

# RAMAGEDDON 4855

Team Safety Manual





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# General Safety

## Around the Robot

While you're around the robot, make sure to take all precautions. Make sure to be wearing safety glasses while near the robot. Keep long hair and baggy clothing clear of all moving parts on the robot. Wear closed-toe shoes while near the robot. Stay clear of the general radius of the robot while it is in movement. Be cautious when multiple people are working on the robot.

## Handling Batteries

While grabbing and transporting batteries doesn't seem like a dangerous task, there are still many things that could go wrong while completing this task. Always have two hands on the battery while holding, moving, or setting down the battery. Keep batteries clear from food and drink. Make sure to keep batteries clear from the edges of tables, desks, and benches to prevent the battery from falling. If a battery breaks and acid pours out, immediately pour baking soda on acid. If battery acid comes in contact with skin, run skin under a water faucet for a long period of time, as well as seek medical treatment immediately after.

## Clothing

Clothing can go from stylish to a hazard in the workspace in a snap. Be sure to avoid wearing baggy clothing when working on any project. If it is too late to wear appropriate work clothes, tying off or rolling up loose clothing is advised. The type of shoe that you wear is also important. Wearing closed-toe shoes, especially when handling heavy objects, is very beneficial in keeping your feet intact.

## Hair

Unless you want your hair to be ruined, be cautious with your hair when in the workspace. Keep your hair clear from any moving parts to prevent hair damage, and potentially head damage. Long hair is very susceptible to getting caught in machines and power tools. Keep hair tied back to avoid injury. Hair ties and bobby pins are advised.

## Reporting Injuries

If you sustain any type of injury, no matter how minor the injury, please report it to the Safety Captain immediately. Together with the Safety Captain, you will complete an injury report form. The Safety Captain will enter the incident in the Injury Report Log which is located in the team's shared drive.

The Safety Captain will provide an update on our safety status at the daily huddle. The update will include how many days it has been since our last injury. If there was a recent injury, the nature of the injury will be shared (but not the name of the injured person) and corrective actions if needed. The point of reporting injuries at huddle is not to embarrass anyone; rather, to learn from these instances and prevent future injuries.

# Safety in the Buildroom

## Safety Equipment

Safety Equipment is a necessity in the build area. It can help control problems that could occur while working in the build space. Examples of this safety equipment includes safety glasses, cut-resistant gloves, and fire extinguishers. Using this equipment in the build room is advised.

## Tools

Power tools are extremely useful for speeding up tasks, but can result in disasters. Be sure to keep cords away from walking paths to prevent tripping. Unplug power tools and put away mobile power tools after use. This will help create a safer work environment.

When using a tool, work on a bench or hard surface not in the palm of your hand. When using knives or blades, cut away from your hands and body.

## Clean Up

Keeping your workspace clean is extremely important. It prevents many different types of hazards and accidents from occurring. Always put away tools after using them. If something spills or breaks, deal with it immediately, not after you finish the project you are working on.

## Food and Drink

Having food or drink in the buildroom is extremely dangerous. It can make the workspace dirty and lead to injury. Liquids could spill and short-circuit any electronics in the area. It is much better idea to leave food and drinks in a designated area outside of the build room.

## Emergencies

Emergencies can range from cutting your finger to cutting off your arm. With any incident of harming one's self or another, immediately report it to the Safety Captain and he/she will assist in helping. If the injury is bad enough, call 911, or have someone else call 911 if you are unable to.

# Safety at Competitions

## Organization

Keeping all of the items in the pit organized is critically important. There is a lot of important work to be done in this space and a loose item could break up the flow. Other than being an inconvenience, an out of place object could cause an injury if left out on a place like a table or the floor.

## Flow of Traffic

Because there is limited space in the pits, only five (5) people are allowed in there at a time. Too many people present clogs up the traffic and increases the chance of injury.

## Electronics

Electronics must be taken care of in the proper way. If conducted incorrectly, the electronics could break or cause an injury. When using electronics be sure to never plug a power strip into another power strip because this can cause overloading and can lead to a fire. To avoid overloading: Extension cords should never be plugged into another extension cord. Also, extension cords should never be plugged into a power strip. Vice versa a power strip should never be plugged into an extension cord.

Keep the battery-charging area clean and orderly is very important. Place the battery cart in an area where the air can circulate around the battery charger. When charging the batteries do not exceed the maximum charging rate.

## Necessary Safety Materials

1. A box of sodium bicarbonate (baking soda) to neutralize any exposed acid electrolyte.
2. A pair of acid-resistant rubber or plastic leak-proof gloves to wear when handling a leaking battery.
3. A suitable non-metallic leak-proof container in which to place the defective battery.

\*Power tool, clothing and hair safety are all still expected in the pit

## The Stands

### Behavior in the stands

1. All bottles should have caps on them, no open food or beverages are allowed unless you are actively consuming these products
2. No running up or down stairs
3. Keep your belongings confined to your own personal space (condense as much as possible)
4. Be a role model of good sportsmanship, no booing for other teams
5. Avoid excessive movement such as dancing (dancing is encouraged, but please only dance on the main floor), and constantly switching seats or moving back and forth
6. Be aware of your surroundings, the stands are tight quarters and it is easy to cause an accident if you are not paying attention
7. Stay within your own space
8. Always cheer for Ramaggedon and show pride for our allies, whether we win or lose



# Safety in Transportation

## Securing Equipment

When putting anything into the team's trailer, or any vehicle, be sure to secure any equipment to the sides of the vehicle with bungee cords. When transporting our robot or any other equipment it is extremely important that these items are safely secured. This will prevent any unintentional harm to the robot and equipment.

## Safe Driving

When going to competitions, ONLY ADULTS are allowed to drive you and other team members to any competition or event. Even if you are a legal student driver, this is a school club, which means we are to follow any school rules. When arriving at competitions we arrive together as a team. Please see our coaches if you are not able to. When going to Worlds or State, we may take a bus to transport us to and from the hotel and venue. Please remember to have inside voices, and use gracious professionalism.

# Safety in Competition

## Gracious Professionalism

When matches are happening you need to be sitting down and not causing distractions to the teams on the field. We respect every team and never make negative comments even if we lose. The judges are always watching at competitions so make sure you are always representing the team in a positive manner.

## Cart Maneuvering

Always follow the flow of traffic when maneuvering the carts from the pits to the competition field. Generally there are arrows marked on the floor to show which way you should be going. There is designated cart parking on the field during matches which is where our cart needs to be unless we are taking the robot on or off the field.

## Respecting Other Robots

Robots have the right of way at competitions! If you are in the pits there will frequently be robots going to and from the competition field so make sure you're not getting in the way. During matches we never want to intentionally damage another robot, this could lead to us receiving penalties.

## In the Stands

Do not leave items in the stands that could become a tripping hazard to others. Walk when entering or exiting the stands in order to avoid injury. If you want to participate in dancing (which we encourage) do so at the bottom of the stands.

## The Field

The field is where the robots take their stand to win the competition. Only certain players (i.e. Drivers) are permitted on the field at designated times. This causes less chance of problems and injury for everyone, as well as prevented penalties.

## Buddy System

The buddy system is where at any large event, you have a designated partner that you stay with, to prevent anyone from getting lost. This is an effective system that is commonly used.



## 6 SAFETY RULES

Safety is paramount at all times, and each rule below is intended to establish norms at each event that will mitigate injury risk to all participants.

Event staff have the final decision authority for all safety-related issues within a venue.

Veterans of the *FIRST*<sup>®</sup> Robotics Competition may notice the absence of some long-standing rules from this section, e.g. the requirements for safety glasses, closed-toed shoes, and limitations on the wireless use of ROBOTS. These rules remain enforced for the 2019 DESTINATION: DEEP SPACE Presented By The Boeing Company season, but live with other event rules on the [FIRST Robotics Competition Event Experience web page](#) because they are not specific to the game or limited to MATCH play. As with all violations in this document, any of the Event Experience rules also carry the consequence of a YELLOW or RED CARD.

**S1. Dangerous ROBOTS: not allowed.** ROBOTS whose operation or design is dangerous or unsafe are not permitted.

*Violation: If before the MATCH, the offending ROBOT will not be allowed to participate in the MATCH. If during the MATCH, the offending ROBOT will be DISABLED.*

Examples include, but are not limited to:

- Uncontrolled motion that cannot be stopped by the DRIVE TEAM
- ROBOT parts “flailing” outside of the FIELD
- ROBOTS dragging their battery
- ROBOTS that consistently extend beyond the FIELD

**S2. Wait for the green lights.** Team members may only enter the FIELD if the ROCKET'S nosecone LEDs are green, unless explicitly instructed by a REFEREE or an FTA.

*Violation: Verbal warning. If repeated at any point during the event, YELLOW CARD. If egregious, RED CARD.*

**S3. Never step/jump over the guardrail.** Team members may only enter or exit the FIELD through open gates.

*Violation: Verbal warning. If repeated at any point during the event, YELLOW CARD. If egregious, RED CARD.*

Teams are encouraged to ensure that all members of their DRIVE TEAM are aware of this rule. It's easy to violate, particularly when teams are doing their best to move on and off the FIELD quickly. The violations of S3 are intended to avoid nuisance penalties, but still enforce safety requirements around the FIELD. There is the potential for injury when stepping over the guardrail.

Violations of S3 apply to the entire team, not specifically to any one individual. For example, a member of team 9999 steps over the guardrail prior to MATCH 3, and a different member steps over the guardrail prior to MATCH 25. The team receives a verbal warning for the first violation and a YELLOW CARD for the second. Jumping over the guardrail is considered an egregious violation of S3.

**S4. Humans, stay off the FIELD during the MATCH.** DRIVE TEAMS may not extend any body part into the FIELD during the MATCH.

*Violation: YELLOW CARD*

Examples of egregious violations that are likely to escalate the Violation to a RED CARD include, but are not limited to, walking onto the FIELD during a MATCH or reaching into the FIELD and grabbing a ROBOT during a MATCH.

**S5. ROBOTS, stay on the FIELD during the MATCH.** ROBOTS and anything they control, e.g. a GAME PIECE, may not contact anything outside the FIELD with the exception of brief incursions inside the CARGO Chute.

*Violation: Offending ROBOT will be DISABLED.*

Please be conscious of REFEREES and FIELD STAFF working around the ARENA who may be in close proximity to your ROBOT.

**S6. Stay out of the Chutes.** DRIVE TEAMS may not extend any body part into the CARGO Chute. Momentary encroachment into the Chute is an exception to this rule.

*Violation: FOUL.*