2021-2022 FIRST® Tech Challenge
Forum Answered Questions - Remote
How To Use This Document

The FIRST Tech Challenge Official Q&A Forum is a place where teams can ask questions and receive official answers from game expert moderators. The official FIRST Tech Challenge Question & Answer Forum rulings take precedence over all information in the game manuals.

Moderators will answer team questions beginning each Monday, and close on Thursday at 12:00pm eastern time. The forum answered questions are then converted to PDF (this document) to be easily read by teams and volunteers. This takes place every week for the entire season, so teams should ensure to access the new forum printout each Thursday. Any rule clarifications or changes will apply to events happening that weekend.

For Remote Teams

Teams competing in remote gameplay must use the rules that apply when their specific event started. For example, if a team’s remote event starts on Monday, 11/29/2021, the team would use rules from that date and prior. New rules or clarifications that are posted after the window opens do not apply until the next competition. Make sure to check the date of the forum post.
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Traditional and Remote - Robot Rules

Q288 Added rules DS08 and RS10 to the Game Manual Part 1, release was 2/23/2022

Q:
Clarification on Sounds. We can not use any sounds as a software solution to help in driver control? For example=Captured on Cargo Intake.

A:
Correct. No sounds may initiated by Team Code in either the Driver Station or the Robot Controller during competition.

(Asked by 5560 answer published at --)

Q232 Shared TSE

Q:
Could a team make a TSE with a spot to write in a team number with the intent of using the same TSE for each alliance partner, changing the number for each partner, assuming that the TSE passes inspection at the beginning of the day? If not, could a team bring a TSE for each possible alliance partner and have them all inspected? In other words, must the TSE be inspected as part of each team's robot, or can one team have the TSE pass inspection, then share it with another team?

A:
A TSE without a team number would not pass inspection. If the number is changed during the day, i.e. before each Match, then the TSE must be re-inspected before it is allowed onto the Field. Just a note of caution, at many event, the Inspectors are re-assigned to other roles and may not be immediately available for re-inspection.

(Asked by 16597 answer published at --)

Q194 Measuring Tape attached to robot

Q:
G15 prohibits Robot set-up alignment devices. We have a tape measure permanently attached to our robot that we can use to measure the distance to the field perimeter wall when placing our robot. Does this violate rule G15(or any other rule)?

A:
Rule G15 allows alignment devices that can be reset within the 18” cube starting size. As long as the tape measure can be retracted within the starting size, it is legal.

(Asked by 19815 answer published at --)

Traditional - Game Rules

Q296 Clarification on Q25 and launching

Q:
In Q25 you state "horizontal travel that is no more than 150% of the maximum dimension of the Freight will likely be viewed by the referee as not Launching". When a ball is ejected it has some momentum and will travel farther depending on the height it is released. Is horizontal travel measured by the overall distance traveled or distance traveled at the height plane it was released? If a ball is released at a height of 17" do you measure the launch distance at 17" or where it touches the mat?

A:
If there are no obstructions, the horizontal measurement is between the position of the exit point from the Robot and where the Scoring Element touches the Playing Field Floor.

(Asked by 14188 answer published at --)

Q200 Blocking opposing Alliance's access to their Carousel, just before and throughout End Game

Q:
GS7d indicates that a Robot may not interact or interfere with the opposing Alliance's Carousel. Major Penalty per occurrence. Q1. Does this mean that a Robot will be penalized per GS7d, if they park in the corner of the opposing Alliance's Carousel without touching it, but blocking access to it - before/during End Game? Q2 If answer to Q1 is yes, then how many penalty occurrences are evaluated, if the Robot stays parked in the corner of the opposing Alliance's Carousel for the entire End Game?

A:
If a Robot attempts to access its Alliance's Carousel, the defending Robot described in this scenario is violating rule G28. The defending Robot should receive a rule G28 Minor Penalty every 5 seconds that the Blocking condition continues. Repeated and/or extended Blocking of the Carousel is Egregious Behavior and rule G30 consequences will apply.

(Asked by 20308 answer published at --)

Traditional - Gameplay - All Match Periods

Q308 Scoring from inside the warehouse after you completely removed a piece of freight

Q: After we finished the warehouse operations and we are completely out of the warehouse with a piece of freight in possession, can we partially go back in the warehouse to score on the shared shipping hub, or do we have to be out of the warehouse even tho the warehouse operations were completed?

A: In general, a Robot and its Controlled Freight that completed Warehouse Operations may partially go back into the Warehouse without consequences. For example, a Robot may partially reenter the Warehouse while orienting itself prior to placing Freight onto the Shared Shipping Hub.

Note: Keep in mind the rule GS5b requirement that a Robot must be Completely Outside of the Warehouse to Score Freight.

(Asked by 19104 answer published at --)

Q299 Does "easily avoidable" change based on a robot's capability to drive over the barriers?

Q: Q51 describes a way in which Freight inadvertently positioned near the Warehouse border could be removed from the Warehouse without a Penalty. Question 1: Does the meaning of "easily avoidable" in Q51 change based on whether the robot is capable of driving over the barriers? Question 2: Is Freight removed from the warehouse in this manner eligible to be scored without Penalty?

A: Answer 1: No. An underlying assumption when applying game rules to a scenario is that all Robots are able to drive over the Barrier, even if they are not actually capable of driving over the Barrier.

Answer 2: We believe [Q62](/qa/62) answers this question.

(Asked by 6436 answer published at --)

Q298 Clarification to Q294

Q:
Clarifying the question. We agree 100% that 'deliberate' placement of an element under the shared shipping hub is a violation of G29. Our question is that guidance has been provided to re-interpret the word 'deliberately' to also mean 'accidentally' for G29. We are trying to understand what kinds of 'accidental' actions would be penalized given G29 as written clearly only states 'deliberately'. Balls roll long distances randomly, blocks bounce unpredictably off the mat, etc...

A:
We understand why you are questioning the ruling in the Q&A Forum and we hope that the following information will help you reconcile the perceived conflicts between the game manual and the forum.

A piece of Freight under the Shared Shipping Hub has a significant effect on gameplay and therefore, consequences need to be applied to the Robot causing this scenario, even if the outcome was not deliberate.

It is difficult to anticipate all gameplay situations when the rules are written before the season starts in September. When we wrote the rules protecting the Shared Shipping Hub state of Balance, we addressed Robot Interference with the Shared Shipping Hub at the End of the Match (GS3). We did not write a game specific (GS) rule that applies to the scenario described in Q294 (/qa/294).

Without a game specific rule to provide guidance, we looked to the general (G) rules. The Illegal Usage of Game Elements rule (G29) is close to what is needed. A Game Element (Freight) was moved by a Robot to a location that amplified the difficulty of a Scoring activity. However, rule G29 only addresses deliberate Robot actions. What should a referee do if the Robot's actions are accidental?

Fortunately, there are processes in place to answer questions that are not directly addressed in the game manuals. In this case, a referee posted a question to the referee Q&A Forum and an official answer was provided. Just like the Team Q&A Forum, answers provided in the referee Q&A Forum are enforceable at Competitions. The Head Referee at your Competition appropriately and correctly shared this new information with Teams during the Drivers Meeting. This prompted a Team to post a question to the Team Q&A Forum. The Game Design Committee provided consistent guidance in both the referee and Team Q&A Forums. Everyone in FTC land has access through the Q&A Forums to know the consequences of the scenario at hand.

One might ask, what allows the Game Design Committee to use the Q&A Forum to expand rule G29 to include accidental Robot actions for this scenario? The first paragraph in section 4.6 of the Game Manual Part 2 explains the hierarchy for applying the Game Manual's Safety, General, and Game Specific rules and how they relate to posts in the Q&A Forum. The last sentence of this paragraph states that: "The official FIRST Tech Challenge Question & Answer Forum rulings take precedence over all information in the game manuals." In place of writing a new GS rule and publishing a new version of the game manual so late in the season, we decided it was best to publish in the Q&A forum the adjustment to rule G29 for this scenario.

We hope that this additional information is helpful.

The question in the post: "We are trying to understand what kinds of 'accidental' actions would be penalized given G29. . ." is too open-ended to address in the Q&A forum. In general, the guidance in the Q&A Forum is that accidental or deliberate relocation of Freight that effects the Balance state of the Shared Shipping hub is subject to rule G29 consequences at the discretion of the referee. If you have specific scenarios of concern, please ask the Head Referee about them during the Drivers Meeting.

(Asked by 12533 answer published at --)

Q297 Inadvertent tipping of another robot

Q:
G26 states that some defense gameplay is to be expected. If a red robot pushes the blue robot against the barrier and causes the blue robot to get stuck or even tip, under which of these situations would a major penalty apply? 1. The red robot initiates the contact but pushes the blue robot slowly into the barrier. 2. The blue robot initiates the contact but the red robot pushes the blue robot slowly towards the barrier. 3. The red robot inadvertently runs into the blue robot at a higher speed.

A:
It is difficult to provide an absolute ruling for these scenarios. There is certainly a potential for violating rule G26 in all three situations. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee.

(Asked by 8644 answer published at --)

Q294 G29 'deliberately' vs 'accidentally'

Q:
It was stated in a driver's meeting that the latest guidance is to assess a G29 penalty for all situations that cause a game element to end up under the Shared Shipping Hub. Regardless of deliberate or accidental. Regardless of whether it is your own side or opponent side that is affected, even if the element is cleared later. We found no change of G29 from 'deliberately' in the latest game manual or Q&A forum. Can we get a rapid clarification here? (Competition is 3/5.)

A:
A piece of Freight under the Shared Shipping Hub has a significant effect on gameplay. An immediate Major Penalty for violating the illegal use of Game Elements rule G29 is appropriate in this situation if the referee is able to determine which Robot caused the Freight to "end up under the Shared Shipping Hub."

Note: This question was posted after the weekly cutoff date for publishing answers.

(Asked by 12533 answer published at --)

Q290 Warehouse Defense

Q:
Per Game Manual Part 2, warehouses are specified as alliance neutral and number 2 in total. Question 1: Is a single robot completely blocking access to one of the two warehouses in violation of g28? Question 2: if #1 is legal, is scoring while fully blocking a warehouse in violation of the "if everyone did this clause" of 7.3.1 due to there being more robots than available warehouses on the field?

A:
Answer 1: Yes.

Answer 2: See Answer 1.

(Asked by 16750 answer published at --)

Q289 Clarification around part 2 of Q282

Q:
The second part of Q282 states that "Parking while Possessing an "incredibly heavy Team Shipping Element" does not violate any rules. Rule G28 will apply if the Parked Robot Blocks access to all of the remaining Freight in
the entire Playing Field that is not in a Scoring location." Question: Assuming the same scenario but the defending robot is no longer stationary (IE not parked), does this same ruling apply?

A:
Answer: This scenario is too open-ended to give a definitive answer. It depends on the actions of the Robots. For example:

1) Rule G28 consequences apply if the defensive Robot shadows the opposing Alliance Robot and effectively Blocks all access to an Area.

2) In general, a Robot driving around the Playing Field and playing the Game while Possessing a Team Shipping does not violate any rules. Obviously, all game rules apply. The ultimate decision depends on the Robots actions and any rule violation will be determined by the referee at your event.

(Asked by 16750 answer published at --)

Q285 Possession in the warehouse

Q: Question 1: The question has to do with the definition of immediately. If we pick up more than one freight in the warehouse but get rid of the extra freight as we are driving and exiting the warehouse, (less than a second of possession), are we subject to <GS8>? Question 2: If the robot crosses the warehouse boundary while possessing more than one freight, but we get rid of the extra freight within one second and before we fully exit the warehouse, would we be subject to a <GS5> penalty?

A:
Answer 1: Yes. To avoid the rule GS8 Penalty, a Robot should not perform any action that is "playing the game" while it Possess or Controls more than one piece of Freight. For example, the Robot moving to exit the Warehouse is "playing the game."

To avoid a rule GS8 consequence, the Robot in this scenario should remain stationary while it releases the extra piece of Freight unless the Robot motion is necessary to release the extra Freight. For example, a piece of Freight is stuck under the Robot's drivetrain and the only way to release the Freight is to move the Robot away from the Freight.

Answer 2: Yes, if the released Freight exits the Warehouse.

(Asked by 8421 answer published at --)

Q280 Clarification around Capping Defense

Q: If a robot is defending another robot in possession of their TSE (not under capping protections yet), and through pushing causes their opponents to drop their TSE on the floor. The defending robot never made direct contact with the opponent's TSE but did directly cause it to be dropped. Would there be any penalties assigned to the defending robot in this scenario? If so, which ones?

A:
Answer: The circumstances of the Robot to Robot interaction dictate whether or not a Penalty is applied. The ultimate decision will be determined by the referee at your event, with the final call made by the Head referee. Here are a few examples of how a referee may view defensive gameplay that causes a Robot to drop their Team...
Shipping Element:

1) A defensive bump (i.e., typical gameplay that does not have an obvious risk of damage) against the opposing Alliance Robot is allowed.

2) Aggressive defensive impacts against the opposing Alliance Robot will likely be viewed as violating rule G26.

Note: Components sticking out from the Robot are part of the Robot and all rules apply. Teams are expected to be aware of the offensive and defensive gameplay risks of Robot extensions and also to design them to be resilient to allowed levels of Robot to Robot contact.

Pro Tip: When in doubt about your Team's gameplay strategy, ask the Head Referee for guidance during the Drivers Meeting.

(Asked by 16750 answer published at --)

Q278 unscored autonomous duck

Q:
May an unscored autonomous duck be removed from the carousel and saved for end game?

A:
Answer: If the Duck that was placed on the Carousel during pre-Match setup remains on the Carousel at the end of the Autonomous Period, it should stay on the Carousel. This Duck is eligible to be Delivered during the End Game Period. See Q132 (qa/132) for additional information.

(Asked by 14163 answer published at --)

Q273 TSE Transitive Control

Q:
The definition of "Control" in Game Manual Part 2 section 4.4 states that if an object is following the same movement of a robot it is Controlled. Question 1: Is this transitive? Question 2: For example, if red robot is holding its TSE and blue robot pushes red robot (causing the red TSE to move in the same path as the blue robot) would this be in violation of GS4c?

A:
Answer 1: It depends on the circumstance. For example, a Robot picks up a Box that has a Team Shipping Element balanced on top of it without the Robot touching the Team Shipping Element. The Robot in this scenario is Controlling the Team Shipping Element.

Answer 2: No. The red Alliance Robot Possession of the Team Shipping Element takes precedence in this scenario.

(Asked by 4366 answer published at --)

Q254 Must we collect the first Freight we control?

Q:
Question 1: If our robot collects a piece of Freight while completely in the warehouse, then drops the Freight while remaining in the warehouse, can we then collect a different piece of Freight immediately and exit the warehouse
without getting a penalty? Question 2: Or must we leave the warehouse and restart warehouse operations before collecting a different piece of Freight.

A:
Answer 1: Yes, provided that the first piece of Freight does not exit the Warehouse.
Answer 2: No, provided that the first piece of Freight does not exit the Warehouse.

(Asked by 6436 answer published at --)

Q253 Is a maximum width TSE legal despite making defense harder?

Q:
If a team were to use a maximum width TSE at 8 inches and it remains in its starting location on the barcode, it would be difficult for the opposing alliance to play defense without violating GS4c. Would this be a legal strategy or would this violate G29 despite the TSE being unmoved.

A:
A legally constructed Team Shipping Element located on its Match starting Barcode location does not violate rule G29 or any other gameplay rule.

(Asked by 13648 answer published at --)

Q229 Clarification around Interference

Q:
In game manual 2, interference is specified as "robot to robot interaction". Provided no direct or translational contact between two robots is established, would a) intaking freight from the warehouse adjacent to the opposing alliance station or b) driving into the warehouse adjacent to the opposing alliance station changing the location of freight be considered interference? c) If these two actions are not considered interference, would they be legal to do in the autonomous period?

A:
Answer a: No
Answer b: The answer depends upon the scenario. For example:
1) Rule G29 Penalty: A Robot relocates Freight inside either Warehouse to a strategic defensive location. For example, relocating Freight to obstruct one or both open paths (no Barrier) to the Warehouse.
2) Rule GS8 Penalty: A Robot Herds or directs Freight in either Warehouse above the allowed one (1). Piece of Freight. For example, pushing more than one (1) piece of Freight a time inside the Warehouse to a strategic position.
3) No Penalty: Normal gameplay movement of Freight while a Robot attempts to collect a piece of Freight in either Warehouse.

Answer c: The answers to "a" and "b" apply to both the Autonomous and Driver-Controlled Periods.
Keep in mind the rule GS10 consequences for Interfering with the opposing Alliance's scoring attempts during the Autonomous Period. For example: i) initiating contact with an opposing Alliance Robot during the Autonomous Period is highly likely to be viewed by the referee as violating rule GS10; ii) operating a Robot in the Warehouse adjacent to the opposing Alliance Station risks violating rule GS10 if the Robot Interferes with the opposing Alliance Robot's Scoring attempt.

(Asked by 16750 answer published at --)

Q225 G18 and homing sequence

Q:
G18 states "Robots that start playing the game (Autonomous or Driver-Controlled Period) prior to the start of a Match Period receive a Minor Penalty" Question 1: Does this penalty apply to a homing sequence? After Autonomous, but before driver controlled period our robot moves approximately 5 inches in three axis's to home our turret motors. We use magnetic sensors to find out exactly where our arm is. Question 2: Is this considered an advantage in game pay, thus illegal?

A:
Answer 1: Yes, if the Robot or a part of the Robot moves.
Answer 2: Yes.

(Asked by 14188 answer published at --)

Q220 Clarification to Q219 Dropping the Ball

Q:
Question 1: Did the answer to Q219 apply to both questions within Q219. Question 2: In other words, if you do control freight while in the warehouse and you accidentally do something that causes the freight to go outside the warehouse, then all you need to do to avoid a penalty is to exit the warehouse? Question 3: You can reenter the warehouse right after completely exiting. You don't need to touch that lost piece of freight outside the warehouse to avoid the penalty?

A:
Answer 1: The answer in [Q219 (/qa/219)] starts with the following sentence: "The application of the Warehouse Operations rule GS5a is the same for both of these scenarios."
Answer 2: Yes, keep in mind that this only works for one piece of Freight that exits the Warehouse. If two or more pieces of Freight exit the Warehouse without following Warehouse Operations, only one Penalty is avoided by the Robot completely exiting the Warehouse.
Answer 3: Yes.

(Asked by 20370 answer published at --)

Q216 Field-side scoring summary

Q:
There is a lot happening on the field. Referees are doing a great job with the scoring. There have been a few time where ducks, elements, or autonomous goals were underscored. The detailed online scoring is often delayed a match or two making it difficult to request something like a single duck/element score correction via the question
box. Is it allowed to request a quick, field-side summary of the scored autonomous goals element/duck count and penalties before referees submit scores?

**A:**
There is no provision for performing a field-side review of scoring.

Any questions related to scoring of the match or penalties assessed will need to be addressed in the question box after the scores for the match are posted.

(Asked by 12533 answer published at --)

**Q219 Does Dropping the Ball violate Warehouse Operations?**

**Q:**
The robot picks up one freight in the warehouse but the robot bounces on the barrier driving out of the warehouse causing the the freight to fall off and the freight falls outside the warehouse does this violate "Warehouse Operations"? In this case the front of the robot just crossed the barrier but the back is still within the warehouse. Is the answer different if the robot is entirely within the warehouse when it literally drops the ball and the cargo rolls out of the warehouse?

**A:**
The application of the Warehouse Operations rule GS5a is the same for both of these scenarios. The rule GS5a consequence depends on upon what happens next:

Scenario 1 - Robot exits the Warehouse: The Robot completes Warehouse Operations for the dropped Freight by exiting the Warehouse without Possessing or Controlling a piece of Freight. No rule GS5a Penalty is applied in this scenario because the Robot completed Warehouse Operations.

Scenario 2 - Robot Remains In the Warehouse and continues to play the game: If the Robot Parks, Possesses or Controls a piece of Freight in the Warehouse, drives around In the Warehouse, etc. it will receive a rule GS5a Minor Penalty for not completing Warehouse Operations for the dropped Freight.

(Asked by 20370 answer published at --)

**Q218 Freight scored in Alliance Storage Unit in autonomous and at the end of 2.5 minutes**

**Q:**
If freight is completely in the Alliance Storage Unit at the end of Autonomous, it scores 2 points. Does that freight earn an additional 1 point at the end of the 2.5 minutes if it remains completely in the Alliance Storage Unit?

**A:**
Yes, the piece of Freight in this scenario earns two (2) points for the Autonomous Period and one (1) point for the Driver-Controlled Period.

(Asked by 16011 answer published at --)
Q213 Does cargo rolling out of the warehouse always receive a penalty?

Q:
What we are seeing at our scrimmages is a robot will run into a clump of freight and the slight movement will cause a ball to roll out of the warehouse. Should this be a penalty? At no time does the robot come into direct contact with the ball, the ball rolling out is caused by the slight movement of all the touching freight when the robot intakes a freight.

A:
There are too many possible variations to comment absolutely on this dynamic scenario. The ultimate decision will be determined by the referee at your event, with the final call made by the Head referee.

A referee will probably not Penalize an occasional, random piece of Cargo that rolls out of the Warehouse solely due to contact with Freight. A Robot that frequently causes Cargo to accidentally Roll out of the Warehouse without following Warehouse Operations is likely to be Penalized.

(Asked by 19376 answer published at --)

Q203 Follow-up to Q155 - Robot Movement Against Wall

Q:
When the answer states "Lasting (i.e., persistent) translational movement of the Playing Field that creates a consequential gap between the Playing Field Wall and the Tile is not allowed," what defines a consequential gap? Is this the normal +/- 1 inch?

A:
We believe Q155 (qa/155) answers your question. There is no specified minimum allowable gap size. The referee watching the match will determine when gameplay is potentially affected. A referee will likely rule that a small gap has an insignificant impact on gameplay.

A few examples of persistent Playing Field Wall movement that affect gameplay are:

1) An increased gap between the Playing Field Wall and the Barrier that has a meaningful effect a Robot's ability to pass through the gap. a) A larger gap could make it easier for a Robot to pass through the gap. b) A gap between the Tile Floor and Playing Field Wall could trap a Robot wheel.

2) A gap between the Tile floor and Playing Field Wall that may trap a Scoring Element.

3) For AndyMark Playing Field Walls, the under Tile strap that holds the walls together needs to be tightened after the Match ends.

Note: The rule G8 +/- 1.0 inch Playing Field Tolerance does not apply to this situation.

Pro Tip: The Drivers Meeting is a good opportunity to ask the Head Referee how this situation will be addressed at the competition.

(Asked by 18523 answer published at --)

Q196 Further Clarification on Launching
Q: Suppose a robot comes to a complete stop, as does its loaded freight item. A hatch is then opened, allowing the loaded freight to slide down a short (2 inch) incline plane, exiting the delivery mechanism. The forces on the freight are therefore gravity, and the normal force from a stationary incline plane. The motion of the freight as it exits has both vertical and horizontal components. Is this considered launching?

A: We cannot comment absolutely on hypothetical scenarios. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee.

The Launching determination depends on the motion of the Freight. For example, a Box or Duck will likely remain near the Robot after sliding off of the Robot's ramp. A piece of Cargo is likely to roll a meaningful distance from the Robot after exiting the Robot's ramp.

Here are a few examples:

1) Not Launching: A piece of Freight (Box, Cargo, or Duck) slides down the Robot's ramp and falls directly into an adjacent Shipping Hub.

2) Not Launching: A Box or Duck slides down the Robot's ramp and comes to rest on the Playing Field Floor near the Robot.

3) Launching: A piece of Cargo slides or rolls down the Robot's ramp and comes to rest on the Playing Field Floor several feet from the Robot.

(Asked by 8397 answer published at --)

Q177 Inadvertent & Inconsequential contact-follow up to Q104: please clarify further

Q: Can you please quantify at what point movement of the alliance shipping hub is considered to affect gameplay? There are disparities in the way that this penalty is being assessed currently. Even accounting for the allowable 1-inch tolerance in autonomous might cause the hub to shift as much as two inches. Some contact is to be expected and in many cases is difficult to avoid. Driver practice alone won't be of help if there is no objective rule about what constitutes a penalty in this case.

A: The Game Design Committee deliberately does not quantify "at what point movement of the Alliance Shipping Hub is considered to affect gameplay." The effect of Alliance Shipping Hub movement on gameplay depends on the direction it is moved. For example, movement towards a Warehouse provides a strategic advantage while movement away from the Warehouse could be viewed by a referee as having an Inconsequential impact on gameplay. A referee could view "X" distance movement towards the Warehouse as affecting gameplay and the same "X" movement away from the Warehouse as being okay.

Note: The Game Design Committee does not understand how to interpret the statement in the Team's question: "Even accounting for the allowable 1-inch tolerance in autonomous might cause the hub to shift as much as two inches." There is no 1-inch tolerance for the relocation of the Alliance Shipping Hub during the Autonomous Period. Rule G8 states that "Competition Playing Field and Game Elements will start each Match with tolerances that may vary as much as +/- 1.0 inch." Perhaps this is what the question references? As stated in the orange box for this rule, "The intent of the generous +/- 1.0 inch tolerance is to accommodate unintentional size and location
variations that may occur. The tolerance is not an excuse for intentional or imprecise accuracy in construction or setup." Further, the +/- 1-inch tolerance is not a guide for determining when movement of the Alliance Shipping Hub affects gameplay.

Pro Tip: The Drivers Meeting is a good opportunity to discuss how rule GS3 will be applied at the tournament.

Pro Tip: Varying the direction a Robot approaches and interacts with the Alliance Shipping Hub will likely reduce how far an Alliance Shipping Hub moves from its Pre-Match starting location. A Robot that repeatedly interacts with the Alliance Shipping Hub from the same direction is likely to cause sufficient Shipping Hub movement to affect gameplay.

(Asked by 5890 answer published at --)

Q171 Legal defense about capping TSE

Q:
We've noticed some teams are starting to use flat TSE elements which they could do the capping using magnetic arms, or even a tape measure. We'd like to clarify if the following scenarios are legal defense or not: Question 1: Since the TSE may be flat, the opposing robot may drive over the TSE and sit on top of it to prevent them from getting the TSE. Question 2: For teams using a tape measure, the opposing robot may just sit between the robot and the TSE to prevent them from getting the TSE.

A:
Per Q37 (/qa/37), a Team Shipping Element that is not Possessed by a Robot must satisfy the size requirements specified in the Game Manual Part 1 rule TE02. Therefore, a "flat" Team Shipping Element used as described in this question is not allowed.

Answer 1: A Robot Parking over a Team Shipping Element is Control of a Scoring Element as described in the definition of Control part "d" in the Game Manual Part 2 section 4.4. The defensive Robot in this scenario will receive a Major Penalty for violating rule GS4c.

Answer 2: In general, the defensive Robot is not breaking a rule for Parking between an opposing Alliance Robot and their Team Shipping Element. Keep in mind that the defending Robot is not allowed to Block all paths of travel to access the Team Shipping Element. See rule G28 for details.

(Asked by 14179 answer published at --)

Q178 Are teleop penalties regarding GS3a in relation to hub position at the beginning of teleop

Q:
Example: Robot pushes the alliance shipping hub during the autonomous phase, then bumps hub during teleop and causes inconsequential and inadvertent movement. Would the position of the hub at the end of autonomous be considered the "starting position" with regard to the teleop phase, with additional penalties assessed with regard to movement from that position, or will teleop penalties be assessed based on movement from original starting position of the hub, even though it first moved in auton?

A:
The rule GS3a penalty is assessed as soon as the movement of the Alliance Shipping Hub affects gameplay. This penalty, like most other penalties, can be assessed during the Autonomous and the Driver-Controlled Periods. The reference "starting point" for determining Alliance Shipping Hub motion that affects game play is the pre-Match
Q155 Robot movement against wall

**Q:**
Is it legal to drive a robot (with rollers on the side intended to prevent wall scratches) against the wall to ensure that it clears the 13.68 inch (+/- 1in) gap between the barrier and the wall? Is touching the wall legal?

**A:**
Yes, this Robot design strategy is allowed if gameplay does not change due to the movement of the Playing Field Wall.

Note: Slight temporary angular leaning of the Playing Field wall is probably okay. Lasting (i.e., persistent) translational movement of the Playing Field that creates a consequential gap between the Playing Field Wall and the Tile is not allowed.

Pro Tip: Throughout the season, Teams participating in Traditional Events may encounter Playing Field Walls from different manufacturers. The Playing Field Walls from AndyMark and IFI may react differently in the scenario described in the question. For example, the AndyMark Playing Field Walls are somewhat bound together with an under-Tile strap extending between opposite sides of the Playing Field. The IFI Playing Field system does not use straps. The AndyMark Playing Field Walls have a smooth polycarbonate surface where the IFI Playing Fields have a metal "bump" at the juncture of two wall segments.

(Asked by 18523 answer published at --)

Q151 Follow-Up to Q133 about Legal Defense

**Q:**
Suppose a robot has a linear slide to deliver the freight to the alliance shipping hub, while the opposing team robot also a lifting mechanism (e.g. vertical slides, v4b, etc.) to raise the arm high, is it legal for the opposing team to use the lifting mechanism to block the attempt of freight delivery?

**A:**
In general, yes. The defensive Robot needs to be careful not to violate rules G26, G28, or GS3e. Keep in mind that we cannot comment absolutely on hypothetical scenarios. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee.

(Asked by 14179 answer published at --)

Traditional - Pre-match

Q311 Moving the out-of-field ducks before match

**Q:**
Prior to the start of a match, can the ducks outside the field next to the carousel be moved to another location?
A:
Ducks must start the Match in the Alliance's respective Loading Dock which is the unmarked Area outside the Playing Field located between the Playing Field Wall and the Alliance Station. The dimension of the Loading Dock is approximately 24 inches (61 cm) x 12 inches (30.5 cm). They can be rearranged as long as they remain in that Area. You can also place your Team Shipping Element in the Loading Dock.

(Asked by 8610 answer published at --)

Q246 Is the Team Scoring Element Barcode Placement Specific to the Alliance Station Position?

Q:
Does the TSE have to be placed on the match schedule defined alliance station position? The definition of Alliance Station in GM1 states "Station One is the Alliance Station closest to the audience", and GM2-4.5.1 states that teams may place their TSE on the "corresponding center Barcode". Does "corresponding" refer to the the barcode group as defined by the match schedule (ex: Red1 nearest the audience), or does it mean either barcode for the assigned red or blue side.

A:
If teams would like to use their TSE instead of the duck, they put their TSE on the center barcode in front of their robot prior to the start match as they set up their robot regardless of station position on the match schedule. The duck is then placed with the others next to the Carousel. Please make sure it is oriented the way your robot would like to "see" it. During the Randomization process before the match begins, the referees will place it on the correct barcode spot based on the results of the randomization.

As for where the team stands in the Alliance Station or robot on the field, GM2-4.5.1-2.a.i states: "Drive Teams, with agreement of their Alliance Partner, select their Robot's starting location" either in Station One or Two. If the alliance doesn't agree on where to stand, then teams should stand in the assigned position based on the match schedule.

(Asked by 3409 answer published at --)

Q181 Orientation of TSE

Q:
If a team chooses to place the TSE on a bar code, must it be placed on the bar code in any particular orientation, or can the team choose its orientation? Example: a TSE is a cylinder with 3" radius and 4" tall, meeting the dimension requirements. Can the cylinder be placed either on its side or standing up depending on the team's preference? In other words, the dimensions could be interpreted as 3"x4"x3" instead of 3"x3"x4", potentially not meeting the dimension requirements.

A:
The Drive Team may place the Team Shipping Element in any orientation on the center Barcode.

(Asked by 16597 answer published at --)
Q166 Moving Servos Continuously During Initialization

Q:
Are teams allowed to continuously move servos while their Autonomous program is initialized up until the Autonomous period starts? We know that teams are allowed to move servos once after a program is initialized, but we are not sure if teams are allowed to move them back and forth constantly until the Autonomous period starts.

A:
The Robot's actions violate rule G18 for starting gameplay early. The Robot must be motionless at the end of the Drive Team's pre-Match setup sequence described in the Game Manual Part 2 section 4.5.1 item 2. Inconsequential, small servo jitter is allowed. Commanded servo motor motion after the referee signals that pre-Match set-up is complete is not allowed.

(Asked by 3805 answer published at --)

Traditional - Autonomous Period

Q304 Clarification around the Preload Level Bonus

Q:
Game Manual two states that "A Robot will earn points for placing its own Pre-Loaded Box on the Alliance Shipping Hub level (#1, #2, #3) that corresponds to the randomly selected Barcode location". The use of "the" is vague, because there are two alliance shipping hubs. Does this mean that a red robot that placed the preload on the correct blue alliance shipping hub level earns a preload bonus for their alliance?

A:
The Autonomous Bonus only applies to a Robot correctly placing the Pre-Load Box on the indicated level of its own Alliance Shipping Hub.

(Asked by 16750 answer published at --)

Q268 Follow up to Q267

Q:
Q162 Doesn't addresses our situation. It refers to a panel that is either used to keep the duck from getting stuck on the robot, or deflects the duck to a desired position when dropping from the carousel. In our case, the first thing the duck touches after leaving the carousel is the floor. After the duck hits the floor, the flaps control where it comes to rest. We believe that this scenario does not violate rule <GS9> (a). Question: Are we correct?

A:
Answer: Yes.

Note: In this scenario, the Robot Controls the Duck after it is Delivered. A rule GS8 Penalty will be assessed if the Robot is concurrently Possessing or Controlling another piece of Freight. For example, the Possession/Control limit of one piece of Freight is exceeded if the Robot still Possesses the Pre-Load Box while it Controls (via the deployed flaps) the Delivered Duck.
Q265 Alliance hub being pushed

Q:
A red alliance robot during the autonomous period crosses the playing field and pushes the blue alliance hub to where it blocks the blue alliance from their duck carousel. What penalties if any should the robot on red alliance be given?

A:
There are multiple rule violations in this scenario:

1. A single rule GS10 Major Penalty for Interfering with the opposing Alliance’s Scoring attempts during the Autonomous Period. Relocating the Alliance Shipping Hub and obstructing access to the Carousel effectively takes these Scoring tasks out of play during the Autonomous Period.

2. A rule GS3e Major Penalty because the interaction with the opposing Alliance Shipping Hub creates a gameplay affecting change.

3. G29 Major Penalty if the referee believes that the Team deliberately used the Alliance Shipping Hub to amplify the difficulty of gameplay for the opposing Alliance.

Note: The Blue Alliance Robots are allowed to relocate their Alliance Shipping Hub to its pre-Match starting location without Penalty.

Q212 Is the TSE considered part of the robot for parking?

Q:
During autonomous, we are replacing the duck with the TSE on the barcode. During the 30 seconds, we pick up the TSE, then parking in the storage area. The robot is completely in the storage area, but the TSE itself sometimes hangs over the line. In looking at the definition, we cannot determine if the TSE is included as part of the robot. Please clarify. Thanks!

A:
This situation is covered by rule G4: "Scoring Elements that are Controlled or Possessed by a Robot are part of the Robot except when determining the location of the Robot or otherwise specified by a Game-Specific rule."

In this scenario, the Robot earns six points for Parking Completely In their Alliance’s Storage Unit.

Q167 Storage Unit - Completely Parked in Autonomous

Q:
If our Robot Arm extends beyond the 23.0" of the Alliance Storage Unit, can we rotate our Robot Arm so that it extends over the Field Wall when stopped to comply with the "Completely" in Alliance Storage Unit, if the tape line
is the "Extention" vertically of the "Completely" in zone?

A:
The Storage Unit Area is defined by gaffer tape on three sides and the Playing Field Wall on the fourth side. Extending a Robot arm over the Playing Field Wall extends a portion of the Robot Outside the Alliance Storage Unit boundary.

Intentional Robot extension Outside the Playing Field Perimeter is not permitted and is subject to rule S2 consequences.

Note: See the definition of "Area" in the Game Manual Part 2 section 4.4.

(Asked by 8487 answer published at --)

Traditional - Driver-Controlled Period

Q282 Clarification around Controlling and G29 on the TSE

Q:
Question: GM2 States that "Objects that are Controlled by a Robot are considered to be a part of the Robot". If a robot controlling its TSE uses the TSE to defend more effectively, would this be a violation of G29? Example 1: (direct use) A robot sticks the TSE out in front of opponents to legally defend a larger area at once. Example 2: (indirect use) A robot has an incredibly heavy TSE and picks it up to be less movable when parked in their opponent-side warehouse

A:
Answer: The answer depends on the scenario. Using a Robot extension to Possess and position the Team Shipping Element away from the Robot is in itself an allowed Robot action. Components sticking out from the Robot are part of the Robot and all rules apply. Teams are expected to be aware of the offensive and defensive gameplay risks of Robot extensions and also to design them to be resilient to allowed levels of Robot to Robot contact. Rules G3 (Forcing an Opponent to Break a Rule), G28 (Pinning, Trapping, or Blocking Robots), and G29 (Illegal Usage of Game Elements) may come into play depending on the circumstance. Posts Q271 (qa/271), Q272 (qa/272), and Q280 (qa/280) are related to Q282. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee.

Example 1: The Robot's actions in this scenario are legal until they are not. Rules G28 (Pinning, Trapping, or Blocking Robots) and G29 (Illegal Usage of Game Elements) may come into play depending on the circumstance. When in doubt about your Team's gameplay strategy, ask the Head Referee for guidance during the Drivers Meeting.

Example 2: Parking while Possessing an "incredibly heavy Team Shipping Element" does not violate any rules. Rule G28 will apply if the Parked Robot Blocks access to all of the remaining Freight in the entire Playing Field that is not in a Scoring location.

(Asked by 16750 answer published at --)

Q266 Blocking passage into or out of a warehouse.

https://ftc-qa.firstinspires.org/admin/report
Q:
1. Is it legal for an alliance to park one of their robots in the gap next to the wall of the warehouse furthest from their staring position at the beginning of a match and/or, to follow a robot after they have passed around (over the barrier) with the intention to prevent them from leaving the shared storage area? 2. What if the only exit path would cause a collision with the shared shipping hub? 3. Is it legal to push an opposing robot through the gap if they are blocking your preferred path?

A:
Answer 1: We believe [Q85](https://ftc-qa.firstinspires.org/admin/report) and [Q186](https://ftc-qa.firstinspires.org/admin/report) answer your question. If they do not, please rephrase your question and resubmit.

Answer 2: Rule G29 prevents Robots from deliberately using Game Elements to amplify the difficulty of a game activity. If this does not address your question, please provide additional detail to help us understand the scenario and why there is an exit path that "would cause a collision with the Shared Shipping Hub." For example: a) Is a defensive Robot obstructing direct paths of travel between the Warehouse and the Shared Shipping Hub area? b) Is the Shared Shipping Hub repositioned so that it is touching or closer than usual to the Barrier? c) Is the only length of the Warehouse boundary that is not defended by a Robot a limited section of Barrier directly adjacent to the Shared Shipping Hub?

Answer 3: Yes, provided that the Robot's actions do not violate rule G26.

(Q259 Follow up for Q256, is fast speed pushing considered as ramming, and illegal?

Q:
A and B are from different alliance, driving from their side's warehouse to the shared hub, already outside warehouse. In recent scrimmage, when A pushed B using A's back, we got warning we are more like ramming, not pushing. A pushed B with its regular driving speed without slowdown. That fast speed makes referees uncomfortable. Referee said he could get us major in official match. Is there any speed limit when A pushes B to prevent B from scoring? Is it required to slow down before push?

A:
We cannot comment absolutely on hypothetical scenarios. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee.

Pro Tip: The line between legal defense and overly aggressive defensive gameplay is subjective. The Drivers Meeting is a good opportunity for Teams to ask the Head Referee about how the referee crew will call aggressive defensive gameplay.

(Q258 Interaction with robot in contact with the carousel before endgame?

Q:
If a robot gets into position and legally contacts the carousel wheel before endgame, does GS7e apply? For example, can an opposing robot make contact and interfere with a robot that is making legal contact with the
carousel (not beginning the duck delivery sequence) before end game begins?

A:
Rule GS7e states that Robots may not: "Interact or Interfere with the opposing Alliance’s Robot when it is in contact with the Carousel. Violations of this rule will result in a Major Penalty per occurrence." The rule does not include an exception for Interference occurring before the start of the End Game Period.

The scenario clearly states that the Robot "contacts and Interferes" with an opposing Alliance Robot that is in contact with the Carousel. Therefore, the Robot will receive a Major Penalty per occurrence for violating rule GS7e.

(Asked by 8695 answer published at --)

Q256 Regarding legal defense for shared hub

Q:
Both A and B are trying to score shared hub from their own warehouse 1. If robot A just pushes robot B straight away when B tries to score, is that legal? 2. If Robot A drives in regular driving speed when pushing B (do not slow down to gently push B), is that legal? Any faster speed will be illegal? 3. A always uses back to push B, but B has some component broken because exposed, will A get major? A has no intention to break B 4. A's slide hit B's slide when both tries to score, is it legal?

A:
Note 1: The answer below assumes that Robots A and B are on different Alliances.

Note 2: The text: "from their own warehouse" is unclear because the Warehouses are Alliance Neutral. There is no Area on the Playing Field designated as an Alliance's "own Warehouse".

Note 3: The text: "trying to score [in the] shared hub from their own warehouse" is a violation of rule GS5b. A Robot must be Completely Outside of the Warehouse to Score Freight. The Answer below will assume that this is a misstatement and the Robots are Completely Outside the Warehouse when attempting to Score On the Shared Shipping Hub.

Answer: The Shared Shipping Hub constraints relating to these questions are described in rule GS3d&e. GS3d states that a Robot may not intentionally relocate or rotate the Shared Shipping Hub. GS3e states that Robots cannot Interfere or interact with the opposing Alliance section of the Shared Shipping Hub. Neither of these rules are violated in the scenarios.

The scenarios described in the question appear to be normal Robot defensive strategies that don't violate any rules. However, we cannot comment absolutely on hypothetical scenarios. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee. For example, scenario 3 includes Robot damage. Depending on the circumstances, a referee could apply rule G26 consequences for damaging a Robot.

(Asked by 12611 answer published at --)

Q251 Scoring at the Shared Shipping Hub from the Alliance Shipping Hub Area

Q:
A robot followed Warehouse Operations and it possesses freight in the Alliance Shipping Hub area (the robot is completely outside the Warehouse). 1) Does the robot have to be fully in the Shared Shipping Area to deliver a freight piece to the Shared Shipping Hub? 2) Is the robot allowed to reach over the barrier from the main area to the shared shipping area to score the freight? 3) Is the robot allowed to drive partially on to the barrier and score the freight on the SSH?

A:
Answer 1: No.
The Robot's location in this scenario satisfies the rule GS5b requirement that it must be Completely Outside of the Warehouse to Score Freight.

Answer for questions 2 and 3: Yes, provided that the Robot remains Completely Outside of the Warehouse during the Scoring activity.

(Asked by 19460 answer published at --)

Q241 Small part of bot outside of Warehouse to pick up freight on border

Q:
If a bot is fully inside the Warehouse with a piece of freight on the border of the Warehouse and the bot must extend a small portion of a gripper slightly outside of the border to grasp the freight, but with the vast majority of the bot and drivetrain still inside, is there an inch or so of leeway given or does this situation not follow Warehouse Operations at all?

A:
The four sequential steps for Warehouse Operations are described in section 4.4 of the Game Manual Part 2. These steps are:

1) Start Completely Out of the Warehouse, then 2) Drive Completely In the Warehouse, then 3) Collect one (1) piece of Freight, then 4) Drive Completely Out of the Warehouse with the collected Freight.

The Robot in this scenario has completed Warehouse Operations steps 1 through 3. If the Robot drives Completely Out of the Warehouse with the collected Freight, the Robot will have correctly completed Warehouse Operations.

(Asked by 5356 answer published at --)

Q234 Downward Contact on Shared Shipping Hub

Q:
If a robot hit down on the shared shipping hub with their delivery arm while delivering freight, causing the shipping hub to tip toward their alliance, would they get End Game points for Shared Shipping Hub tipped toward Alliance?

A:
Applying rule GS3 to this scenario, the Shared Shipping Hub Balance is determined only by the weight and position of the Shipping Hub and the Scored Freight.

If the Robot remains in contact with the Shared Shipping Hub at the End of the Match, Rule GS3.b.iii states that the Shared Shipping Hub is Scored as Unbalanced in favor of the opposing Alliance.
If no Robot is interfering with (e.g., touching) the Shared Shipping Hub at the End of the Match and no other rules were violated, the End Game Shipping Hub Status will be Scored as described in section 4.5.4 2). The Robot pressing down on the Shared Shipping Hub while Scoring a piece of Freight did not eliminate the future Unbalanced Scoring potential of the Shared Shipping Hub.

(Asked by 8610 answer published at --)

Q209 Accidental launching of freight at the end of the game

Q:
Scenario: A Robot rushes to the Warehouse just before the end of the game, and accidentally launches a few pieces of freight, some of which exit the Warehouse. Q1. Is a penalty assessed if freight exits warehouse before timer runs to 0 seconds - but does not give any game play advantage? Q2. Is a penalty assessed if freight exits warehouse after timer runs to 0 seconds - but does not give any game play advantage? Q3. If penalized, is it one minor penalty per freight that exited the Warehouse?

A:
Gameplay rules apply to the entire Match unless a rule includes a limitation. For example, rule G28 Penalties are not given during the Autonomous Period.

Referees may excuse rule violation consequences by applying rule G10. The ultimate decision will be determined by the referee at your event, with the final call made by the Head referee. The Drivers Meeting is a good opportunity to ask the Head Referee how situations like the ones stated in this post will be addressed at the competition.

Answer for 1 & 2: A rule G10 Penalty waiver plus a warning are reasonable but not guaranteed actions for a referee to take in these scenarios. Robot actions preceding the rule violation, previous warnings, etc. may influence the referee to Penalize the Robot in these scenarios.

Answer 3: Rule GS5a Penalties are applied for each piece of Freight leaving the Warehouse that does not follow Warehouse Operations.

(Asked by 20308 answer published at --)

Q206 Inadvertent Contact with Opposing Alliance’s TSE

Q:
We understand that intentional contact with Opposing Alliance's TSE ("TSE"), for example to change the orientation of the TSE, is considered Control thus subject to a GS4.c Major Penalty. Question 1: Is inadvertent contact that causes an inconsequential change in the orientation of the TSE considered Control? Question 2: Is inadvertent contact that causes a consequential change in the orientation of the TSE considered Control?

A:
Both scenarios are examples of Controlling the Team Shipping Element. The referee may choose to invoke rule G10 and not apply a rule GS4c Penalty if the Robot's interaction with the opposing Alliance's Team Shipping Element is both Inadvertent and Inconsequential.
The following answers assume that the action occurs during the Driver-Controlled Period and the Team Shipping Element is located on its starting Barcode location with no change to its orientation before the interaction with the opposing Alliance Robot. A Team Shipping Element that has been moved from its starting location has too many possible outcomes to address in this Q&A post.

Answer 1: The first question states that Inadvertent contact caused an Inconsequential change in the Team Shipping Element. If the referee watching the Match agrees, no rule GS4c Penalty will be applied because of the rule G10 exemption.

Answer 2: The second question states that Inadvertent contact causes a consequential change to the Team Shipping Element's orientation. Since there is a "consequential" change to the Team Shipping Element, the referee will likely apply a GS4c Penalty.

(Asked by 9999 answer published at --)

Q198 Clarification around G28 penalties

Q: If two bots from opposing alliances intentionally (a) or unintentionally (b) work to block off an area of the field, which robot is assessed a G28 blocking penalty?

A: We cannot comment absolutely on hypothetical scenarios. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee.

The referee usually provides verbal and visual signals that clearly identify the Robot receiving a warning or Penalty.

(Asked by 16750 answer published at --)

Q197 The pre-load box is de-scored during the driver-controlled period.

Q: The pre-loaded box is scored during the autonomous period. If it is de-scored during the driver-controlled period, is the autonomous score nullified?

A: No

(Asked by 1001 answer published at --)

Q191 Are robots expected to be able to fit in the gap?

Q: Does the following satisfy the definition of blocking? 1. A robot plays active defense on the barriers, but not the gap preventing a robot from crossing the barriers, but the defended bot is narrower than 13.7 inches and can enter and exit the warehouse through the gap. 2. A robot plays active defense on the barriers, but not the gap
preventing a robot from crossing the barriers, but the defended bot is wider than 13.7 inches and can not fit in the gap.

A:
The answers that you seek are found by reading the definition of Block/Blocking in section 4.4 and rule G28 in Game Manual Part 2.

Answer 1: The defensive Robot does not violate rule G28 because it is not Blocking all paths of travel to the Warehouse. Allowing a 13.7 inch clear path of travel for a Robot that is less than 13.7 inches wide relative to its direction of travel is not Blocking.

Answer 2: The defensive Robot violates rule G28 because it is effectively Blocking all paths of travel to the Warehouse. Allowing a 13.7 inch clear path of travel for an 18 inch wide Robot is Blocking. Therefore, the defensive Robot will receive a Minor Penalty for every five seconds that it is in violation of the rule.

(Asked by 13648 answer published at --)

Q169 Downward Contact on Shared Shipping Hub

Q:
Question 1: Can a robot hit down on the shared shipping hub causing freight from the opposing alliance to bounce over to their side? We had that happen in a tournament, not only while freight was being delivered, but the robot arm continued to hit down on the hub several times even after freight was delivered. Question 2: Is it acceptable to drop freight from the robot from say 10-12" onto the shared hub (gravity only)?

A:
Answer 1: Gameplay strategies that descore Freight from the opposing Alliance's section of the Shared Shipping Hub receive a Major Penalty per Scoring Element as described in rule GS2d. It is possible that a referee will view the Robot's actions in this scenario as violating rule GS2d. We cannot comment absolutely on hypothetical scenarios. The ultimate decision would be determined by the referee at your event, with the final call made by the Head referee.

Answer 2: There is no rule that specifically limits the maximum height for dropping Freight (gravity only) onto a Shipping Hub.

(Asked by 8531 answer published at --)

Q156 Shared Shipping Container Unbalanced points clarification

Q:
If an opposing alliance places a piece of freight on the shared shipping container without fully leaving the warehouse, but that one piece of freight is the only freight on the shipping container, causing it to be unbalanced towards the opposing alliance side, does the opposing alliance get rewarded 20 points for the shipping container being unbalance at the end of the match? Basically can improperly placed freight reward an alliance team with unbalanced points?

A:
In this scenario, the Robot receives a Minor Penalty for Scoring Freight while the Robot is In the Warehouse (GS5b) and it also receives a Minor Penalty for not following Warehouse Operations (GS5a).
Freight exiting the Warehouse without following Warehouse Operations remains eligible for Scoring.

If the Freight in question remains On the Alliance's side of the Shared Shipping Hub at the End of the Match the Alliance earns four (4) points. If the Alliance's section of the Shared Shipping Hub is contacting the Tile Floor at the End of the Match it is Unbalanced and the Alliance receives twenty (20) points.

(Asked by 11703 answer published at --)

Q153 Moving freight with warehouse using arm during the driver-controlled period.

Q:
Can we use a robot arm to push multiple freight items from the corner to the middle of the warehouse during the driver-controlled period? We are referring to moving within warehouse so that our arm can access freight from the middle of warehouse.

A:
No, the Robot is violating rule GS8a because it is Herding a quantity of Freight above the allowed limit to gain a strategic advantage.

Note: A Robot is allowed to nudge Freight out of the way to access a specific piece of Freight.

(Asked by 18241 answer published at --)

Traditional - End Game

Q307 TSE interactions with scored freight

Q:
1) If freight is partially supported by both the TSE and alliance shipping hub level 3, is the freight counted as scored? 2) Can a robot use a legally scored TSE to expand the carrying capacity of a level of the alliance shipping hub or will g29 take effect? 3) What penalties, if any, are assigned to a TSE placed on top of the alliance shipping hub center pole after endgame starts, and after being scored expands beyond the allowed limit?

A:
Answer 1: Freight Scoring requirements are described in Game Manual Part 2 sections 4.5.2, 4.5.3, and 4.5.4. Freight must be Completely On a Level to earn points. A referee will likely allow incidental Freight contact with a Team Shipping Element to count as Scored. Freight that is Supported by a Team Shipping Element has zero Score value.

Answer 2: No, per rule G29.

Answer 3: The Team Shipping Element described in the question would not pass inspection and is therefore not allowed to be used in a Match. The referee would likely apply rule G29 and/or G30 consequences.

(Asked by 16750 answer published at --)

Q283 Shared shipping hub pushed onto barriers

Q:
If the opposing alliance gives the shared hub a big push it is likely a major penalty. If that push results in the hub resting on the barriers so that the opposing side touches the tile floor what happens? Now our alliance cannot get points for tipping. This does not appear to violate GS3-a-iii so it appears the opposing alliance gets the tipping bonus. Granted, I don't expect the referees to give them the bonus but I could not find the rule that clarifies this case.

A:
The Shared Shipping Hub in this scenario has a zero Balance/Unbalanced Score value because its state of Balance is influenced by contact with the Barrier. Rule GS3b states that "the Shipping Hub Balance [state] shall be determined only by the weight and position of the Shipping Hub, the Scored Freight, and the Scored Team shipping Elements."

(Asked by 20370 answer published at --)

Q272 Do teams with long extension receive Carousel Protections while playing as intended?

Q:
1. If a team is using a main scoring mechanism to score caps while spinning the carousel, and isn't "weaponizing" it, are the slides protected from robots pushing/ramming since this could cause the bot to rotate and leave the carousel interfering with carousel attempts. 2. If a team is using a tape measure to cap while spinning ducks and is not "weaponizing" it, does the tape measure and TSE receive any protections from defense before the cap enters the vertical plane of the alliance hub

A:
Answer 1: We believe that Q271 (/qa/271) #2 answers this question. The main body structure of the Robot is protected by rule GS7e while the Robot contacts the Carousel.

Answer 2: There are no rules for this scenario that provide general protection for the extreme Robot extension towards the Alliance Shipping Hub. Rule GS4c could come into play if the referee determines that the defending Robot Controls the opposing Alliance's Team Shipping Element. For example, a Robot that contacts and dislodges a Team Shipping Element that is Possessed by an opposing Alliance Robot could be viewed by a referee as Controlling the opposing Alliance Team Shipping Element in violation of rule GS4c. Rule GS4b protects the Capping attempt only when the Robot has a Possessed Team Shipping Element In the outside edge of the Alliance Shipping Hub.

Note: A Robot that can concurrently perform the Delivery and Capping tasks has a clever design and the gameplay strategy is fun to watch. I observed this gameplay strategy at several tournaments and I never tired of watching the Robot Deliver Ducks and concurrently Score a Team Shipping Element. However, the extreme Robot extension is not always protected from defensive gameplay and it risks violating several rules depending on the circumstances. For example, a Robot with an extended tape measure needs to be careful not to violate rule G26 for entanglement or rule G28 for Blocking.

(Asked by 13648 answer published at --)

Q271 Clarifications around Carousel Protections

Q: "Turret cap" robots can cap their TSE (or extend across the field) while contacting their carousel. How are rules applied when a turret cap robot is contacting its alliance's carousel while capping and: Q1) it initiates contact with
an opposing alliance robot in compliance with Q171? Q2) if it gets contacted by opponent, but carousel specific operations are not interfered with? Q3) If the "turret cap" robot is clearly using the carousel protections to play defense, do the same rules apply (G3)?

A:
Clarifying Note: Turret Cap Robots typically expand their reach by extending a tape measure mounted on a turret mechanism. The end of the tape measure is usually capable of Possessing a Team Shipping Element. The turret cap Robot gameplay strategy is to concurrently Deliver Ducks and Score a Team Shipping Element during the End Game Period.

Answer 1: Rule G3 protects the opposing Alliance Robot from receiving a rule GS7e Penalty because the Scoring Robot initiated the contact with the opposing Alliance Robot. Rule GS4b will come into play if the Team Shipping Element is In the outside edge of the Alliance Shipping Hub.

Answer 2: The "turret cap" robot may not "weaponize" their extreme extension capability to take advantage of gameplay rules that are intended to protect a Robot while it is playing the game (e.g., Scoring). The "main" portion of the Robot is protected by rule GS7e. However, the turret Robot's extended tape measure is not protected by rule GS7e.

Answer 3: See the answers to questions 1 and 2.

(Asked by 16750 answer published at --)

Q262 Clarification around Double Capping

Q:
Game Manual 2 states that Capping is defined as "Placing a Team Shipping Element on top of the Alliance Shipping Hub pipe or on top of another legally Scored Team Shipping Element." If the second TSE is fully supported by the first but does not stick higher in height than the initial TSE does it earn the 15 point Cap Score?

A:
Yes.

(Asked by 16750 answer published at --)

Q233 Does 2nd TSE count score if 1st TSE is placed before 30 seconds?

Q:
If a robot places the alliance's 1st TSE at 32 seconds on the alliance hub pipe (this won't score as it is too early), and places the 2nd TSE on the 1st TSE at 20 seconds before the end of the match, does the 2nd TSE still count as scored?

A:
You are correct, the first Team Shipping Element correctly placed on the Alliance Shipping Hub pipe has zero Score value because the Capping achievement was started before the start of the End Game Period.

The second placed Team Shipping Element earns the fifteen point Capping Score because it was correctly placed during the End Game Period.

(Asked by 12611 answer published at --)
Q215 Carousel contact before End Game

Q:
Section 4.5.4 of GM 1 is clear that starting end game tasks before End Game begins earn ‘0’ points. Q120 is clear about placing ducks before End Game. Question 1: Is the robot is allowed to make contact with the edge of the carousel before endgame begins? Question 2: Is it OK for the carousel to rotate a small amount due to contact? Question 3: Would the answer(s) be different if the starting duck was still on the carousel?

A:
Answer 1: Yes, the Delivery sequence described in the Game Manual Part 2 Section 4.4 does not specify when the Robot is allowed to touch the Carousel.

Answer 2: A small amount of Carousel movement caused by the initial Robot contact before the start of the End Game is not starting the Delivery task early and does not invalidate the future Delivery of the "starting Duck" if the Duck is on the Carousel.

If the "starting Duck" is on the Carousel, meaningful rotation of the Carousel is starting the Delivery End Game task early and the "starting Duck" will receive zero points for entering the Playing Field via the Carousel during the End Game. "Meaningful rotation" is a judgment call by the referee. The question and answer portion of the Drivers Meeting is a good time to learn how the referee crew will make this determination at the tournament.

If the "starting Duck" is not on the Carousel, the Robot should still avoid meaningful rotational movement of the Carousel. Since the Duck or Team Shipping Element placement on the Carousel is the first step of the Delivery sequence, Carousel rotation before the Scoring Element is placed on the Carousel does not affect the future potential for earning Delivery points. Keep in mind the rule GS9f requirement that "Ducks or Team Shipping Elements on the Carousel must be in contact with the Sweeper Plate before a Robot can rotate the Carousel." The Carousel must be stationary when the Duck or Team Shipping Element is placed on the Carousel.

Answer 3: This question is addressed in Answer 2.

(Asked by 12533 answer published at --)

Q175 Follow-Up to Q170 about Legal Defense

Q:
In the end game period, suppose our robot has the TSE in our delivery arm, and at the same time, the robot has another freight in the delivery arm as well (this does not violate 1 freight control limit). When the robot extends the arm and try to do the delivery, it's not clear if it's a capping attempt or a freight delivery attempt since the robot may do either one or both. In this case, is any attempt to block the arm is illegal?

A:
During the End Game, the Drive Team's intent to Score a Possessed piece of Freight or to use their Possessed Team Shipping Element for the Capping achievement is irrelevant. Rule GS4b protections apply as soon as the Possessed Team Shipping Element is located In the outside edge of the Shipping Hub. Therefore, attempts to block the Scoring Robot's arm are illegal.

(Asked by 14179 answer published at --)
Q305 Dynamic TSE Team Numbers and Color

Q:
Per multiple other forum rulings, it is said that when modifications (such as a number change) happen to a TSE, it needs to be reinspected. A) If a team shipping element, without any additions or removals to the physical element, can change its team numbers, is reinspection needed? (EX calendar flip display) B) Same as above, but for the color of the TSE, such as to be compatible with other team's vision programs. (EX heat sensitive paint)

A:
A) The TSE must be inspected by the Team using the TSE. So if a number is changed, the Team with that number must apply for re-inspection. Remember, at many events the personnel doing morning inspection may have transitioned to new roles and may not be readily available for re-inspecting Robots, TSEs, etc. B) The color of a TSE is not subject to any Rules so a simple color change does not need to be re-inspected.

(Asked by 16750 answer published at --)

Q184 Clarification Around the Driver Station Container <DS07>

Q:
a) The driver station carrier is described as "a container to store, organize, and transport the Driver Station components." Would a pedestal to store, but also to set, our driver hub and controller on be legal? b) Can the driver station container be positioned partially within the alliance station on setup (assuming the actual driver station is still outside)? c) Can the positioning of the driver station container be changed over the course of a match?

A:
a) No, a pedestal is not allowed per Rule DS07 b) Yes, the container may be In the Driver Station providing your Alliance Partner agrees and it is not in the way of Field Personnel. c) Yes, providing no other rules are violated and it is not in the way of Field Personnel.

(Asked by 16750 answer published at --)

Traditional - Field Setup

Q214 Does the +/- 1 in tolerance apply to the height of the carousel?

Q:
Does the 1" tolerance apply to the height of the carousel?

A:
In general, yes, the 1-inch tolerance does apply to the height of the carousel. However, I call your attention to the orange box in the Game Manual that states: "The intent of the +/- 1-inch tolerance is to accommodate unintentional size and location variations that may occur. The tolerance is not an excuse for intentional or imprecise accuracy in construction or setup." So, please try to make all field specifications as close to designed as possible.
Traditional - Engineering Portfolio

Q93 New award definitions
(mentor/start/assist/advocate)

Q: Will the new definitions related to team support of other teams be added to game manual part 1 or otherwise be communicated to teams to prepare for judging? Coach saw these in judges training modules, but not yet included in GM1. Also - each level of support requires upload/printed documentation to be given to judges, but does that count against 15 pages of portfolio, or a separate item?

A: The definitions have been added to the Game Manual Part 1, both remote and traditional. The total number of pages for an engineering portfolio must not exceed 15 pages, plus a cover sheet for a total of 16 pages.

Traditional - Judges Interview

Q230 Clarification around Copyright Rules

Q: Do the copyright rules mentioned for award videos apply to sounds made by the robot and the driver station made during a match?

A: Yes. Please note the addition of rules DS08 and RS10 which do not allow team initiated sounds at any official competition.

Q238 Parody for Promote

Q: Under U.S. Copyright Law, a parody can be considered a “derivative” work protected from copyright infringement claims by the fair use doctrine. Are Parody videos that contain popular music with original lyrics allowed to be submitted for the Promote Award?

A: Teams must have rights to the music or must have permissions to use the music, and this includes parody's.

Q223 Bringing in parts to a presentation
Q: During the teams presentation to the judges, are they allowed to show parts that aren't being used on that current robot?

A: Yes.

(Asked by 4650 answer published at --)

Q204 Movie / TV References in Promote Submission

Q: We know there are copyright rules for the music as found in game manual 1, section 9.4.5. However, we can’t find information about using short clips, pictures, visual effects, etc... from movies and/or TV shows. Are there similar restrictions for these?

A: Using short clips, pictures, visual effects from movies/TV shows, would not be permitted due to possible copyright infringement issues.

(Asked by 12833 answer published at --)

Remote - The Judging Process

Q261 Audio in Control Award video

Q: Last season, audio was not allowed in the Control Award video submission. We cannot find that requirement for this season. May teams use audio, for example, use narration, in their Control Award video submissions?

A: There is nothing in the rules that prohibits a team from using audio in their Control Award submission video.

(Asked by 16011 answer published at --)

Traditional and Remote - Duplicate Q&A

Q310 Beginning Capping Too Early

Q: 1) Is it legal for a robot to pick up, and possess the TSE before endgame? 2) If the robot picks up the TSE just before endgame, and then waits to start its capping attempt until after endgame begins, is that legal? 3) What constitutes a capping attempt?

A: We believe  Q9 (/qa/9)  ,  Q109 (/qa/109)  , and  Q112 (/qa/112)  answer your questions. If they do not, please rephrase your question and resubmit.
Q281 Covering Copyrighted Music in Compass Award

Q:
In the Compass Award rules, it's stated that "teams must have permission from the copyright owner for the music used in the video" and that "music and permissions must be listed in video credits." The music that we want to use in our video was copyrighted, so we wanted to record a cover of it. Would we still need to contact the copyright owner about using the music in our video? Thank you!

A:
Please see question and answer = [Q238 (qa/238)]

Q292 Clarification to Q290 and the last part of Q282

Q:
Q290 states that "A single robot completely blocking access to one of the two warehouses" is in violation of G28. What defines completely blocking access to a warehouse and is assigned a G28 penalty? 1) Completely blocking a large amount but not all (including all in a warehouse) freight. (Q282) 2) An opposing robot fits partially inside warehouse but is blocked from fully entering. (Q290) 3) No opposing robots are trying to enter a warehouse, but all "theoretical" paths are blocked.

A:
Answer 1: We believe that [Q282 (qa/282)] and an understanding of the defined term "Block/Blocking" in the Game Manual Part 2 answers this question. Pay particular attention to the use of the term "shadow/shadowing" in the definition of Block/Blocking and in several previously answered questions in the forum.

Answer 2: See Answer #1 above. Also, the question as written contains the answer: ". . . is Blocked from fully entering." The question correctly states that the opposing Alliance Robot is Blocked.

Answer 3: Once again, carefully read the definition of "Block/Blocking" in the Game Manual Part 2. Blocking is the act of preventing an opposing Alliance Robot from accessing an Area or Game Element . . ." Blocking requires both a defensive Robot and an opposing Alliance Robot. A defensive Robot Parked in isolation without an opposing Alliance Robot attempting to access an Area or Game Element should not be Penalized for violating rule G28.

Q276 Unscored duck

Q:
May an unscored duck that was placed on the carousel for autonomous be scored in end game?

A:
We believe [Q132 (qa/132)] answers your question. If it does not, please rephrase your question and resubmit.

Answer: Yes.
Q267 Controlling the duck in the autonomous period

Q: During the autonomous period, our robot deploys two flaps before spinning the duck carousel such that the duck falls from the carousel to the floor into a box created by the flaps the robot and the side wall. The flaps don't interfere with the duck falling to the floor, but do control where the duck comes to rest after hitting the floor. Would this be in violation of <GS9> (a)?

A: We believe Q162 (/qa/162) answers your question. If it does not, please rephrase your question and resubmit.

A panel with the intended purpose of protecting the Robot from unintentionally Possessing Ducks is allowed. If the Robot's panel appears to play a part in the Drive Team's gameplay strategy, the referee will likely rule that the Duck is Controlled.

Q249 Clarification on "Supported" when Capping Team Shipping Elements

Q: Based on a previous post made on the forum, we had assumed that in order for a shipping element to be scored as capped, it must be supported by the pole of the alliance shipping hub and that the top of the pole had to be obscured by the element. We have seen several teams that have used cylinder shaped elements that end up resting on either level three of the shipping hub or the freight stacked upon it and have still gotten the capped points. We just wanted a clear decision on its legality.

A: We believe that posts Q40 (/qa/40) and Q47 (/qa/47) answer your question. If they do not, please rephrase your question and resubmit.

It should be easy for a referee that is standing outside the Playing Field to determine if a Team Shipping Element is fully Supported by the center pole when it is not touching Freight on Level #3. When a Team Shipping Element obscures the top of the center pole and contacts Freight on Level #3, we provided Team friendly guidance in Q40 (/qa/40) that a Team Shipping Element that encompasses and obscures the top portion of the Alliance Shipping Hub center pole but is not able to be fully supported by the center pole due to contact with Scored Freight should be counted as Scored.

It is highly unlikely that a Team Shipping Element that is an open cylinder (i.e., not enclosed with a top surface nor containing an inner structure to rest on the center pole) could satisfy the Capping requirements. See Q47 (/qa/47) for related guidance from the Game Design Committee.

Q245 GS5b Completely outside of the warehouse? Please Clarify
Q:
<b>GS5> b) A Robot must be Completely Outside of the Warehouse to Score Freight." means. The definition of Wearhouse is..." according to page 14 of manual 2. Then, in the same manual we find the Appendix B - playing field details image which somewhat contradicts. This seems to indicate that if a robot is on the white tape, it is still in the warehouse. So, is it an outside the exterior edge of the tape line, or to clarify is breaking the plane inside or outside the warehouse?</b>

A:
We believe Q208 (qa/208) answers your question. If it does not, please rephrase your question and resubmit.

The white tape is part of the Warehouse. A Robot that is On the White Tape is still in the Warehouse.

(Asked by 12825 answer published at --)

Q237 Can a partially delivered preplaced duck be delivered for 6 points in endgame?

Q:
The official answer to Q215 indicates that the preplaced (aka "starting") duck, if not delivered during autonomous, can be delivered (and score) in endgame. Could the preplaced duck also be delivered (and score) in endgame if it had been partially delivered (specifically, rotated part way around the carousel) during autonomous? If not, could we rotate carousel backward until it touches the driver side of the sweeper, stop the carousel, then deliver it and score?

A:
We believe Q132 (qa/132) answers your question. If it does not, please rephrase your question and resubmit.

(Asked by 8397 answer published at --)

Q228 Freight distribution followup to Q159

Q:
At out last match, our referee interpreted Q159 to mean that the freight may be placed in any configuration as long as it is contained within anywhere between 51% and 100% of the tile. Freight was consistently placed approximately 6 inches from the inner edges of the tile. Is the intent of the game to spread the freight out as evenly as possible from edge to edge within the tile, as indicated in the diagram in appendix B, or can a referee concentrate the freight in a portion of the tile?

A:
We believe Q159 (qa/159) fully answers your question on the placement of freight in the warehouse. In no documentation does it list any percentages of where the freight can be placed. The Freight should be evenly distributed within the single tile (i.e., not tightly bunched in the corner). Per Rule G12, if you believe the Playing Field is not set up correctly, you may notify the referee or field technical advisor prior to the start of the Match.

(Asked by 16597 answer published at --)
Q185 Clarification from Q177-shipping hub movement in autonomous due to 1-inch field tolerance

Q:
My previous question stated "Even accounting for the allowable 1-inch tolerance in autonomous might cause the hub to shift as much as two inches." What I meant was that if a team programmed its autonomous to work even if the alliance hub were to be placed 1 inch closer to the center of the field but it was in fact placed 1 inch closer to the alliance perimeter, then movement of the hub in autonomous would be 2 inches. Would movement of this type be exempt from a major penalty?

A:
Thank you for providing a clarification for your question in [Q177 (/qa/177)]. We believe [Q177 (/qa/177)] answers your question. The Game Design Committee deliberately does not quantify the amount of Alliance Shipping Hub displacement that changes gameplay.

Note: If your Team has unspent funds in the budget or the sensors on hand, adding distance and/or touch sensors to the front of the Robot will reduce or eliminate unwanted movement of the Alliance Shipping Hub due to Robot impact during the Autonomous Period.

(Asked by 5890 answer published at --)

Q179 Follow-Up to Q175 about Legal Defense

Q:
Answer of Q175 mentions "Rule GS4b protections apply as soon as the Possessed Team Shipping Element is located in the outside edge of the Shipping Hub". Does this mean the rule does not apply before the TSE reaches the outside edge of the shipping hub? Our robot has a long arm to do the capping far away from the hub. Is it legal for the opposing robot to block our arm before our arm/TSE reaches the hub? Is it legal to push the capping robot away from the hub before its TSE reaches the hub?

A:
We believe [Q175 (/qa/175)] and reading rule GS4b answers your question.

Rule GS4b protections apply as soon as (not before) the Possessed Team Shipping Element is located in the outside edge of the Shipping Hub. Until this condition is satisfied, the opposing Alliance may use legal defensive measures. Several examples of legal and illegal defensive strategies relating to the Alliance Shipping Hub are addressed in [Q133 (/qa/133)], [Q151 (/qa/151)], [Q170 (/qa/170)], and [Q175 (/qa/175)].

(Asked by 14179 answer published at --)

Traditional and Remote - Explore the Game Manual

Q243 Rescoring freight that was knocked off of a hub
Q:
2 situations here: a. A piece of freight is scored to your Alliance Shipping Hub and an opponent robot knocks the hub. I believe the opposing bot receives a penalty and the freight is still counted as scored, but would you be able with to pick up and re-deliver the freight that was knocked off by the opposing bot on top of the original deliver? b. Same situation except rather than an opposing bot knocking the hub, it is a bot from your alliance. Can you re-deliver & how are you penalized?

A:
The answers that you seek are found by reading section 4.5.3 and rule GS2 in the Game Manual Part 2.

Answer a: First of all, Driver-Controlled Scoring tasks are Scored at Rest. This means that the Score value of Freight is determined at the end of the Match when the entire field has come to rest after the Match ends. Therefore, the descored Freight has zero Score value if it remains on the Playing Field Floor and not in a Scoring Area.

An Alliance receives a Major Penalty for each piece of Freight it descores from an opposing Alliance Shipping Hub.

Answer b: There is no rule that prevents an Alliance from descoring Freight from their Alliance's Scoring Area or Game Element. Freight on the Playing Field Floor that is outside the Warehouses and not In the opposing Alliance's Storage Unit is eligible to be relocated to a Scoring location.

(Asked by 5356 answer published at --)

Q242 Shared Shipping Hub tipped but not fully on our teams side

Q:
Our team placed eight cubes in the Shared Shipping Hub at the End of the Match and no other rules were violated. The opposing team scored 4 cubes in the hub also. The Shared Shipping Hub tipped but "not fully on our teams side". Most of the cubes were places on one corner of our hemisphere of the shared shipping hub. How would this situation be scored? Would the number of cubes scored be taken into consideration and the bonus 20 points awarded?

A:
The answers that you seek are found by reading sections 4.5.3 and 4.5.4 of the Game Manual Part 2.

Freight is Scored at Rest. Each piece of Freight Scored Completely On the Shared Shipping Hub earns four (4) points for the Alliance that corresponds to that side of the Hub.

The Shared Shipping Hub is not contacting the Tile Floor (i.e., the Shared Shipping Hub is Balanced), therefore, neither Alliance earns the twenty (20) points for an Unbalanced Shared Shipping Hub.

(Asked by 9930 answer published at --)

Q217 Do these two situations follow warehouse operations?

Q:
We have two clarification questions about warehouse operations. 1) Our robot follows all four steps outlined under the definition in game manual 2. While placing the freight in the shared hub, a portion of the robot RE-ENTERS the warehouse. Does this receive a major or minor penalty? 2) Our bot is on the BLUE alliance. We follow warehouse operations on the RED side. While placing freight, a portion of our bot crosses into the BLUE warehouse. Does this receive a major or minor penalty?

A:
Answer 1: The Robot receives a Minor Penalty for violating rule GS5b if part of the Robot is in the Warehouse when the Freight is Scored. A Robot must be Completely Outside of the Warehouse to Score Freight.

Answer 2: First of all, the Warehouses are Alliance Neutral per the definition of Warehouse in the Game Manual Part 2 section 4.4. There is no red or blue Warehouse. The Robot receives a Minor Penalty for violating rule GS5b if part of the Robot is in the Warehouse when the Freight is Scored.

Q208 Can we have a clarification to "completely out of the warehouse"?

Q:
We have seen the phrase "completely out of the warehouse" when talking about scoring in the shared shipping hub. Would a robot that has their wheels on the barrier (in between the 2 bars) be ok to score? Is the plane considered the outside of the tape? (the plane farthest from the shipping hub).

A:
The answer that you seek is found by reading the Game Manual Part 2:

1) Section 4.4 contains the definitions of key terms: Area, Out/Outside, and Warehouse.

2) An "Area" is defined by the vertical projection of the outside edge of a region’s boundary (for example, gaffer tape, goal, Playing Field Wall). The boundary element (tape, wall, markings, etc.) is part of the Area for the purposes of determining Inside and Outside.

3) "Out" is when an object does not extend into any part of a defined Area.

4) The "Warehouse" is an Area of the Playing Field that is bounded on two sides by white tape and two sides by the Playing Field Wall. Therefore, the Barrier is Outside the Warehouse.

5) A Robot is Completely Outside of the Warehouse if no portion of the Robot is In the Warehouse.

6) A Robot is allowed to Score on the Shared Shipping Hub while it is in/on the Barrier, provided that no part of the Robot is In the Warehouse.

Q195 Scoring at rest for autonomous

Q:
The manual says that autonomous points are scored at rest; i.e. when the match ends. Won't it be difficult for the scorekeepers to remember what exactly happened during autonomous so that those tasks are entered correctly? It seems preferable to score those points at the end of the autonomous period. Is this a mistake in the manual?
A: The answer that you seek is found by reading the definition of "Scored at Rest" in section 4.4 of the Game Manual Part 2

"Scored at Rest: The achievement is considered Scored based on the position of the Robot or Scoring Element when the entire field has come to rest after the Match Period ends."

Answer: For the Autonomous Scoring achievements, the Scored at Rest Match Period is the end of the Autonomous Period.

(Asked by 1001 answer published at --)

**Q186 Is it legal to shadow you to block all paths to alliance hub?**

Q: If a robot blocks your open pipeline gap, when you try to cross barrier, that robot moves to block your path again to cross barrier, is that legal, will that get penalty? GM2 says: "Active defense played by a Robot shadowing an opposing Alliance Robot that eliminates all paths of travel between the opposing Alliance Robot and an Area or Alliance Specific Game Element or all remaining Alliance Neutral Game Elements is considered Blocking, even though at a given moment there is an open path."

A: The answer that you seek is found by reading the definition of Block/Blocking in section 4.4 and rule G28 in Game Manual Part 2.

The defensive Robot violates rule G28 because it is effectively Blocking all paths of travel to the Warehouse. Therefore, the defensive Robot will receive a Minor Penalty for every five seconds that it is in violation of the rule.

(Asked by 12611 answer published at --)

**Q170 Follow-Up to Q151 about Legal Defense**

Q: The answer to question is Q151 is it's legal to block the opposing team's delivery attempt using certain lifting mechanism. In the game introduction video (https://www.youtube.com/watch?v=I6lX12idAf8, time 6:55-7:00), it's clearly said it's illegal to block opposing team's capping attempt. So is it a right understanding that blocking capping attempt is illegal while blocking delivery attempt is legal?

A: Rule GS4 Team Shipping Constraints provides special protections for the Team Shipping Element and Capping attempts. Rule GS4b states that "Robots may not Interfere with their opposing Alliance's Capping attempts. While a Robot has a Possessed Team Shipping Element In the outside edge of the Shipping Hub, it cannot be Interfered with." This rule does not apply to Scoring Freight in a Shipping Hub.

We believe that Q151 (/qa/151) and Q133 (/qa/133) adequately address the related defensive strategies for scoring Freight in an Alliance Shipping Hub.
Note: The game animation provides an overview of gameplay and highlights a few rules. A thorough understanding of the Game Manual Parts 1 and 2 are necessary to build legal Robots and to play the game without breaking rules.

(Asked by 14179 answer published at --)

Q158 Can Team Shipping Elements be stacked prior to capping

Q:
Can Team Shipping Elements be stacked prior to capping and then capping both at once or must they be capped individually?

A:
Team Shipping Elements are required to be placed on the Alliance Shipping Hub center pole individually.

In the scenario described in the question, the Robot should receive two Penalties:

1) Rule GS8a: An immediate Minor Penalty for Possessing more than one Team Shipping element plus an additional Minor Penalty for each 5-second interval that the Robot Possesses or Controls two Team Shipping Elements.

2) Rule GS8b: A Major Penalty for Scoring a Team Shipping Element while the Robot Controls or Possesses more than the allowed quantity (2).

(Asked by 20337 answer published at --)

Q157 Partially Parked - If our Robot Arm extends over the Parking Zone

Q:
Partially is the not Completly - 1) I was warned that if our Robot Arm Extends over the Tape Boundary of say our Alliance Storage Unit (Automous), but the 18"x18" Chassis is totally in the Taped Boundry that is considered "Partially Parked". 2) If #1 is True, if our Arm Extends over the Neutral Warehouse Tape Boundry, does that count as "Partially Parked", if no part of the 18"x18" Chassis is over the Tape Boundry?

A:
The answers to your questions are found by reading the Game Manual Part 2. Start by reading the definitions of "Area" and "In (Inside) / Completely In (Completely Inside)" in section 4.4.

Next, read the Autonomous Period "Navigation" requirements in section 4.5.2 and the End Game "Parking" requirements described in section 4.54.

Answer 1: At the End of the Autonomous Period, a Robot Parked in the Storage Unit with an arm extending outside/beyond the tape boundary earns three (3) points for being "In", not "Completely In" the Storage Unit. Part of the Robot is not inside the Storage Unit Area.

Answer 2: At the End of the Match a Robot drivetrain outside the Warehouse that has an arm extended into the Warehouse boundary earns three (3) points for Parking "In" the Warehouse.

(Asked by 8487 answer published at --)