed error rather than depending on one fixed motor-power value.

Not Every Controller Needs Every Term The derivative term was set to zero because the launcher worked well with proportional and integral correction.

Students learned that PID tuning is not about maximizing the number of active terms. It is about using the response the mechanism actually needs.

Presets Reduce Driver Workload Near and far shooting values gave the drivers repeatable choices under pressure.

Autonomous Should Be Organized Into States Using arrays, indexes, and enumerations made the routine easier to understand than one long sequence of unrelated commands.

Backup Code Is Competition Insurance Saving exact working OpModes reduced the risk of losing a functional robot because of a last-minute programming change.

A Low Qualifier Ranking Does Not Define the Season Mechanical Error ranked 12th at both qualifiers.

The students continued learning, rebuilt the robot, ranked eighth at State, became regional champions, and earned the Innovate Award.

Mentorship Should Lead Toward Ownership ENIGMA provided resources and guidance, but Mechanical Error's students still needed to make decisions and solve their own problems.

Rookie Students Can Contribute to Other Teams Mechanical Error did not wait until it was an experienced program before helping others.

Its students shared the skills they had already developed.

Championship Partnerships Can Reflect Development Being selected by ENIGMA was not merely a favor between sister teams.

Mechanical Error's rebuilt robot had become strategically valuable enough to help win the New Mexico Championship.

Skills and growth

FTC Robot Construction Students learned how to turn loose hardware into a complete competition machine.

Mecanum Drivetrain Assembly The team developed experience with:

Wheel orientation

Motor direction

Strafing

Diagonal movement

Rotation

Weight distribution

Drive control

Bevel-Gear Power TransmissionThe final drivetrain used bevel gears to redirect motor power toward the wheel system.

Belt DrivesStudents learned belt alignment, pulley placement, tension, and power transfer.

Center-Mounted MotorsThe redesign developed understanding of packaging and component protection.

Polycarbonate DesignStudents learned to design quarter-inch structural plates for CNC machining.

CNC ManufacturingThe chassis and indexing rails required students to think about:

Tool access

Hole placement

Edge distance

Part orientation

Fasteners

Fit

Assembly order

Onshape OrganizationThe team divided its CAD into intake and outtake folders.

This supported clearer subsystem ownership and easier navigation.

Heat-Set InsertsThe four-part intake ramp used heat-set inserts and screws to create a serviceable printed assembly.

Multi-Part 3D PrintingStudents learned when a mechanism should be divided into several printable sections rather than produced as one large part.

Intake GeometryStudents studied how the ramp, rollers, and guide structures affected artifact acquisition.

Indexing RailsThe custom upper and lower rails kept artifacts aligned as they moved toward the launcher.

Pass-Through DesignThe direct path taught students how reducing changes in direction can improve cycle efficiency.

Flywheel Launcher DesignStudents gained experience in:

Wheel speed

Contact

Compression

Hood geometry

Exit angle

Backspin

Repeatability

Pedro PathingThe programming team used position-based path following for autonomous movement.

Arrays and Indexed SetpointsStudents stored autonomous targets and advanced through them systematically.

Enumerated Mechanism StatesEnums controlled intake and outtake actions along the path.

Multiple Autonomous ModesThe robot could be configured for different alliances and starting positions.

Mecanum KinematicsThe tele-operated program translated joystick inputs into individual wheel commands.

PI ControlStudents tuned proportional and integral feedback for the outtake motors.

Near and Far Shot PresetsThe driver-control system used known speed targets for different ranges.

Software Risk ManagementBackup autonomous and tele-operated programs protected known-good competition code.

Competition DebuggingThe team learned to isolate problems under short match-turnaround times.

Inspection and Pit OperationsStudents developed routines for preparing the robot, organizing tools, checking fasteners, charging batteries, and responding to the queue.

Judging and Portfolio DevelopmentThe team documented build, code, design, and outreach work for award evaluation.

Gracious ProfessionalismStudents supported other teams and helped restore event venues after competition.

Growth Beyond the RobotMechanical Error's greatest development was its transition from learners to contributors.

Students began the season receiving help with basic systems. By the end, they were:

Designing a custom chassis.

Manufacturing parts.

Writing autonomous code.

Tuning feedback control.

Helping other teams.

Competing in championship playoffs.

Earning an engineering award.

Preparing for a Premier Event.

Competitions

New Mexico FTC Albuquerque Qualifier

Dec 13, 2025 · La Academia de Esperanza Charter School

2–3 record, Ranked 12th

The Albuquerque Qualifier was Mechanical Error 33778's first official FTC competition.

The rookie team entered with an early learning robot built to give its developing students practical experience with FTC construction, electronics, programming, mecanum driving, inspection, and competition procedures.

Mechanical Error completed five qualification matches with a 2–3 record and ranked 12th out of 17 teams.

The team earned victories by scores of:

51–15

90–84

Mechanical Error did not advance to the playoff rounds, but the event provided valuable evidence about the robot's structure, transfer system, motor arrangement, artifact handling, shooter consistency, and autonomous development.

Students also gained experience with queueing, alliance communication, pit repairs, match preparation, and operating under a fixed competition schedule.

The event established an important baseline. Mechanical Error had successfully built and fielded a functioning robot, but the students could now see what needed to change if they wanted to compete more effectively at the New Mexico Championship.

New Mexico FTC Alamogordo Qualifier

Jan 17, 2026 · Alamogordo High School, Alamogordo, New Mexico

2–3 record, Ranking 12th

The Alamogordo Qualifier was Mechanical Error's second official competition with its early-season robot.

The team again completed five qualification matches with a 2–3 record, ranking 12th out of 15 teams.

Mechanical Error earned victories by scores of:

93–31

46–34

The team did not enter the playoffs, but Alamogordo gave students another full tournament of experience and confirmed several limitations of the original design.

The students had now competed enough to understand that improving the robot would require more than small adjustments. Motor placement, chassis structure, artifact routing, intake and outtake geometry, shooter control, and autonomous organization all needed reconsideration.

Following the two qualifiers, Mechanical Error began the major redesign that produced its custom State Championship robot.

New Mexico FIRST Tech Challenge DECODE Championship

Feb 21, 2026 · Menaul School, Albuquerque, New Mexico

Winning Alliance 1st Pick, Innovate Award

Mechanical Error arrived at the New Mexico Championship with a substantially redesigned robot.

The new machine used CNC-machined quarter-inch polycarbonate plates, protected center-mounted drive motors, bevel-gear and belt power transmission, metal wheel guards, a direct artifact track, custom printed intake components, CNC index rails, a rear-facing flywheel, a fixed launcher hood, Pedro Pathing autonomous routines, and PI-controlled shooting.

Mechanical Error finished qualifications with a 2–4 record and ranked eighth out of 18 teams.

Its qualification victories included:

244–14 with sister team ENIGMA 16265

89–50 with Team 31564

As captain of the second-seeded alliance, ENIGMA selected Mechanical Error as its first partner.

The sister teams then completed an undefeated playoff run:

149–98 in the opening round

184–64 in the upper-bracket semifinal

164–72 in the championship match

Mechanical Error became the first team selected to the New Mexico Winning Alliance.

The team also earned the Innovate Award sponsored by RTX, recognizing the creativity and engineering development demonstrated by its custom Championship robot.

The result completed an exceptional rookie-year transformation. Mechanical Error progressed from ranking 12th at both qualifiers to winning the New Mexico Championship and receiving one of the event's major engineering awards.

The Championship also qualified Mechanical Error for postseason competition.

Chicago Robotics Invitational Premier Event

Jul 26, 2026 · Chicago-area Premier Event

TBD

Mechanical Error is scheduled to attend the Chicago Robotics Invitational Premier Event following its successful New Mexico Championship performance.

The event will give the rookie team an opportunity to compete against strong FTC programs from outside New Mexico and continue developing its custom robot, autonomous routines, shooter control, match strategy, and team operations.

Because the Chicago Robotics Invitational had not yet occurred when this review was prepared, no match record, ranking, alliance result, or award result is included.

The invitation itself is a significant accomplishment. Mechanical Error's first FTC season progressed from two regional qualifiers to a New Mexico Championship victory, Innovate Award, and Premier Event opportunity.

Outreach

Supporting a Rookie Team in GallupDavy traveled to Gallup with ENIGMA to support rookie FTC Team 31652, Gearheads².

The visit included helping the team set up its field and introducing members to basic programming.

Field setup can be a significant challenge for a new program. Correct dimensions, tile placement, field elements, and scoring structures all affect whether practice resembles competition.

Teaching introductory code also helped the rookie team begin moving from hardware assembly toward an operational robot.

Teaching Android StudioSammy helped teach Hack City how to use Android Studio.

This support included helping developing programmers understand the software environment used for FTC Java development.

Teaching another team required more than knowing which buttons to press. Sammy needed to explain:

- Project organization

- Robot configuration

- OpModes

- Building and deploying code

- Reading errors

- Debugging

- Safe testing

In-Pit Support for A.S.T.R.O. VikingsAt the Albuquerque competition, Asa helped A.S.T.R.O. Vikings resolve pit problems.

He provided guidance on:

- Wire routing

- Stable electrical organization

- Servo support structures

- Mechanical reliability

- Competition troubleshooting

Pit assistance demonstrated Gracious Professionalism in a practical way. Helping another team return to the field strengthened the event without reducing Mechanical Error's own competitive effort.

Event Cleanup and ServiceAsa also stayed to assist La Academia de Esperanza with cleanup after the Albuquerque event.

Mechanical Error was among the last teams helping return equipment and materials to their proper locations and owners.

This kind of service is easy to overlook because it does not happen during matches or award ceremonies.

However, events depend on teams that are willing to remain after competition and help restore the venue. Sharing ENIGMA's Outreach Network As part of the larger ENIGMA program, Mechanical Error's students gained access to outreach opportunities, mentors, teams, tools, and events that might have been difficult for a new team to establish alone.

The goal was not for Mechanical Error to remain dependent on ENIGMA indefinitely. It was for students to learn within a strong support network and gradually become capable of mentoring others.

Outreach as Skill Development Each outreach experience strengthened the Mechanical Error students as well.

Teaching code clarified the programmers' own understanding.

Helping with wiring required students to explain good electrical practices.

Assisting in another pit exposed students to designs and failures different from their own.

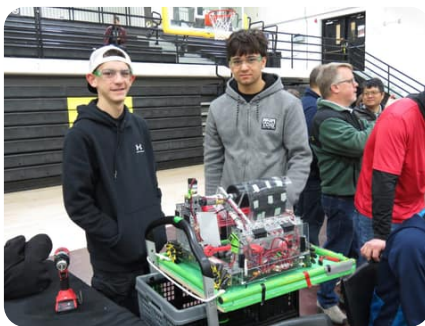
Setting up a field reinforced game knowledge.

Cleaning up after competition taught responsibility and respect for hosts and volunteers.

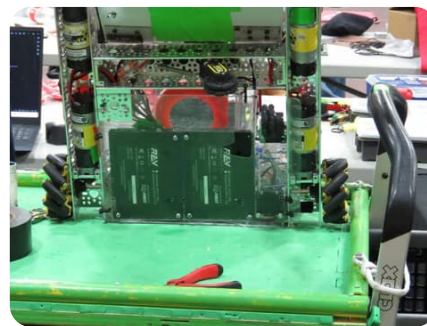
Season highlights



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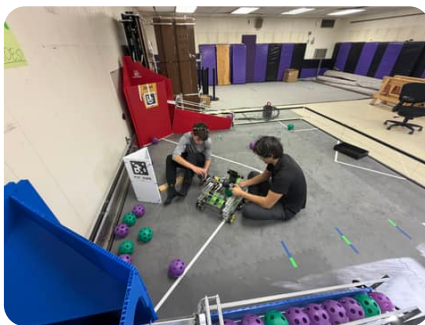
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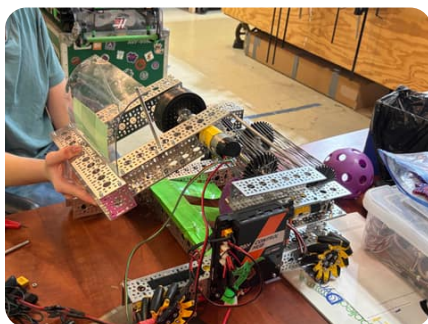
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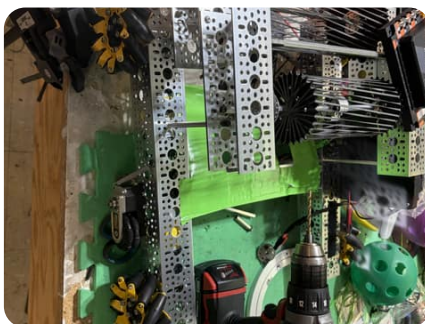
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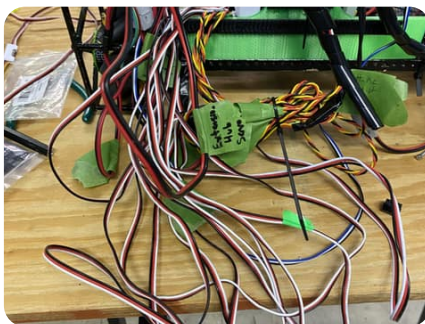
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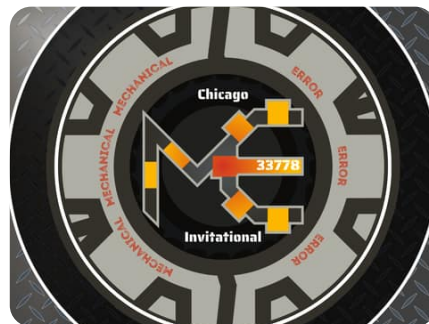
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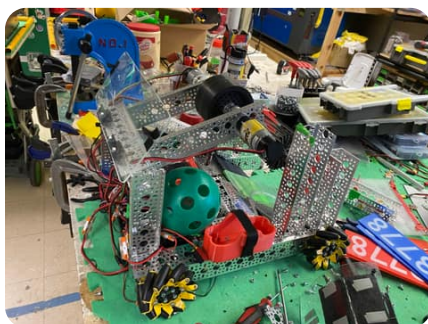
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