



RoboCup Junior Tasmania

Guide to Dance

2006



Your task is to entertain, delight and thrill the audience. We expect your robot to be decorated and dressed to please. The challenge is intended to be as open ended as you choose to make it.

In RoboCup Junior Australia (RCJA) Dance, the challenge is to design a robot (or team of robots) to dance to music for a minimum of one minute and not more than two minutes, within a defined 3m x 3m dance floor.

This Guide is provided by Robotics Tasmania to help teams prepare for the RoboCup Junior Tasmanian (RCJT) Dance competition. It summarises, but is not intended to replace the official RCJA Dance Rules (see www.robocupjunior.org.au for more details).

Note: An asterisk (*) indicates a modification of the national RCJA rules to suit the Tasmanian competition.

The Team

Team members: Dance teams consist of human team members (in either the Junior or Senior divisions depending on their age) and any number of robots.

Junior division: Students that are 12 years of age, or under, are eligible to compete in the Junior age division.

Senior division: Students 13 to 18 years of age are eligible to compete in the Senior age division.

Captain*: Before the performance, teams should designate one human to act as 'Team Captain'.

Competing in multiple events*: Although your team is welcome to register and compete in more than one event, please be aware that finals may run concurrently. Consequently, you must have enough robots and team members to cover all events.

For example, to enter both Dance and Soccer, a team must have at least three robots and at least two human team members.

The Robot(s)

Robots: There is no limit to the number of robots used in the performance. Robots can be of any size or number of motors, microprocessors or sensors.

Construction*: Any commercial robot kit or raw hardware may be used as long as the design and

construction are substantially the original work of the student(s).

Remote control: No remote control devices, computers, mobile phones, Bluetooth devices, or IR-emitting devices apart from the robots themselves are permitted within 5 metres of the performance area. A team using a micro-processor such as an RCX may use another RCX programmed to 'mail' a specific number to their dance robot to begin their performance.

Users of other systems may be required to convince a Technical Scrutineer that a remote-starting system will not interfere with other teams' robots.

Competitors using the Lego RCX are advised to mask/shield their RCX infra-red window to prevent their program being corrupted (black electricians' tape works well). Competitors are reminded that the LEGO infra-red tower has a range of about 3m. It is the responsibility of the participants to ensure that IR power is turned to 'low' and the tower is shielded to reduce stray emissions.

Performance area

Dance floor surface: The floor of the performance area is a 3 x 3m surface of unpainted MDF.

While every effort will be made to provide a flat, smooth surface, robots should be designed to cope with edge joints and variations up to 3mm in height. Teams intending to use the standard performance area are encouraged to practice using such a surface.

Teams may provide their own floor surface for the performance area, as long as such flooring fits within the 3 x 3m boundary. This surface may be marked or decorated.

Boundary markings: The 3 x 3m dance floor will be marked on the MDF sheeting with a line of 50mm reflective aluminium foil tape. A second line of approximately 20mm tape of a contrasting colour (e.g.: red electrical tape) fitted around the immediate outside of the foil tape.

Teams are encouraged to use sensors to prevent their robot from leaving the dance area, and will lose points when a robot moves out of the marked dance floor.

The Interview

Interview: Prior to the performance, each team will be required to attend a 10-minute interview to discuss their entry. Judges will allocate points to the team based on their answers to interview questions about the development of their robots.

Teams should come to the interview prepared with their program viewable on a laptop, a record of the development of their entry such as a journal or logbook, and their robots.

Interview schedule: Teams will need to check the schedule of interview times at the venue to ensure they are ready at the interview area at the correct time.

Interview questions: Interviewers will ask the teams to describe their entry and explain the programs they have written for it. Questions will cover teamwork, problem solving and the design and development of both the robots and their programs. Points will be given for providing some form of learning journal or logbook, that shows the evolution of their entry and confirms it as being the team's own work.

The Performance

Music*: Teams are required to provide the music for their performance (as either an mp3 CD or audio CD) to the registration desk as they arrive. Teams should also keep a spare copy with them. Music must be labelled with the team name, school, and title of music.

Music must not be of a suggestive, offensive, violent, vulgar, discriminatory, or prejudicial as decided by the judges.

Preliminary round: Preliminary performances will begin with the Junior section.

Performance schedule: Teams will need to check the schedule of performance times at the venue to ensure they are ready at the dance floor at the correct time.

Starting the dance*: The Team Captain will signal to the Judges when the team is ready to begin their dance. When the Judges are also ready, the Team Captain will signal to the music desk to start.

Length of performance: The total performance time allowed per team is 6 minutes. This includes initial set-up, the dance of 1 to 2 minutes, and any restarts (see below).

Restarts: If the robot experiences a mechanical or programming malfunction, the Team Captain must request a re-start immediately by signaling clearly to the Judges.

Finals: Once the results of the preliminary rounds have been determined, finalists from each division will be invited to repeat their performances to determine the finals places.

If the performance has been going for more than one minute, no restart is permitted. No more than two restarts are allowed.

Scoring

There are two parts to the Dance competition: An Interview and the Performance, both parts contribute points to the team's score.

The Dance Performance Evaluation and Dance Interview Evaluation score sheets (available from www.robocupjunior.org.au) provide explicit details about the criteria used for scoring Dance entries and should be considered carefully in planning your entry.

Code of conduct

The aim of RoboCup Junior is to create an entertaining and educational experience that will continue into the future. To achieve this we all must create a spirit of collaboration, and not just competition. It is hoped that all entrants respect this aim.

Behaviour: All movement and behaviour at the event is to be of a subdued nature. Competitors are not to enter setup areas of other teams unless expressly invited to do so.

Mentors: Mentors are not to repair robots or be involved in programming of students' robots.

Sharing: It is an understanding of world RoboCup competitions that any technological and curricular developments should be shared with other participants after the event.

Resources and acknowledgements

RoboCup Junior Tasmania
(www.robotas.idesigns.com.au).

For the official rules, please visit the RoboCup Junior Australia web site
(www.robocupjunior.org.au).

This Guide was prepared by Bev Pasanen and Rob Torok and is based on the RoboCup Junior Australia Dance Rules 2006, last updated 18/4/2006 by RoboCup Junior Australia.