2025 RoboCup Junior China Rules

Mini Rescue Advance
(Final)

2025RoboCup Technical Committee for RoboCup Junior China Rescue Competition

Table of Contents

1. Summary

The mission of the robot is to execute life-saving tasks in hazardous environments. The robot must navigate safely, avoid obstacles, autonomously identify three randomly placed targets (one hostage and two decoys), rescue the hostage, bypass decoys, climb a 30-degree slope (10cm height), traverse a 120×60cm platform with a 10-15cm gap, and deliver the hostage to the designated safe zone.

2. Competition Overview

The Mini Rescue Advance league is divided into middle school and elementary school divisions. On-site competition consists of two rounds per team, conducted under the published rules. The competition field layout is randomized for each round.

Single-day competition: Teams are permitted only one calibration and testing session. The field layout remains unchanged for both rounds. After completing the first round, robots are sealed and proceed directly to the second round.
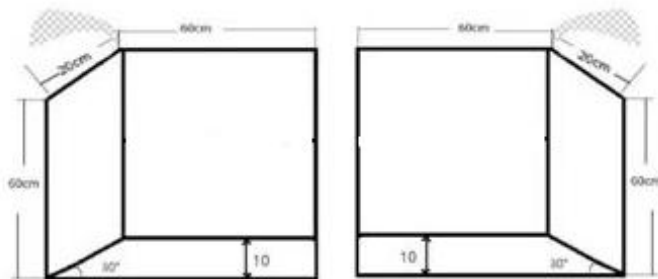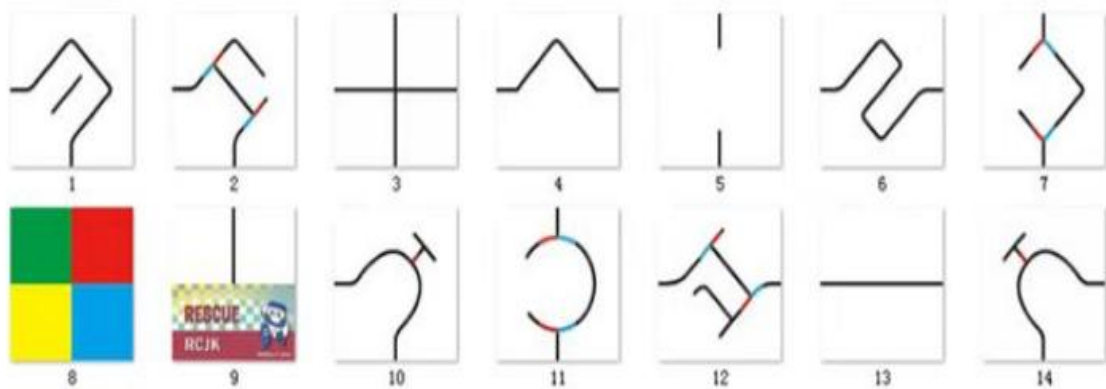
Two-day competition: Robots must be disassembled into their minimal components and rebuilt on-site. A calibration and testing period is provided, and the field layout for the second round may be adjusted based on actual conditions.

3. Competition Rules

3.1 Fields

- The field consists of interconnected, non-deforming panels forming rooms constructed from modular 60×60cm (±0.5cm) panels.

- Starting room and safe zone are fixed; other rooms are randomly arranged.

● Bidirectional Slope: 30-degree incline, 60cm width, 120×60cm platform with a 10-15cm gap is placed randomly in the field.

● Hostages/Decoys: Aluminum-wrapped cans with distinct images placed randomly on safe paths. The placement height and dimensions of the images for hostages and decoys will be released prior to the competition. The robot must autonomously identify hostages (to be rescued) and decoys (to be bypassed) using its programming and sensor-based recognition systems.

● Obstacles: Heavy aluminum-wrapped objects (e.g., 1.5-2L plastic bottles). The robot must avoid and must not make contact with obstacles. If an obstacle is found outside its designated room after the competition concludes, no points will be awarded for that room.
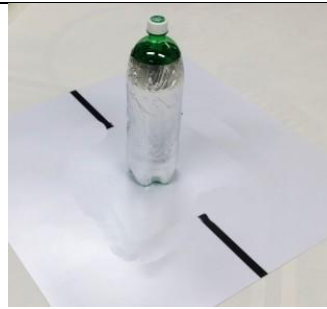
● Lines: Black (safe), red (blocked), and blue (safe) lines (1-2cm width).

● Speed Bumps: Three speed bumps(≤2cm diameter) are randomly placed on black lines in a random room per round.

● Gates: Each room has a gate with three pillars (two on the sides, one on top, (≤30cm height and ≤40cm width) . After departure, the robot must successfully pass through the gate. If the robot touches the gate, it must restart from the starting position without stopping the timer.

● Environmental Condition: Teams should ensure their robots are adaptable to venue lighting conditions. Lighting and magnetic fields may vary across the competition arena. The field will be subject to geomagnetic influences (e.g., from floor-embedded wires and metal objects). Teams should optimize their robots for ease of operation. While the organizing committee and referees will minimize the impact of external lighting variations, audience camera flashes cannot be entirely prevented.

3.2 Robot

● Dimensions: $\leqslant$40cm × 40cm × 30cm (L × W × H).

● Autonomy: Fully autonomous; remote control prohibited.

● Components:

a. 1 controller, $\leqslant$4 motors, $\leqslant$4 sensors.

b. Disassembled entry; onsite assembly

required.

    c. No pre-programmed navigation/obstacle detection modules.

- Safety: No lasers; Bluetooth 2.3 or ZigBee only for wireless communication.

- If you have questions regarding your robot's eligibility for the competition, submit the relevant technical documentation to the RCJ Rescue Committee China for verification.

3.3 Play

- Teams: Each team has a team leader, members, and coach. Parents cannot participate.

- Preparation: Practice is allowed with referee's permission. Teams must submit required programming software in advance.

- Time Limit: 4 minutes per round.

- Scoring:

a. 20 points per room traversed.

b. 50 points for slope completion; 100 points for hostage extraction; 20 points per decoy bypass

(2 in total).

c. 80 – 120 points for hostage delivery (partial/full placement in safe (green) zone).

● Penalties: 20/50/80 points per reset (max 3 resets).

● Violations:Unauthorized devices, coaching interference, or damage to the arena result in disqualification.

● Termination: Competitions end when the hostage is rescued, the robot exits the field, or the team leader requests termination.

4. Conflict Resolution

a. Final decisions rest with the Technical Committee (TC) or referees.

b. Appeals must be submitted by the team leader within 2 hours post-competition.

5. Code of Conduct

a. Teams must uphold RCJ values (fairness, respect, no external assistance).

b. Prohibits interference with other robots or the field.

c. Coaches must not enter competition areas or assist with robot repairs/programming.

d. Violations: Disqualification for disruptive behavior, cheating, or unauthorized modifications.

Mini Rescue Advance On-Site Competition
Scoring Table

<table>
<tr><td colspan="11">2025RoboCupJunior China</td></tr>
<tr><td colspan="7">Name of Team： _____</td><td colspan="2">Division：</td><td colspan="2"></td></tr>
<tr><td colspan="11">1st Round</td></tr>
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2025RoboCupJunior China										
Name of Team： _____							Division：			

1st Round

Mini Rescue Advance On-Site Competition Scoring Table										
Room Traversed 20/Room	Bidirectional Slope Completion 50	Hostage Extraction 100	Decoy Bypass (Total 2) 20/Decoy	Hostage Placement (Partial/Full) 80/120	Makes contact with obstacles or a decoy/Fails to evacuate the hostage from the room 0	RCJ Spirit 60	Number of Resets		Total	Time	Signatures of All Team Members

Signatures of Referee：

2nd Round

Mini Rescue Advance On-Site Competition Scoring Table										
Room Traversed 20/Room	Bidirectional Slope Completion 50	Hostage Extraction 100	Decoy Bypass (Total 2) 20/Decoy	Hostage Placement (Partial/Full) 80/120	Makes contact with obstacles or a decoy/Fails to evacuate the hostage from the room 0	RCJ Spirit 60	Number of Resets	Total	Time	Signatures of All Team Members

The final total score for the designated mission competition will be determined by the highest score from the two rounds.

Note: By signing this document, team members acknowledge their

acceptance of the competition results and waive the right to dispute.