MRC GHANA 2027
CATEGORY INFORMATION SHEET

Shooting

Robotic foam-dart precision

19–20 February 2027 · Accra, Ghana · Venue to be announced

The current official H.E.R.O. rules take precedence
This sheet is a plain-English summary prepared by the MRC Ghana 2027 organisers. Always check the official rules before building or competing: https://www.he-ro.gr/mrc-shooting

Sport overview

Shooting is a precision challenge using soft foam darts. Teams design and build their own handheld launcher, controlled by a microcontroller and triggered by a button or sensor, and must program it to beep one second before each shot.

The Technician aims at three targets worth different points, first from 120 cm and then from 160 cm. The sport rewards careful mechanical design, accurate calibration and steady aim.

Competition objective

- Build a compliant, self-contained foam-dart launcher with a programmed trigger.
- Hit as many targets as possible from both distances in a single attempt.
- Maximise the best single attempt score during the session.

Age eligibility

One division; each age category competes separately.

Age category	Published ages
Kids	10 to 12 years
Teens / Senior	12+ to 18 years
Adults	18+ years — The official page lists Adults as 'only for the Advanced category'

Team requirements

- Teams of 2 to 3 members. Individual entries are not accepted.
- Each team names one Technician — the only team member allowed in the waiting and competition area. The Technician may change between attempts or matches.
- Every team member must be at least 10 years old.
- Each team needs a coach aged 20 or over. A coach must bring one assistant for every three teams they register.
- One robot per team. Robots may not be swapped during the competition or shared between teams.

Format and scoring

- Field about 2.36 × 1.14 m with a marked Technician position and a hand-rest base.
- Three targets of different weights are mounted 50 cm above the surface.
- From each distance (120 cm, then 160 cm) the Technician fires once at each target.
- Teams make repeated attempts during the session; there are no restarts within an attempt.
- Targets are worth 10, 25 and 50 points. An attempt's score is the total from both distances.
- Only each team's best single attempt counts.
- Teams who clearly cannot explain their own program lose 20% of their score.
- 1st, 2nd and 3rd place are awarded in each age category.

Robot and equipment requirements

- Home-made launcher from cardboard, light plastic, 3D-printed parts, light laser-cut wood or kit parts. No metal launchers and no ready-made toy launchers or their shells.
- Maximum size 25 × 25 cm and maximum mass 500 g.
- Must include a hub or microcontroller and a button or pressure sensor that triggers the shot, firing one dart at a time.
- Must be programmed to beep one second before firing.
- Shape and design rules apply (single grip, trigger, forward-facing outlet, rounded corners). Read the official page carefully before building.
- Standard unmodified foam darts. Referees may supply their own darts.

Preparation checklist

- [ ] Read the official design and shape rules before you start building.
- [ ] Check size (25 × 25 cm) and mass (up to 500 g); use only permitted materials.
- [ ] Program the one-second warning beep and single-dart firing.
- [ ] Practise at 120 cm and 160 cm and record your accuracy.
- [ ] Pack safety glasses and protective equipment.
- [ ] Bring a laptop with your program ready to explain to judges.

Safety notes

- Safety glasses and protective equipment are mandatory on the field — teams without them are disqualified.
- No propellant gases, chemicals, pneumatics or anything added to increase force.
- Darts must not be modified. Unsafe aiming or darts leaving the field stop the attempt.
- Teams travelling by air should pack the launcher disassembled.

Awaiting clarification

- For MRC Ghana 2027, ages are counted on 19 February 2027, the first day of the competition. The official rules do not set this date themselves, and adjacent bands share boundary ages (for example '10 to 12' and '12+'); the Ghana organising committee will confirm the category for anyone on a boundary age.
- The page requires the launcher to be 'semi-autonomous' while elsewhere referring to autonomous operation; the human Technician aims and triggers each shot.
- Adults are listed as 'only for the Advanced category', but the sport is described as having one division.

Registration guidance

- Register through the official MRC Ghana 2027 registration application: https://www.mrcghana.com/register
- Have your team name, team members, coach details and chosen sport(s) ready.
- Registration closes on 15 January 2027. Registration fees: to be announced.
- Participant information is collected only through the official registration application.
- Questions: partnerships@makersplacegh.com

Official rules and source

Official H.E.R.O. rules
https://www.he-ro.gr/mrc-shooting

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