SPARC Match Rules v1.2

If an event chooses to use non-standard rules they will make the alterations clear and publicly available prior to the event.

Bot Load In and Activation:

In arenas where robot power up is possible with the driver not standing on the combat area preference will be given to that method.

- The combat area is defined as the region of the arena where active combat occurs. This would exclude gutters between whatever internal barricade exists in the arena and the arena walls.

Priority for load in is as follows:

- Least dangerous bot being activated by someone inside the combat area
- Most dangerous bot being activated by someone inside the combat area
- Least dangerous bot being activated by someone outside the combat area
- Most dangerous bot being activated by someone outside the combat area

The process for activating a robot is as follows:

- Robot is placed in a stable position on the combat area with the drive wheels oriented such that when they come in contact with the combat area the direction of travel will be away from other robots, persons, and entry doors. If the robot has a weapon that is aimable it will be aimed at the wall furthest from the arena entry door.
- Weapon covers are removed.
- Transmitter is turned on.
- Main power is turned on.
- If separate, weapon power is turned on. This applies to both a separate power loop and non-electrical power systems. (ie. pneumatics)
- Weapon locks are removed.
- If the robot is being activated by a person inside the combat area, they then exit the arena, otherwise the robot is driven to the starting square from their power on location.
- No movement or functional testing is permitted while the arena door is open.

Once both robots are activated and in their starting squares a brief weapon/drive system test will be allowed if the drivers desire. A separate testing box will be provided for this purpose.

After this, the referee will ask both drivers if they are ready and the fight will begin.

Post Fight Activities:

At the end of the fight both robots are to cease movement and if applicable, allow their weapon systems to de-energize. Once the weapon systems have been de-energized the judges may request that one or both robots demonstrate that either their drive or weapon system is still functional.

- Demonstration of drive system functionality will be done by the robot returning to its starting location.
- Demonstration of weapon system functionality will be done by the robot returning to its starting location and briefly applying power to the weapon system to show that it is still operational. The robot will not spin to full speed during this demonstration.

Once this is completed the robot deactivation and load out procedure can begin.

Bot Deactivation and Load Out:

In arenas where robot power down is possible with the driver not standing on the combat area preference will be given to that method. In the event of an unexpected situation the order in which robots are powered down may be altered by the referee.

- The combat area is defined as the region of the arena where active combat occurs. This would exclude gutters between whatever internal barricade exists in the arena and the arena walls.

Priority for load out is as follows:

- Most dangerous bot being deactivated by someone outside the combat area
- Least dangerous bot being deactivated down by someone outside the combat area
- Most dangerous bot being deactivated down by someone inside the combat area
- Least dangerous bot being deactivated down by someone inside the combat area

The process for deactivating a robot is as follows:

- Weapon system is disabled. This includes any applicable weapon locks, power cutoff and venting. The exact order of this procedure will be left to the discretion of the builder as differing designs may necessitate different safe shutdown procedures, which will need to be printed and approved at safety inspection.
- Main power is turned off.
- Transmitter is turned off.
- Weapon covers are reinstalled.
- If the robot is able to be removed from the arena without a cart/assistance it may be removed at this time, otherwise robots will be removed from the arena once all robots have had their weapon locks installed and are powered down.

Emergency Deactivation Procedure:

In the event of an emergency (for example: one or more robots on fire) the standard procedure does not apply. The following attempts to address the vast majority of possible situations that are likely to occur:

- One robot is burning and the other is mobile

    - The mobile robot is to move to the wall furthest from the arena entry door and align its drive wheels parallel with the wall. If the robot has an active weapon it is to immediately begin dissipating stored energy (spinning down, release for spring actuated weapons, etc) and if possible, bring it next to or into contact with the wall it is aimed at.
    - Once the working robot is in position the arena marshall will enter the arena and extinguish the fire, then if possible, remove the robot from the arena.
    - The operator of the non-burning robot may then proceed with normal load out procedures.
- One robot is burning and the other is immobile
    - If the immobile robot has an active weapon it is to immediately begin dissipating stored energy. (spinning down, release for spring actuated weapons, etc) If the robot retains some degree of mobility but cannot move in a reliable manner it will attempt to angle itself such that any weapons that are aimable are aimed away from the arena entry door.
    - Once the arena is able to be entered safely the arena marshall will enter the arena and extinguish the fire, then if possible, remove the robot from the arena.
    - The operator of the non-burning robot may then proceed with normal load out procedures.
- Both robots are burning
    - Both robots will, if applicable, immediately attempt to dissipate any stored energy systems and will attempt no other actions.
    - Once the arena is able to be entered safely the arena marshall will enter the arena and extinguish the fire, then if possible, remove both robots from the arena.
- One or more robots are burning during a rumble
    - All mobile, non-burning robots will move to the closest arena wall that is not used to access the arena and begin dissipating stored energy.
    - All immobile robots will immediately begin dissipating stored energy and will perform no other actions unless they are able to rotate such that they are able to angle any aimable weapon systems ~~at the wall furthest~~ away from the arena entry door.
    - Once the arena is able to be entered safely the arena marshall will enter the arena and extinguish the fire, then if possible, remove the robot from the arena.
    - If there is time left, the match will be allowed to resume.
- One or more robots are acting erratically/stuck on
    - The operator(s) of the robot(s) will turn off their transmitters to attempt to activate the robot's failsafe.
        - If this works, then normal load out procedures will resume.
    - In the event that the robot(s) are still acting erratically the robots will be allowed to drain their batteries until they are safe to approach.
    - Should a robot in the arena still be fully functional, no weapon system be active on the malfunctioning robot and all involved operators agree to it the operator of the still working robot may attempt to pin and prop up the

malfunctioning robot such that its wheels are no longer in contact with the ground. The operator of the malfunctioning robot will then be allowed to power off their robot. Once powered off they will exit the arena and the robot that was pinning the malfunctioning robot will be allowed to go through normal load out procedures. The malfunctioning robot will then complete its load out procedures

Emergency Match Stoppage Procedure:

In the event of an arena breach, damage to the arena that renders it unsafe, or any other event that is otherwise judged a safety risk by event staff the match shall immediately be halted. For sufficiently large or loud arenas there should be a system in place to allow any event official to quickly act to stop the fight either by triggering a notification system or having direct communication with an official that won't be impacted by distance or arena noise.

It is strongly encouraged that there is both an audible (alarm, buzzer, air horn, or similar) and visual (arena lights off, flashing red lights, a deployed curtain, or similar) indication that the fight has been stopped to ensure that competitors are aware of the issue immediately. It is the responsibility of the team to ensure that the driver or another team member is watching and/or listening for these indicators.

If a competitor continues to fight after the referee has called for the fight to be stopped they will forfeit the match. Repeated infractions will result in removal from the tournament. It is the responsibility of the driver to ensure that they respond promptly to the call to stop fighting.

Once fighting has ceased the robots will be deactivated. The deactivated robots may be left in place or moved to a safe location in or around the arena until a determination about the status of the fight is made. No work may be done on the bots during this time. The source of the safety issue will then be inspected to determine the appropriate action. Once the issue has been resolved a determination will be made as to whether or not the fight will resume. If possible, the fight will resume from the point where it was paused. If resuming the fight is determined to not be possible due to a safety concern or other issue the fight will be judged up until the point where it was stopped.

The safety of the crowd, competitors, and crew must always be considered when determining if any additional measures need to be taken beyond resolving the immediate safety issue.

Match Formats:

- Round Robin (Will be used for preliminary rounds)
    - Each robot faces each other robot in the preliminary group a single time. The robot with the greatest number of wins is declared the winner. In the event of a tie, the winner of the match between the two robots is declared the winner.

Should more than two bots tie for the win the winner will be determined with a judged rumble.
    - If there are more than 32 teams signed up for a weight class (maximum of 64 teams total between the two weight classes), 16 preliminary groups will be formed with 4 or fewer robots in each. If 32 or less teams but more than 16 teams sign up, 8 preliminary groups will be formed with 4 or fewer robots in each. If 16 or fewer teams sign up in a bracket, we'll have a single elimination bracket
- Single Elimination (Will be used for final 16 or 8 depending on signups)
- An optional 5-minute open rumble will be held after the final match if time allows.

Match Frequency:

Robots will be given a minimum of 20 minutes between matches unless all bots in the given fight indicate to referees that they are ready to fight before that time. For first matches and matches that occur more 20 minutes after a previous match for a team, the team must be on deck by the arena at the start of the match prior to their own or risk forfeiting the match.

Match Duration:

The standard match duration for 150g-6lb robots is 3 minutes. The standard match duration for a rumble in any weight class is 5 minutes.

Un-sticks:

Matches will be paused to separate robots in the event that they become stuck together in the arena. Robots that become stuck together will be allowed 10 seconds to attempt to separate. If they are not able to do so an un-stick will be called for by the referee. An unstick can only be called for by the drivers or referee and the referee has the final say on whether or not the un-stick will be granted based upon the event's un-stick rules. No modifications or repairs are allowed during an unstick.

Knock-outs:

When a robot has ceased moving in a controlled manner but has not tapped out the referee will begin a 10 second countdown. If the robot is unable to demonstrate controlled translational movement before the countdown ends it will be declared the loser by KO. If during this time the robot is able to show controlled translational movement, the match timer ends, or if the opposing robot attacks it the countdown will cease. This means that a "dead" robot will not be counted out should the opposing robot continue to attack and the match will not end until the match timer expires or one robot taps out.

A bot with one side of its drivetrain disabled will not be counted out if it can demonstrate controlled translational movement. Controlled translational movement is defined as being able to traverse in a manner such that the net movements of the robot are in a linear direction.

In the case of multi-bots, the countdown will begin when greater than 75% of the mass of the multi-bot is unable to move. For multi-bots with an even number of robots (2, 4, etc…) and equal weights for each portion the team will identify which are considered to be the heaviest.

In the event of a simultaneous knock-out both robots will be allowed an attempt to demonstrate controlled movement. If both robots are able to function the match will resume. If one robot is able to function that robot will be declared the winner. If neither robot is able to function the match will go to the judges.

Should the battery of a robot become exposed the match will be halted and the robot with the exposed battery will lose by TKO.

Pinning/Lifting:

Any robot pinning or lifting their opponent may only continue to pin or lift them for 10 seconds at a time. After 10 seconds has elapsed the robot in control must release the opposing robot. If the robot in control is not able to release the opposing robot then the match will be halted and the robots will be separated.

- "Release" is defined as complete physical separation such that both robots are able to freely move away from their current location for a minimum of 15 seconds.
- Refusal to comply with the referee's request to release the opponent when the robots are not stuck together will result in forfeit of the match.

Tapping Out:

At any time during a match the robot operator may choose to tap out. Once an operator has tapped out combat will cease and the opposing robot will be declared the winner.

- Tapping out is done by informing the referee that you are tapping out verbally.