Section 7

THE GAME

FRC FIRST Robotics Competition

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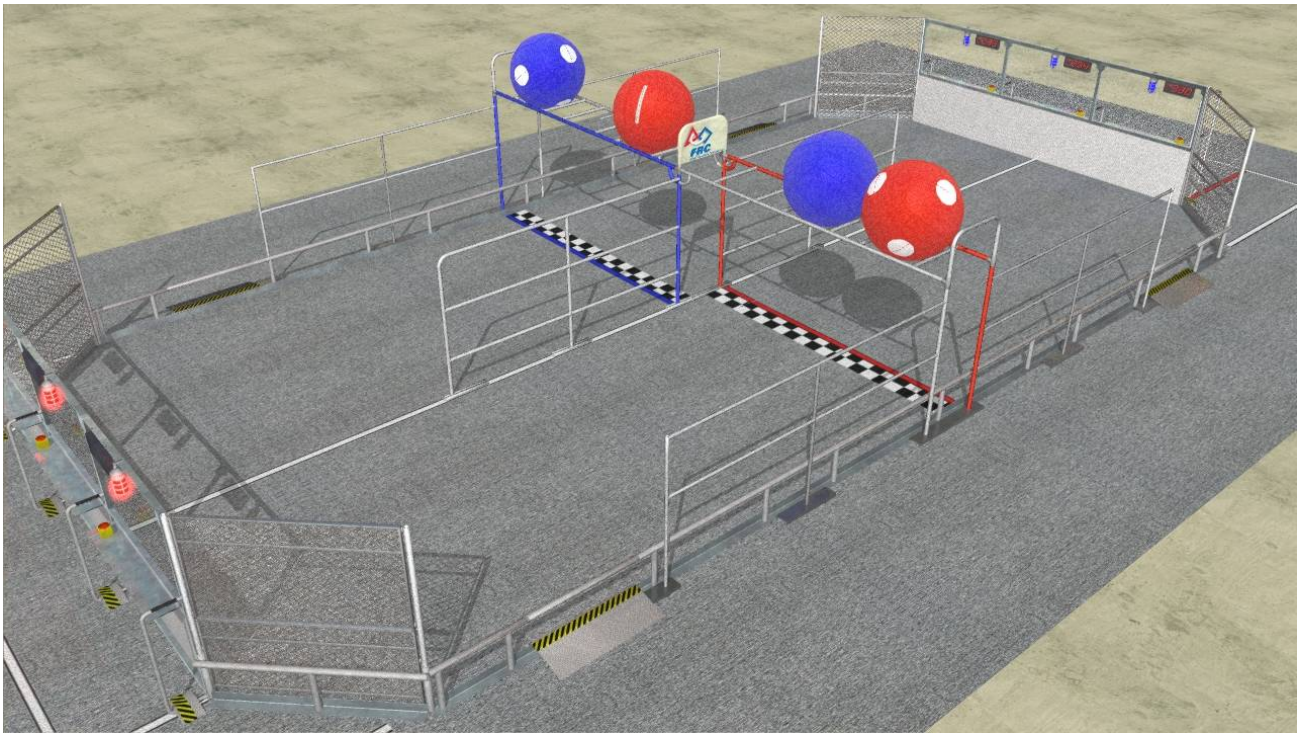
7 THE GAME

7.1 GAME OVERVIEW

FIRST Overdrive is a game played on the TRACK (illustrated in the figure below). Two ALLIANCES, one red and one blue, composed of three teams each, compete in each MATCH. The object of the game is to attain a higher score than your opponent by making counter-clockwise laps with your robot around the TRACK while moving large TRACKBALLS over and/or under the OVERPASS that bisects the TRACK. The point values for each of those actions are explained below.



Note: The illustrations in this section of the manual are for a general visual understanding of the FIRST Overdrive arena only. Please refer to the official drawings for exact dimensions and construction details.

7.1.1 Match Format

A MATCH is 2 minutes and 15 seconds long. A HYBRID PERIOD starts each MATCH in which the ROBOTS are controlled by pre-programmed instructions and/or transmitted information from the ROBOCOACH. The HYBRID PERIOD is followed by the TELEOPERATED PERIOD during which the DRIVERS assume control of the robot. There may be a short pause between HYBRID PERIOD and the start of the TELEOPERATED PERIOD as the player's controls are activated. The ROBOTS continue to play the game until the TELEOPERATED PERIOD is over.

7.2 DEFINITIONS

ALLIANCE: A set of three *FIRST* Robotics Competition TEAMS that work together during a MATCH to play *FIRST* Overdrive against an opposing ALLIANCE. ALLIANCES are identified during the MATCH by their assigned color, either red or blue.

BUMPER ZONE: The volume between two planes parallel to the floor, the lower being 2-1/2 inches above the floor, and the upper being 8-1/2 inches above the floor. The BUMPER ZONE is defined with respect to the ROBOT when in its PLAYING CONFIGURATION.

CROSSING: The act of a TRCKBALL or ROBOT passing through the plane defined by a line (i.e. LANE MARKER or FINISH LINE) when it is projected vertically upwards. A TRACKBALL or ROBOT shall have CROSSED a line when all parts of the object, while traveling in a counter-clockwise direction, have completely passed through the plane.

HERDING: Controlling the position and movement of a TRACKBALL while the TRACKBALL is not supported by any ROBOT (i.e. supported by the TRACK or other TRACKBALLS) shall be considered HERDING. Both continuous and intermittent contact between the ROBOT and TRACKBALL are permissible methods of HERDING. E.g. bumping, plowing or dribbling a TRACKBALL around the TRACK are all considered forms of HERDING.

HURDLE: When a TRACKBALL CROSSES a FINISH LINE while passing above the OVERPASS and then contacts either the floor or another ROBOT before re-contacting the originating ROBOT.

HURDLING: The act of completing a HURDLE. To be considered in the process of HURDLING, the ROBOT must:

- be in its own HOME STRETCH, and
- be in POSSESSION of a TRACKBALL, and
- be moving toward the OVERPASS and/or elevating the TRACKBALL so that the top of the TRACKBALL is higher than the LANE DIVIDER.

IMPEDING: Preventing or obstructing an opposing ROBOT'S ability to proceed around the TRACK in the direction of traffic.

MATCH: A single iteration of play in which ALLIANCES attempt to complete the goals of the *FIRST* Overdrive game during a competition.

PENALTY: A 10-point decrement in the ALLIANCE score assigned when a deserving violation of the game rules has been identified by a REFEREE.

POSSESSION: Controlling the position and movement of a TRACKBALL while the TRACKBALL is supported or captured by an ALLIANCE shall be considered POSSESSION of the TRACKBALL. A TRACKBALL shall be considered "supported" by a ROBOT if in the estimation of a reasonably astute observer the majority of the weight of the TRACKBALL is being borne by the ROBOT. A TRACKBALL shall be considered "captured" by a ROBOT if, as the ROBOT moves or changes orientation (e.g. backs up *or* spins in place), the TRACKBALL remains in approximately the same position relative to the ROBOT. Both the "supported" and "captured" conditions include the case where the TRACKBALL is also in contact with the floor.

REFEREES: The certified volunteers led by the Head Referee, responsible for assisting teams, monitoring game play, and enforcing the *FIRST* Overdrive rules.

ROBOT: Anything that has passed ROBOT inspection that a TEAM places on the TRACK prior to the start of a MATCH.

SIGNALING DEVICE: Any equipment used by a ROBOCOACH to provide external stimuli to the ROBOT.

TEAM: Four representatives from a registered *FIRST* Robotics Competition team that interact with their robot and their ALLIANCE partners to play *FIRST* Overdrive. The positions on the TEAM include:

COACH: A student or adult mentor designated as the team advisor during the MATCH and identified as the person wearing a "COACH" pin or button. There is one COACH per TEAM.

DRIVER: A pre-college student team member responsible for operating and controlling the ROBOT. There are two DRIVERS per TEAM.

ROBOCOACH: A pre-college student team member designated as the only team member permitted to provide external stimuli to the ROBOT from either of the two ALLIANCE ROBOCOACH STATIONS. There is one ROBOCOACH per TEAM.:

7.3 RULES

7.3.1 Safety

<S01> If at any time a ROBOT'S operation or design is deemed unsafe, it will receive a PENALTY and be disabled for the remainder of the MATCH. If the safety violation is due to the ROBOT design, the Head Referee has the option to not allow the ROBOT back onto the TRACK until the design has been corrected. An example of unsafe operation would be uncontrolled motion that cannot be stopped by the drivers.

<S02> ROBOCOACHES, DRIVERS, and COACHES may not directly contact any ROBOT at any time during the MATCH. Illegal contact will result in the TEAM being disqualified.

<S03> E-Stop - An Emergency Stop (E-Stop) button is located in each TEAM'S Player Station. Pressing an E-Stop button will cause the TEAM'S ROBOT to be disabled for the remainder of the MATCH. The E-Stop buttons are intended for remote shut down during a MATCH in the event of safety hazards and will not otherwise affect MATCH score or duration. Any TEAM member may press the E-Stop button.

7.3.2 Game Periods

<G01> HYBRID PERIOD - The HYBRID PERIOD is the 15-second period at the start of the MATCH. Driver control of the ROBOT is not permitted at this time. During this period, the ROBOTS may react only to sensor inputs and commands programmed into the onboard control system. The only external signals that may be received by the ROBOT are those sent from ALLIANCE ROBOCOACHES. No external signals are permitted from any other source. The ROBOT may react to no more than four distinct external commands provided by the ROBOCOACH. All ROBOT safety rules are still applicable during the HYBRID PERIOD. The HYBRID PERIOD ends when the arena timer displays zero seconds left in the period.

<G02> TELEOPERATED PERIOD – The TELEOPERATED PERIOD is the 2-minute period of game play immediately following the HYBRID PERIOD. At the beginning of the TELEOPERATED PERIOD the OPERATOR CONSOLE controls are activated and DRIVERS may remotely control their ROBOTS. The DRIVERS continue to teleoperate their ROBOTS for the remainder of the MATCH. ROBOCOACHES may continue to signal the ROBOT. The TELEOPERATED PERIOD ends when the arena timer displays zero seconds. This also indicates the end of the MATCH.

7.3.3 Scoring

7.3.3.1 ROBOT scoring

<G03> All ROBOT scores are awarded to the ALLIANCE associated with the scoring ROBOT.

<G04> During the HYBRID PERIOD, a ROBOT will earn 4 points each time it CROSSES either FINISH LINE.

<G05> During the HYBRID PERIOD, a ROBOT will earn 4 points each time it CROSSES either LANE MARKER.

<G06> During the TELEOPERATED PERIOD, a ROBOT will earn 2 points each time it CROSSES its FINISH LINE.

<G07> A ROBOT that has CROSSED its own FINISH LINE must CROSS the opponent's FINISH LINE before it can score by CROSSING its own FINISH LINE again.

7.3.3.2 TRACKBALL scoring

<G08> All TRACKBALL scores are awarded to the ALLIANCE associated with the scored TRACKBALL, independent of the ROBOT that may have caused the scoring action to occur.

<G09> During the HYBRID PERIOD, each TRACKBALL that is removed from the OVERPASS (i.e. completely removed from its initial TARGET LOCATION and not in contact with any portions of the OVERPASS) at the end of the HYBRID PERIOD will earn 8 points.

<G10> Each TRACKBALL that has CROSSED its own FINISH LINE while not in contact with a ROBOT of the same ALLIANCE will earn 2 points. A TRACKBALL that has CROSSED its own FINISH LINE which contacts ROBOTS of both ALLIANCES while CROSSING will earn 2 points.

<G11> Each TRACKBALL that HURDLES its own FINISH LINE will earn 8 points (2 points for CROSSING the FINISH LINE and a 6 point bonus, yielding 8 points total).

<G12> A TRACKBALL must CROSS a LANE MARKER before it can score for the first time by HURDLING or CROSSING its FINISH LINE.

<G13> A TRACKBALL that has CROSSED its own FINISH LINE must CROSS the opponent's FINISH LINE before it can score by CROSSING its own FINISH LINE again.

<G14> When the MATCH ends, each TRACKBALL is at least partially supported by the OVERPASS and not in contact with any ROBOT of the same ALLIANCE will earn a 12 point bonus.

Scoring opportunities and point values are summarized in the table below:

		HYBRID PERIOD	TELEOPERATED PERIOD
Each ROBOT:	CROSSES LANE MARKER	4 points	0 points
	CROSSES opponent FINISH LINE	4 points	0 points
	CROSSES ALLIANCE FINISH LINE	4 points	2 points
Each TRACKBALL:	Removed from OVERPASS	8 points	0 points
	CROSSES ALLIANCE FINISH LINE under OVERPASS	2 points	2 points
	HURDLES ALLIANCE OVERPASS	8 points	8 points
	On OVERPASS at end of MATCH	n/a	12 points

7.3.4 Game Play

7.3.4.1 Starting Conditions

<G15> ROBOT Starting Positions – Prior to the MATCH, the three alliance ROBOTS must be placed entirely inside their HOME STRETCH, touching their Alliance Station Wall or the angled fence in front of their local ROBOCOACH STATION, and not contacting any other ROBOTS.

<G16> ROBOT Alignment Devices - Alignment devices (templates, tape measures, laser pointers, etc.) that are not part of the ROBOT may not be used to assist with positioning the ROBOT. TEAMS that use external alignment devices to position their ROBOT will have their ROBOT arbitrarily repositioned before the start of the MATCH.

<G17> ROBOT Starting Size - At the beginning of a MATCH, each ROBOT must not exceed the maximum weight or volume specified in Rule <R11>. The Head Referee may call for an inspector's recertification of the ROBOT size and weight prior to the start of any MATCH. ROBOTS in violation will be prohibited from participating in the MATCH.

<G18> ROBOT Orientation - ROBOTS must start the MATCH with their long (maximum) dimension in a vertical orientation. After the start of the MATCH, ROBOTS may change their orientation such that the long dimension is either vertical or horizontal. Refer to Rule <R08> and Rule <R17> to determine how this affects the use of STANDARD BUMPERS and FLAGS.

<G19> LAP INDICATOR Use - The provided LAP INDICATOR must be placed on the ROBOT as specified in Rule <R18>, and connected to a power source. The correct operation of the LAP INDICATOR will be verified prior to the start of the MATCH.

<G20> TRACKBALL Locations - After all ROBOTS participating in the MATCH are in their starting positions and the TEAM members are in the ALLIANCE ZONE and/or ROBOCOACH STATIONS, four TRACKBALLS will be placed on the OVERPASS. On each side of the OVERPASS there are three TARGET LOCATIONS for TRACKBALLS. The field management system will randomly choose an initial starting location for the TRACKBALLS before the start of each MATCH. One red and one blue TRACKBALL will then be positioned in the chosen TARGET LOCATIONS on each side of the OVERPASS. After this point in time no ROBOT may be moved or repositioned until the MATCH starts.

<G21> Field Equipment - Other than the TRACKBALLS and competing ROBOTS, no other items shall be placed on the TRACK or OVERPASS prior to, or during, the MATCH.

7.3.4.2 Match Play

<G22> Direction Of Traffic – ROBOTS must proceed around the TRACK in a counter-clockwise direction. Once a ROBOT has CROSSED a LANE MARKER or FINISH LINE, it shall not break the plane of the line by moving in the clockwise direction. A PENALTY will be assigned for each infraction.

<G23> Causing PENALTIES - A ROBOT's action shall not cause an opposing ROBOT to break a rule and thus incur penalties. Any rule violations committed by the affected ROBOT shall be excused, and no penalties will be assigned. For example, an opposing ROBOT may not be pushed into another ROBOT in an attempt to cause a IMPEDING situation and violation of Rule <G40> by the opponent, nor may a TRACKBALL be placed intentionally on an opposing ROBOT for the purpose of causing the opponent to violate Rule <G26>.

<G24> ALLIANCE PENALTIES - Unless otherwise noted, all PENALTIES assigned by REFEREES are applied to the entire ALLIANCE.

<G25> Minimum Scores - The minimum score is 0 (zero) points. Even after adjustment for PENALTIES, there are no "negative scores."

7.3.4.3 TRACKBALL Handling

<G26> TRACKBALL POSSESSION - ROBOTS may only have 1 (one) TRACKBALL in their POSSESSION at any time during the MATCH. A PENALTY will be assigned for each infraction.

<G27> HERDING TRACKBALLS – ROBOTS may HERD one or more TRACKBALL at one time. ROBOTS shall not HERD a TRACKBALL while also being in POSSESSION of a second TRACKBALL. A PENALTY will be assigned for each infraction.

<G28> Bulldozing TRACKBALLS - Inadvertent bulldozing of TRACKBALLS while the ROBOT moves around the TRACK is allowed whether or not the ROBOT is in POSSESSION of, or HERDING, a TRACKBALL.

<G29> POSSESSING Opponent's TRACKBALLS - ROBOTS may not be in the POSSESSION of a TRACKBALL belonging to an opposing ALLIANCE. A PENALTY will be assigned for each violation. HERDING of an opponent's TRACKBALL and removing an opponent's TRACKBALL from the OVERPASS is permitted.

<G30> TRACKBALL Out of Bounds - TRACKBALLS that leave the arena will be placed back on the TRACK at the earliest safe opportunity. The TRACKBALL will be placed on the TRACK at the approximate location where it exited.

7.3.5 Robot Operations

7.3.5.1 Robot Out Of Bounds

<G31> ROBOT out of Bounds - Any ROBOT that touches any surface outside of the TRACK boundary will be disabled for the remainder of the period (either HYBRID or TELEOPERATED). No penalty points will be assigned.

<G32> Grace Period after HYBRID - If a ROBOT should touch any surface outside of the TRACK boundary during the HYBRID PERIOD, it will have a 10 second "grace period" to right itself and return to the TRACK at the beginning of the TELEOPERATED PERIOD. If the ROBOT is unable to right itself within the grace period, it will be disabled for the remainder of the MATCH. If at any time the Head Referee should determine that the attempts to recover from the situation constitute unsafe operations, Rule <S01> will take precedence.

<G33> Alliance Station Wall - ROBOTS may not extend/cross over the Alliance Station Wall for any reason. If a violation of this rule occurs a PENALTY will be assigned and the ROBOT may be disabled.

7.3.5.2 Robot Actions

<G34> Arena Interaction - ROBOTS may push or react against any elements of the arena, provided there is no damage or disruption of the arena elements. ROBOTS may not grab, grasp, grapple, or attach to any arena structure. If a ROBOT violates this rule, the TEAM will be given one warning. If the referee determines that the TEAM is disregarding the warning, their ROBOT will be disabled for the remainder of the MATCH. ROBOTS that become entangled in the arena elements will not be freed until after the MATCH has finished, unless the entanglement represents a safety hazard.

<G35> Arena Damage - Any ROBOT that has damaged any part of the arena, carpet, or TRACKBALLS, may be disabled if the Head Referee determines that further damage is likely to occur. The TEAM may be required to take corrective action (such as eliminating a sharp edges, removing the damaging MECHANISM, and/or re-inspection) before the ROBOT will be allowed to compete in subsequent MATCHES.

<G36> DELETED.

<G37> ROBOT to ROBOT Interaction - Strategies aimed solely at the destruction, damage, tipping over, or entanglement of ROBOTS are not in the spirit of the *FIRST* Robotics Competition and are not allowed. In all cases involving ROBOT-to-ROBOT contact, the TEAM may receive a PENALTY and/or their ROBOT may be disqualified if the interaction is inappropriate or excessive. However, it is noted that *FIRST* Overdrive is a highly interactive game. Robust construction of ROBOTS will be very important in this high-speed competition. ROBOTS should be designed to withstand the high-speed contact that will occur during the MATCH. Appropriate contact is allowed under the following guidelines:

a. High speed accidental collisions are likely to occur during the MATCH, and are an expected part of the game. However, high-speed intentional ramming is not acceptable and will be penalized.

b. Contact within the BUMPER ZONE is generally acceptable.

c. Contact outside of the BUMPER ZONE is generally not acceptable, and will result in a PENALTY. The offending ROBOT may be disqualified from the MATCH if the offense is particularly egregious or if it results in substantial damage to another ROBOT. However, incidental contact outside of the BUMPER ZONE will not be penalized.

d. If a ROBOT extends outside of the perimeter of the STANDARD BUMPERS (the perimeter of the bumpers is the polygon defined by the outermost corners of each

STANDARD BUMPER segment), it is responsible for the extension's contact with other ROBOTS. The ROBOT must not use the extension to contact other ROBOTS outside of the BUMPER ZONE. Likewise, other ROBOTS will not be responsible for contact with the extension outside of the BUMPER ZONE. Again, incidental contact will not be penalized.

e. Extension to extension contact between two ROBOTS with appendages outside the ROBOT perimeter of the STANDARD BUMPERS will generally not be penalized.

f. Contact with a tilted ROBOT outside the BUMPER ZONE (particularly if resulting from contact within the BUMPER ZONE) will generally be considered incidental contact.

g. A ROBOT may not attach to and/or climb onto a ROBOT on an opposing ALLIANCE (doing so will be interpreted as an attempt to damage an opposing ROBOT, and will be penalized as such).

h. Use of any sloped or angled feature of the ROBOT as a wedge to overturn an opposing ROBOT is explicitly prohibited, and will be assessed as a violation of Rule <R19>.

<G38> Signal To Pass – A ROBOT may indicate a desire to pass an IMPEDING ROBOT by approaching the opponent ROBOT and "bumping" the back of the opponent ROBOT (relative to the Direction of Traffic) .

- All "bump to pass" signals must be made with or against a STANDARD BUMPER and inside the BUMPER ZONE, or
- If in POSSESSION of a TRACKBALL, the ROBOT may "bump" the IMPEDING ROBOT with the TRACKBALL outside the BUMPER ZONE, providing the contact is made exclusively with the TRACKBALL.

Signaling a desire to pass by "bumping" must still be executed within the constraints indicated in Rule <G37>. E.g. high-speed intentional ramming or using the TRACKBALL to intentionally damage or topple an opponent are still not acceptable actions, and will be penalized.

<G39> Robot Entanglement – Entangled ROBOTS will be disabled if attempts to disengage are causing damage or a dangerous situation. If it is determined that a ROBOT intentionally entangles an opposing ROBOT, the offending ROBOT will be disqualified. If, due to loose cables, hoses, cordage, etc., a ROBOT unintentionally but routinely entangles another ROBOT as a result of normal game interaction, the ROBOT may be disqualified. The TEAM will be required to repair the entangling elements before the ROBOT will be permitted to participate in subsequent MATCHES.

<G40> IMPEDING Traffic – ROBOTS shall not intentionally IMPEDE the flow of traffic around the TRACK. A ROBOT will be considered to be IMPEDING traffic if it is preventing an opposing ROBOT from proceeding around the TRACK. A ROBOT can be found to be IMPEDING traffic if:

- the ROBOT is traveling slowly relative to the approaching ROBOT, and moving to prevent the approaching ROBOT from passing, or
- the ROBOT is stopped on the TRACK and there is no clear lane of passage for the opposing ROBOT, or
- the ROBOT pins an opposing ROBOT against an arena element, border, or another ROBOT

Note that a ROBOT is not IMPEDING traffic if:

- there is a clear "passing lane" around the ROBOT, or
- the IMPEDING ROBOT and the approaching ROBOT are from the same ALLIANCE (i.e. a ROBOT can not impede another ROBOT of the same ALLIANCE), or
- the ROBOT is in the process of HURDLING (except as noted in Rule <G43>).

<G41> Permitting To Pass - When a ROBOT has received a signal to pass (see Rule <G38>), or when the REFEREE signals that a ROBOT is pinning an opponent in place, the ROBOT shall have 6 seconds to move out of the way and create a "passing lane" to allow the opposing ROBOT through. ROBOTS that fail to do so within 6 seconds after the "signal to pass" shall receive a PENALTY. Repeated infractions will result in a YELLOW CARD being issued to the ROBOT.

<G42> Protection While HURDLING – A ROBOT in the process of HURDLING shall not be subjected to overt, blatant, or aggressive contact that interferes with the HURDLING attempt. Each incident will be PENALIZED. Bumping to signal to pass (see Rule <G38>) a HURDLING ROBOT is permitted if no passing lane is open (see Rule <G43>). Incidental contact while passing the HURDLING ROBOT or otherwise engaged in normal game play is permitted.

<G43> IMPEDING With Multiple HURDLERS- If multiple ROBOTS are HURDLING simultaneously and effectively blocking the width of the TRACK, then opposing ROBOTS may signal to pass and the HURDLING ROBOT must clear a passing lane within 6 seconds. A PENALTY will be awarded to the HURDLING ROBOT for each violation.

<G44> Detaching MECHANISMS - ROBOTS may not intentionally detach parts or leave multiple mechanisms on the TRACK. Violations will result in a PENALTY per incident. If an intentionally detached component or mechanism significantly impedes access to the TRACK or an ALLIANCE ROBOT, the offending ROBOT will be disqualified from the MATCH.

<G45> Arena Reset - ROBOTS must be designed to permit the release and removal of any TRACKBALLS from the ROBOT without being powered up after a MATCH. If a ROBOT violates this rule, the offending TEAM will be warned and requested to modify the ROBOT. If the modification is not made, the ROBOT may not be permitted to compete in future MATCHES.

7.3.6 Team Member Actions

<G46> TEAM Members In Arena – Each ALLIANCE shall have no more than the four designated members of each of the three participating TEAMS in the arena during a MATCH. Any ALLIANCE with additional personnel in the arena will be assigned a PENALTY, and the additional personnel must leave the area before the MATCH can proceed.

<G47> TEAM Positions During HYBRID PERIOD – During the HYBRID PERIOD, the DRIVERS and COACH must stand behind the PLAYERS LINE within their ALLIANCE ZONE. During the HYBRID PERIOD, the ROBOCOACH must stay within one of the two designated ROBOCOACH STATIONS (either local or remote). Each violation (stepping outside the designated area, or stepping across the PLAYERS LINE) will result in a PENALTY. Exceptions will be made in cases involving personal or OPERATOR CONSOLE safety.

<G48> TEAM Positions During TELEOPERATED PERIOD - During the TELEOPERATED PERIOD, the DRIVERS, the COACH and any local ROBOCOACH must stay within their ALLIANCE ZONE. They may travel anywhere within the ALLIANCE ZONE (note that the ALLIANCE ZONE includes the local ROBOCOACH STATION). Any ROBOCOACH starting in the remote ROBOCOACH STATION must stay within the remote ROBOCOACH STATION during the entire MATCH. Each incident of stepping out of the designated area will result in a PENALTY.

<G49> ROBOCOACH Signaling – If the ROBOCOACH will be providing signals to the ROBOT, then prior to the start of each MATCH the ROBOCOACH must place a Signaling Card in the ROBOCOACH STATION. The Signaling Card shall be a 3-inch by 5-inch card listing the one to four actions that can be commanded by the ROBOCOACH.

<G50> TRACKBALL Interaction - No TEAM member may contact TRACKBALLS at any time during the MATCH. Violations will result in a PENALTY.

<G51> DRIVERS Operating ROBOTS - During a MATCH, the OPERATOR CONSOLE shall be operated solely by the DRIVERS. SIGNALING DEVICES shall be operated solely by ROBOCOACHES. Any operation of the OPERATOR CONSOLE or SIGNALING DEVICE by other than the designated TEAM members will result in the ROBOT being disabled and the offending TEAM being disqualified from the MATCH.

<G52> Respect and professional demeanor - *FIRST* competitions promote respect and professional demeanor. In the event that any TEAM members in the arena are uncivil towards competition personnel or other TEAMS, the TEAM may be disqualified from the MATCH. This rule applies to TEAMS at all times while in the arena (including before and after the MATCH). TEAMS will not receive MATCH penalties for actions off-field, however event personnel will hold them accountable for their off-field actions.

7.3.7 Referee Interactions

<G53> REFEREE Discussions - Any discussions regarding calls, rules, scores, or penalties must be between the DRIVERS or ROBOCOACHES and the Head Referee. COACHES may not have discussions on these topics with the Head Referee.

<G54> Information Sources - When making a ruling, the Head Referee may receive input from other sources, particularly Game Design Committee members, *FIRST* personnel, and technical staff that may be present at an event. However, the Head Referee's decision is final (also see Rule <T04>).