

1.1 Ship Deck

One (1) Red SHIP DECK and one (1) Blue SHIP DECK is located in the center of the FIELD, divided by the SAFETY BARRIER. Teams must stage their ROBOT onto their DECKS such that it is fully and only supported by the LOWER or UPPER DECK. The SHIP DECK consists of a PLANK, two (2) DECKS at two levels, and all relevant supporting structures.

1.1.1 Plank

The PLANK is a ramp for ROBOTS to drive from the carpet to the LOWER DECK. The PLANK is located 4 ft. (~122 cm) away from the DECK. The RAMP is 9 in. (~23 cm) high by 4 ft. (~122 cm) long by 2 ft. (~61 cm) deep. The PLANK is 4 ft. 2 in. (~127 cm) long by 4 ft. (~122 cm) wide by 0.5 in. (~1 cm) thick. The PLANK is connected by a hinge to the top end of the RAMP. The PLANK starts in a vertical position. A ROBOT must push the PLANK into the downward position to land on the LOWER DECK, allowing the ROBOT to drive onto it.

1.1.2 Deck

The DECKS are platforms ROBOTS can board to gain Points and Ranking Points.

The DECKS define the levels for scoring purposes as follows.

- The LOWER DECK is 4 ft. (~122 cm) wide by 4 ft. (~122 cm) deep. The LOWER DECK is 1 ft. 6 in. (~46 cm) high above the carpet.
- The UPPER DECK is 4 ft. (~122 cm) wide by 4 ft. (~122 cm) deep. The UPPER DECK is 9 in. (~23 cm) higher than the LOWER DECK.

The LOWER DECK has a trapezoidal cutout for the PLANK to rest on when in the downward position.

1.1.3 Safety Barrier

The SAFETY BARRIER prevents ROBOTS from falling onto the opposing Alliance's SHIP DECK. The SAFETY BARRIER is 6 ft. (183 cm) high by 8 ft. (244 cm) wide by 0.5 in. (1 cm) deep. The SAFETY BARRIER is a plexiglass sheet that divides the two (2) SHIP DECKS.

1.1.4 Guard Rail

The GUARD RAILS prevents ROBOTS from driving between the DECK and the PLANK so ROBOTS do not get crushed if the PLANK is accidentally lowered. The GUARD RAIL is 9 in. (~23 cm) high by 4 ft. (122 cm) wide by 3.5 in. (~9 cm) deep. The TOP & BOTTOM RAIL is 1.5 in. (~4 cm) high by 4 ft. (122 cm) wide by 3.5 in. (~9 cm) deep. The RAIL is a 6 in. (~15 cm) long by 1 in. (~3 cm) diameter peg that connects the BOTTOM RAIL & TOP RAIL.

1.2 Alliance Wall

The ALLIANCE WALL is a 6 ft. 6 in. (~198 cm) tall structure that separates ROBOTS from DRIVE TEAMS and consists of three (3) PLAYER STATIONS, two (2) MASTS, one (1) TREASURE ROOM, one (1) CARGO HOLD, and two (2) CARGO DEPOTS.

1.2.1 Masts & Sails

There are four (4) MASTS on the FIELD and six (6) SAILS on the FIELD. An ALLIANCE WALL will have one (1) TOPMAST and one (1) MAINMAST. The MASTS & SAILS are goals for CANNONBALLS to land in.

1.2.1.1 Mast

The MASTS are the supporting structure for the SAILS. The two (2) Red MASTS are part of the Red ALLIANCE WALL and the two (2) Blue MASTS are part of the Blue ALLIANCE WALL. The MAST is 8 ft. 6 in. (~259 cm) high by 3 in. (~8 cm) wide by 3 in. (~8 cm) deep. The MASTS are constructed of 3 in. (~8 cm) aluminum box tubing. The MAST runs in the center behind the SAILS. The TOPMAST has one (1) HIGH SAIL. The MAINMAST has one (1) LOW SAIL, and one (1) HIGH SAIL. The TOPMAST is in the center of the CARGO HOLD and the MAINMAST is on the opposite side of the ALLIANCE WALL.

1.2.1.2 Sail

The SAILS are where CANNONBALLS must score in order to decrease the opposing Alliance's Ship Health. Scoring at the LOW SAIL deals less damage, whereas scoring at the HIGH SAIL deals more damage. The SAILS are constructed of 1 in. (~2 cm) aluminum box tubing.

The LOW SAIL is a 2 ft. (~61 cm) tall 3 ft. 4 in. (~102 cm) wide rectangle on the inner perimeter of the SAIL. The inner bottom edge is 3 ft. above the carpet.

The HIGH SAIL is a trapezoid with an inner perimeter that measures 1 ft. 6 in. (~46 cm) tall with a 3 ft. (~91 cm) bottom base by a 2 ft. (~61 cm) top base. The inner bottom edge is 6 ft. 8 in. (~203 cm) above the carpet.

1.2.2 Treasure Room

The TREASURE ROOM is where GOLD must score in order to decrease the opposing Alliance's Ship Health. GOLD can also be deposited for an Alliance to purchase Gunpowder and Sail Materials to unlock LOAD or REPAIR. There are two (2) TREASURE ROOMS on the FIELD. The one (1) Red TREASURE ROOM is in the center of the Red ALLIANCE WALL and the one (1) Blue TREASURE ROOM is in the center of the Blue ALLIANCE WALL. There are two (2) TREASURE CHESTS in each TREASURE ROOM, with the TREASURE CHEST closest to the MAINSAIL for LOAD and the TREASURE CHEST closest to the TOPSAIL for REPAIR. The TREASURE CHESTS are 2 ft. (~61 cm) tall by 1 ft. 6 in. (~46 cm) wide by 2 ft. 6 in. (~76 cm) deep. The TREASURE CHESTS are 2 ft (~61 cm) apart from the center and the radius of the semicircle is 9 in (~23 cm). A centered 6 in. (~15 cm) long by 1 in (~1 cm) diameter peg extends outward at a 45-degree angle relative to the front face of the TREASURE CHEST. The peg is 1 ft. 6 in. (~41 cm) above the carpet.

1.2.2.1 Pirate's Port

The PIRATE'S PORT allows an Alliance to achieve certain advantages during the BATTLE PERIOD of the MATCH. Alliances earn Improvements by depositing GOLD in the TREASURE ROOMS to buy Gunpowder and Sail Materials. Each Improvement costs three GOLD to purchase. Each Improvement can only be activated once one (1) time by each Alliance. For example, an Alliance cannot use six (6) GOLD to activate REPAIR two (2) times. Below is the list of Improvements and the effect that is played when played.

1.2.2.2 Load More Gunpowder

If LOAD is played, the ALLIANCE doubles the damage CANNONBALLS do towards the opposing Alliance's Ship Health for ten (10) seconds.

1.2.2.3 Repair the Sails

If REPAIR is played, the ALLIANCE gains an additional twenty (20) Ship Health. However, if an ALLIANCE gets to zero (0) Ship Health, then this Improvement is no longer available for that ALLIANCE.

GOLD cannot go back into circulation. Since there is only ten GOLD on the FIELD, one ALLIANCE is able to activate two Improvements while the other ALLIANCE is only able to activate one.

1.2.3 Cargo Hold

The CARGO HOLD is where CANNONBALLS are deployed onto the FIELD. There are two (2) CARGO HOLDS on the FIELD. The one (1) Red CARGO HOLD is on the left of the Red ALLIANCE WALL and the one (1) Blue CARGO HOLD is on the left of the Blue ALLIANCE WALL. The CARGO HOLD is a 6 ft. 4 in. (~193 cm) tall by 3 ft. 10 in (~117 cm) wide structure with a 3 in (~8 cm) gap in the center.

There are two (2) Chutes on the CARGO HOLD. Chute openings are 1 ft. 6 in. (~45 cm) long by 9 in. (~22 cm) wide. The bottom edge is 2 ft. (~60) above the carpet.

The CARGO HOLD also includes four (4) Racks to store CANNONBALLS. Each Rack has the capacity for three (3) CANNONBALLS, holding up to twelve (12) CANNONBALLS. The Rack is 1 ft. 8 in. (~51 cm) wide by 7 in. (~18 cm) deep. The bottom face is 2 ft. (~60 cm) above the carpet.

1.2.4 Cargo Depot

The Cargo Depot is an area used to hold CANNONBALLS at the start of the MATCH. There are four (4) CARGO DEPOTS on the FIELD. The two (2) Red CARGO DEPOTS are in the center of Red PLAYER STATION 1 and Red PLAYER STATION 3 and the two (2) Blue CARGO DEPOTS are in the center of Blue PLAYER STATION 1 and Blue PLAYER STATION 3. A CARGO DEPOT can hold up to six (6) CANNONBALLS. The CARGO DEPOTS inside dimensions are 1 ft. 8 in. (~51 cm) wide by 1 ft. 2 in. (~36 cm) deep by 1 in. (~3 cm) tall. The CARGO DEPOT is made of 1 in. (~3 cm) by 2 in. (~5 cm) aluminum box tubing.

1.3 Hidden Treasure

The HIDDEN TREASURES are where GOLD is held on the FIELD for ROBOTS to retrieve. There are ten (10) HIDDEN TREASURES located on various parts of the FIELD. Three (3) HIDDEN TREASURES are adjacent to each FIELD BORDER, one (1) HIDDEN TREASURE is adjacent to the side of each SHIP DECK, and one (1) HIDDEN TREASURE is 8 ft. 6 in. (~259 cm) apart from each HIDDEN TREASURE adjacent to the side of each SHIP DECK. The HIDDEN TREASURE is a wedge that measures 2 ft. (~61 cm) high by 1 ft. (~31 cm) wide by 1 ft. (~31 cm) deep. Two (2) 4 in. (~15 cm) long pegs with a 1 in. (~1 cm) diameter extends outward at a 45-degree angle relative to the front-facing side. The pegs are 1 ft. 6 in. (~41 cm) high above the carpet and are 8 inches (~20 cm) apart and are centered horizontally. The wedge is shelled with a 1 in thickness for space to add weights.

1.4 Seastorm

The SEASTORM PERIOD is a fifteen (15) second period at the start of each MATCH, during which the PLAYER STATION is blocked by the SEASTORM. Teams may operate their ROBOTS autonomously, drive blind, or use visual feedback provided by the ROBOT to navigate the FIELD. The Seastorm is installed above each ALLIANCE WALL. At the end of the SEASTORM PERIOD, shutters are raised at the beginning of the BATTLE PERIOD.

2.1 Cannonball

Each CANNONBALL is a black 6 in. (~15 cm) diameter rubber playground ball with a *FIRST* logo. CANNONBALLS are used to damage the opposing Alliance's MASTS and SAILS to decrease the opposing Alliance's Ship Health.

2.2 Gold

Each GOLD is a 24 in. (~61 cm) long looped chain. It is the KOP-provided chain (EGSLC2). GOLD is scattered across the FIELD in HIDDEN TREASURES and can be deposited at the TREASURE ROOMS to earn the Alliance Improvements and to decrease the opposing Alliance's Ship Health.

3.1 Scoring

Points represent an Alliance's Ship Health, with each Alliance starting off with 200 Ship Health. Various ROBOT action subtracts from the opponent's Ship Health. The Alliance with the most Ship Health by the end of the MATCH wins. NOTE: Ship Health can go below zero (0) points to prevent a large number of ties.

Action	Criteria	SEASTORM	BATTLE
INITIATION LINE	Move off the INITIATION LINE	10	-
LOW SAIL	CANNONBALLS scored through the SAILS (points awarded according to the SAIL scored).	-	3
HIGH SAIL		-	5
TREASURE CHEST	For each GOLD placed in the TREASURE CHEST	12	10
PLANK	Each ROBOT that has climbed the SHIP DECK (points awarded according to level the ROBOT has climbed) ROBOTS must completely be completed supported by the DECK.	-	5
LOWER DECK		-	10
UPPER DECK		-	15
Holding Gold	GOLD held by a ROBOT at the end of the MATCH	-	6
0 Ship Health	Depletes the opposing Alliance Ship's Health	-	1 RP
Board	Earn at least 20 Boarding points.	-	1 RP
Tie	Completing a MATCH with the same number of points as your opponent.	-	1 RP
Win	Completing a MATCH with more points than your opponent.	-	2 RP

4.1 Additional Game Rules

Some additional game rules include in the following categories:

4.1.1 Overall

- The time limit for the MATCH will be three (3) minutes long (180 seconds).
- ROBOTS must start on the INITIATION LINE located 6 ft. (~183 cm) from the Alliance Wall. The Black INITIATION LINE is 7 ft (~213 cm) long from each FIELD BORDER.
- Each TEAM must stage their ROBOT such that at least part of its BUMPERS is intersecting the infinite vertical volume created by the corresponding ALLIANCE's INITIATION LINE.
- Before SEASTORM, ROBOTS are able to preload one (1) GOLD or three (3) CANNONBALLS.
- If ROBOTS preload GOLD, it will be removed from the closest HIDDEN TREASURE. If 2 or 3 ROBOTS preload GOLD, it will be removed from the closest HIDDEN TREASURE, second closest HIDDEN TREASURE, etc.
- At the beginning of the MATCH, a total of thirty-six (36) CANNONBALLS are on the FIELD, with six (6) CANNONBALLS in each CARGO DEPOT for a total of twenty-four (24) CANNONBALLS, and six (6) CANNONBALLS in each CARGO HOLD, for a total of twelve (12) CANNONBALLS.
- ROBOTS are allowed to carry a maximum of one (1) GOLD and three (3) CANNONBALLS at a time.
- ROBOTS are allowed to fill both TREASURE CHESTS and carry GOLD to deny the opposing Alliance access to Improvements.
- ROBOTS are allowed to climb from the side of the SHIP DECK. ROBOTS do not need to go through the PLANK and LOWER DECK to reach the UPPER DECK.

4.1.2 Seastorm (Autonomous period)

- The time limit for the SEASTORM PERIOD will be fifteen (15) seconds long.
- ROBOTS cannot cross the Center Line of the Field during SEASTORM.

4.1.3 BATTLE (Teleoperated period)

- The time limit for the BATTLE PERIOD will be two (2) minutes and fifteen (15) seconds long (135 seconds).

4.1.4 Boarding the Ship (Endgame)

- The time limit for the BOARDING THE SHIP PERIOD will be thirty (30) seconds long.

