

# WCA Regulations and Guidelines

WCA Regulations Committee

## WCA Regulations

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### Notes

#### WCA Regulations and Guidelines

The WCA Regulations contain the full set of Regulations that apply to all official competitions sanctioned by the World Cube Association.

The WCA Regulations are also supplemented by the WCA Guidelines. The Regulations should be considered a complete document, but the Guidelines contain additional clarifications and explanations.

#### Wording

To make the Regulations and Guidelines easier to read we use “he” where the reader should read “she or he”.

Uses of the words “must”, “must not”, “should”, “should not” and “may” match RFC 2119.

#### Information on the Internet

Website of World Cube Association: [www.worldcubeassociation.org](http://www.worldcubeassociation.org)

Original source of the WCA regulations: [www.worldcubeassociation.org/regulations](http://www.worldcubeassociation.org/regulations)

WCA Regulations in PDF format

#### Source

Development of the WCA Regulations and Guidelines is public on GitHub.

#### Contact

For questions and feedback, please contact the WCA Regulations Committee (WRC).

#### Contents

Note: Because Article and Regulation numbers are not reassigned when Regulations are deleted, there may be gaps in numbering.

## Article 1: Officials

- 1a) A competition must include a WCA Delegate and an organisation team (consisting of one or more individuals) with the following officials: judges, scramblers and score takers.
- 1b) The organisation team of a competition is responsible for logistics before, during, and after the competition.
- 1c) The WCA Delegate may delegate responsibilities to other members of the organisation team, but is ultimately accountable for how these responsibilities are carried out. The WCA Delegate for a competition is responsible for:
  - 1c1) Reporting to the WCA Board regarding adherence to WCA Regulations during the competition, the overall course of the competition, and any incidents. The report must be submitted to the WCA Board within one week of the end of the competition.
  - 1c3) Sending the competition results to the WCA Results Team.
    - \* 1c3a) All scramble sequences used during a competition must be sent with the results of the competition.
    - \* 1c3b) Scramble sequences must be labelled with the events, rounds, and groups for which they were used.
  - 1c4) Sending corrections to the competition results to the WCA Board.
  - 1c5) Advising the other officials where necessary.
  - 1c6) Approving all events and round formats of a competition, before the competition starts, and if changes are required during the competition.
  - 1c7) Decisions about disqualifying competitors during the competition.
  - 1c8) Providing the scramble sequences.
  - 1c9) Decisions about changes to the scheduled times of rounds. In cases of such changes, a clear announcement must be made to all competitors.
  - 1c10) Making a copy of the WCA Regulations available at the competition.
- 1e) Each event must have one or more judges.
  - 1e1) A judge is responsible for executing the procedures of the event.
    - \* 1e1a) A judge may judge multiple competitors simultaneously at the discretion of the Delegate, as long as the judge is able to ensure that all WCA Regulations are followed at all times.
  - 1e2) Every competitor must be available for judging. If he is required to judge, a competitor may be excused only for a legitimate reason (e.g. being unfamiliar with a puzzle), at the discretion of the Delegate. Penalty: disqualification from the competition (see Regulation 2k).
- 1f) Each event must have one or more scramblers. Exception: Fewest Moves Solving.
  - 1f1) A scrambler applies scramble sequences to prepare puzzles for attempts.
  - 1f2) Every competitor must be available for scrambling. If he is required to scramble, a competitor may be excused only for a legitimate reason (e.g. being unfamiliar with scrambling notation), at the discretion of the Delegate. Penalty: disqualification from the competition (see Regulation 2k).
- 1g) Each event must have one or more score takers.

- 1g1) A score taker is responsible for compiling results.
- 1g2) Any change to the result on a score sheet must be made at the discretion of the WCA Delegate.
- 1h) Competitors in the same round of an event may be divided into groups.
  - 1h1) Scramblers and judges for a round should not scramble for/judge competitors in their own group before they have finished all of their attempts for the round. They may scramble for/judge competitors in their own group at the discretion of the WCA Delegate, but the organisation team must ensure that scramblers and judges cannot see any scrambles for their attempts that they have not attempted yet.
- 1j) All officials may compete in the competition.
- 1k) Officials may serve multiple roles (e.g. organisation team, WCA Delegate, judge, score taker, scrambler).

## Article 2: Competitors

- 2a) Any person may compete in a WCA competition if he:
  - 2a1) Complies with WCA Regulations.
  - 2a2) Meets the competition requirements, which must be clearly announced before the competition.
  - 2a3) Is not suspended by WCA Board.
- 2b) Competitors below the age of 18 must obtain consent from their parent(s)/guardian(s) to register and compete.
- 2c) Competitors register by providing all information required by the organisation team (including: name, country, date of birth, gender, contact information, selected events).
  - 2c1) A competitor is not eligible to compete without a completed registration, as determined by the organisation team.
- 2d) A competitor's name, country, gender, and competition results are considered public information. All other personal information is considered confidential, and must not be disclosed to outside organisations/persons without the consent of the competitor.
- 2e) Competitors must represent a country of which they hold citizenship. The WCA Delegate should verify citizenship standing by means of documents (e.g. a passport). If a competitor is found ineligible to represent the country under which they have registered, the competitor may be disqualified retroactively and/or suspended, at the discretion of the WCA Board.
  - 2e1) The eligible countries are defined by the Wikipedia article "List of sovereign states" ("UN member states and observer states" and "Other states").
  - 2e2) Competitors with updates to their citizenship status may change their country of representation in their first competition of a calendar year.
- 2f) Competitors must obey venue rules and conduct themselves in a considerate manner.
- 2g) Competitors must remain quiet when inside the designated competition area. Talking is permitted, but must be kept at a reasonable level, and away from competitors who are actively competing.

- 2g3) Competitors in the Competitors Area must not communicate with each other about the scrambled states of the puzzles of the round in progress. Penalty: disqualification of the competitor from the event, at the discretion of the WCA Delegate.
- 2h) Competitors must be fully dressed while in the competition venue. At the discretion of the Delegate, competitors may be disqualified from the competition for inappropriate clothing.
- 2i) While competing, competitors must not use electronics or audio equipment (e.g. cell phones, MP3 players, dictaphones, additional lighting).
  - 2i1) Competitors may use certain non-electronic aids that do not give the competitor an unfair advantage, at the discretion of the WCA Delegate. This includes:
    - \* 2i1a) Medical/physical aids worn by the competitor (etc. glasses, wrist brace, hearing aids).
    - \* 2i1b) Earplugs and earmuffs (but not electronic noise-cancelling headphones).
- 2j) The WCA Delegate may disqualify a competitor from a specific event.
  - 2j1) If a competitor is disqualified from an event for any reason, he is not eligible for any more attempts in the event.
  - 2j2) If a competitor is disqualified during the course of an event, his earlier results remain valid. Exception: cheating or defrauding (see Regulation 2k2a).
- 2k) The WCA Delegate may disqualify a competitor from the competition (i.e. from all events of the competition) if the competitor:
  - 2k1) Fails to check in or register in time for the competition.
  - 2k2) Is suspected of cheating or defrauding the officials during the competition.
    - \* 2k2a) The WCA Delegate may disqualify any suspected results.
  - 2k3) Behaves in a way that is unlawful, violent or indecent; or intentionally damages venue facilities or personal property within the venue.
  - 2k4) Interferes with, or distracts others during, the competition.
  - 2k5) Fails to abide by WCA Regulations during the competition.
- 2l) A competitor may be disqualified immediately, or after a warning, depending on the nature and severity of the infraction.
  - 2l1) A disqualified competitor is not eligible for the refund of any expenses due to participating in the competition.
- 2n) Competitors may verbally dispute a ruling to the WCA Delegate.
  - 2n1) Disputes are only permitted during the competition, within 30 minutes after the disputed incident happened and before the beginning of any following rounds of the relevant event.
  - 2n2) The WCA Delegate must resolve the dispute before the beginning of the next round of the event.
  - 2n3) The competitor must accept all final rulings of the WCA Delegate. Penalty: disqualification from the competition.

- 2s) Competitors with other disabilities that may prevent them from abiding by one or more WCA Regulations may request special accommodations from the WCA Delegate. Competitors requesting such accommodations should contact the organisation team and WCA Delegate at least two weeks before the competition.
- 2t) Each competitor must be familiar with and understand the WCA Regulations before the competition.

### Article 3: Puzzles

- 3a) Competitors must provide their own puzzles for the competition.
  - 3a1) Competitors must be present and ready to compete when they are called to compete for a round. Penalty: disqualification from the event.
  - 3a2) Puzzles must be fully operational, such that normal scrambling is possible.
  - 3a3) Polyhedral puzzles must use a colour scheme with one unique colour per face in the solved state. Each puzzle variation must have moves, states, and solutions functionally identical to the original puzzle.
- 3d) Puzzles must have coloured parts, which must be one of the following: coloured stickers, coloured tiles, coloured plastic, or painted/printed colours. All coloured parts of a puzzle must be made of a similar material.
  - 3d1) Exception: Competitors with a medically documented visual disability may use textured puzzles with different textures on different faces. Textures/patterns must be uniform per face. Each face should have a distinct colour, to aid in scrambling and judging.
  - 3d2) The colours of puzzles must be solid, with one uniform colour per face. Each colour on the puzzle must be clearly distinct from the other colours.
  - 3d3) Coloured parts must not be thicker than 1.5mm. Exception: Megaminx tiles may be slightly thicker than 1.5mm, at the discretion of the Delegate.
- 3h) Modifications that enhance the basic concept of a puzzle are not permitted. Modified versions of puzzles are permitted only if the modification does not make any additional information available to the competitor (e.g. orientation or identity of pieces), compared to an unmodified version of the same puzzle.
  - 3h1) “Pillowed” puzzles are not permitted. Exception: Pillowed 7x7x7 Cubes are permitted.
  - 3h2) Puzzles whose coloured parts are visible inside the puzzle are not permitted.
  - 3h3) Any modifications to a puzzle that result in poor performance by a competitor are not grounds for additional attempts.
  - 3h4) For Clock, custom “inserts” (the same shape and size as the traditional paper inserts) are permitted, at the discretion of the WCA Delegate. The inserts must have a clear indication of 12 o’clock that matches the original inserts.
- 3j) Puzzles must be clean, and must not have any markings, elevated pieces, damage, or other differences that significantly distinguish any piece from a similar piece. Exception: a logo (see Regulation 3l).

- 3j1) Puzzles are permitted to have reasonable wear, at the discretion of the WCA Delegate.
- 3j2) Definition: Two pieces are similar to each other if they are identical in shape and size, or mirrored in shape and identical in size.
- 3j3) Corrugated/textured parts which allow the orientation of pieces to be distinguished by feel are not permitted for blindfolded events.
- 3k) Puzzles must be approved by the WCA Delegate before use in the competition.
- 3l) A puzzle may have a logo on a coloured part. If it does, it must have at most one coloured part with a logo.
  - 3l1) The logo must be placed on a center piece. Exceptions for puzzles that do not have center pieces:
    - \* 3l1a) For Pyraminx and 2x2x2, the logo may be on any piece.
    - \* 3l1b) For Square-1, the logo must be on a piece in the middle slice.
  - 3l2) The logo may be embossed, engraved, or consist of an overlay sticker. Exception: The logo must not be distinguishable by feel for blindfolded events (i.e. no embossings, engravings, or overlay stickers).
- 3m) All brands of puzzles and puzzle parts are permitted, as long as the puzzles comply with all WCA Regulations.

## Article 4: Scrambling

- 4a) A scrambler applies scramble sequences to the puzzles.
- 4b) Puzzles must be scrambled using computer-generated random scramble sequences.
  - 4b1) Generated scramble sequences must not be inspected before the competition, and must not be filtered or selected in any way by the WCA Delegate.
  - 4b2) Scramble sequences for a round must be available only to the WCA Delegate and the scramblers for the event, until the end of the round. Exception: For Fewest Moves Solving, competitors receive scrambling sequences during the round (see Article E).
  - 4b3) Specification for the scramble program: An official scramble sequence must produce a random state from those that require at least 2 moves to solve. The following additions/exceptions apply:
    - \* 4b3a) For blindfolded events, the scramble sequence must orient the puzzle randomly (equal probability for each orientation).
    - \* 4b3b) 2x2x2 Cube: The (random) state must require at least 4 moves to solve.
    - \* 4b3c) Pyraminx and Skewb: The (random) state must require at least 7 moves to solve.
    - \* 4b3d) Square-1: The (random) state must require at least 11 moves to solve.
    - \* 4b3e) 5x5x5 Cube, 6x6x6 Cube, 7x7x7 Cube, and Megaminx: sufficiently many random moves (instead of random state), at least 2 moves to solve.
- 4d) Scrambling orientation:
  - 4d1) NxNxN puzzles and Megaminx are scrambled beginning with the white face (if not possible, then the lightest face) on top and the green face (if not possible, then the darkest adjacent face) on the front.

- 4d2) Pyraminx is scrambled beginning with the yellow face (if not possible, then the lightest face) on bottom and the green face (if not possible, then the darkest adjacent face) on the front.
- 4d3) Square-1 is scrambled beginning with the darker colour on front (out of the 2 possible scrambling orientations).
- 4d4) Clock is scrambled beginning with the darker colour “insert” in front (out of the 2 possible scrambling orientations) and 12 o’clock pointing up.
- 4d5) Skewb is scrambled beginning with the white face (if not possible, then the lightest face) on top and the green face (if not possible, then the darkest adjacent face) on the front-left.
- 4f) Competition scramble sequences must be generated using the current official version of the official WCA scramble program (available via the WCA website).
- 4g) After scrambling a puzzle, the scrambler must verify that he has scrambled the puzzle correctly. If the puzzle state is wrong, he must correct it (e.g. by solving the puzzle and applying the scramble sequence again).
  - 4g1) Exception: For the 6x6x6 Cube, 7x7x7 Cube, and Megaminx, it is not necessary to correct the scramble, at the discretion of the WCA Delegate.

## Article 5: Puzzle Defects

- 5a) Examples of puzzle defects include: popped parts, pieces twisted in place, and detached screws/caps/stickers.
- 5b) If a puzzle defect occurs during an attempt, the competitor may choose to either repair the defect and continue the attempt, or to stop the attempt.
  - 5b1) If a competitor chooses to repair the puzzle, he must repair only the defective parts. Tools and/or parts of other puzzles must not be used to repair the original puzzle. Penalty: disqualification of the attempt (DNF).
  - 5b2) Any repair to a puzzle must not give the competitor any advantage in solving the puzzle. Penalty: disqualification of the attempt (DNF).
  - 5b3) Permitted repairs:
    - \* 5b3a) If any parts have fallen out or moved out of place, the competitor may place them back.
    - \* 5b3b) If, after repairing the puzzle but before the end of the attempt, the competitor finds that the puzzle is unsolvable, he may disassemble and reassemble a maximum of 4 pieces to make the puzzle solvable.
    - \* 5b3c) If the puzzle is unsolvable, and can be made solvable by rotating a single corner piece, the competitor may correct the corner piece by twisting it in place without disassembling the puzzle.
  - 5b4) During a blindfolded phase (see Regulation B4), all repairs must be performed blindfolded. Penalty: disqualification of the attempt (DNF).
  - 5b5) If at the end of the attempt some parts of the puzzle are physically detached or not fully placed, the following regulations apply:
    - \* 5b5a) If one or more parts without coloured faces is affected, the puzzle is considered solved.

- \* 5b5b) If one part with one coloured face is affected, the puzzle is considered solved.
- \* 5b5c) If more than one part with one coloured face is affected, the puzzle is considered unsolved (DNF).
- \* 5b5d) If one or more parts with more than one coloured face is affected, the puzzle is considered unsolved (DNF).
- \* 5b5e) Regulations 5b5c and 5b5d supersede 5b5a and 5b5b.

## Article 7: Environment

- 7b) Spectators must remain at least 1.5 metres away from the solving stations when they are in use.
- 7c) Lighting of the competition area must be given special attention. Lighting should be neutral, such that competitors can easily differentiate among the colours on the puzzles.
- 7e) The competition area must be smoke-free.
- 7f) Solving station:
  - 7f1) Definitions:
    - \* 7f1a) Stackmat: The Speed Stacks Stackmat timer and a full-size compatible mat.
    - \* 7f1b) Mat: The mat of the Stackmat.
    - \* 7f1c) Timer: The timer of the Stackmat, or a stopwatch (for longer attempts).
    - \* 7f1d) Surface: The flat surface on which the Stackmat has been placed. The mat is considered a part of the surface. The timer is not considered a part of the surface.
  - 7f2) The timer must be attached to the mat and placed on the surface, with the timer on the side of the mat nearest to the competitor.
    - \* 7f2a) Exception: For Solving With Feet, the Stackmat must be placed directly on the floor. The timer device may be placed on the side of the mat farthest from the competitor.
- 7h) The competition area must have a Competitors Area.
  - 7h1) The organisation team may require that a competitor who has been called to compete must remain within the Competitors Area until he has finished all of his attempts for the round.

## Article 8: Competitions

- 8a) An official WCA competition must:
  - 8a1) Be approved by the WCA Board.
  - 8a2) Follow the WCA Regulations.
  - 8a3) Have a designated WCA Delegate in attendance.
  - 8a4) Be announced on the WCA website at least two weeks before the beginning of the competition.
  - 8a6) Be publicly accessible.
  - 8a7) Use the authentic Speed Stacks Stackmat timer (Generation 2 or Pro) for time measurement.
  - 8a8) Be open to all who wish to compete. Restrictions must be approved by the WCA Board and clearly stated when the competition is announced.



- 8f) If WCA Regulations are not correctly observed during a competition, the WCA Board may disqualify affected attempts.

## Article 9: Events

- 9a) The WCA governs competitions for:
  - 9a1) Puzzles known as Rubik’s puzzles.
  - 9a2) Other puzzles that are manipulated by twisting the sides, commonly known as “twisty puzzles”.
- 9b) The official puzzles and event formats of the WCA are:
  - 9b1) Rubik’s Cube, 2x2x2 Cube, 4x4x4 Cube, 5x5x5 Cube, Clock, Megaminx, Pyraminx, Square-1, Skewb, and Rubik’s Cube: One-Handed.
    - \* 9b1a) Round formats for these events are: “Best of X” (where X is 1, 2, or 3), and “Average of 5”.
  - 9b2) Rubik’s Cube: With Feet, Rubik’s Cube: Fewest Moves, 6x6x6 Cube, and 7x7x7 Cube.
    - \* 9b2a) Round formats for these events are: “Best of X” (where X is 1 or 2) and “Mean of 3”.
  - 9b3) Rubik’s Cube: Blindfolded, 4x4x4 Cube: Blindfolded, 5x5x5 Cube: Blindfolded, and Rubik’s Cube: Multiple Blindfolded.
    - \* 9b3a) Round formats for these events are: “Best of X” (where X is 1, 2, or 3).
    - \* 9b3b) For Rubik’s Cube: Blindfolded, the WCA also recognises “Mean of 3” rankings and records based on the times from “Best of 3” rounds.
- 9f) The results of a round are measured as follows:
  - 9f1) All timed results under 10 minutes are measured and truncated to the nearest hundredth of a second. All timed averages and means under 10 minutes are measured and rounded to the nearest hundredth of a second.
  - 9f2) All timed results, averages, and means over 10 minutes are measured and rounded to the nearest second (e.g. x.4 becomes x, x.5 becomes x+1).
  - 9f4) The result of an attempt is recorded as DNF (Did Not Finish) if the attempt is disqualified or unsolved/unfinished.
  - 9f5) The result of an attempt is recorded as DNS (Did Not Start) if the competitor is eligible for an attempt but declines it.
  - 9f6) For “Best of X” rounds, each competitor is allotted X attempts. The best result of these attempts counts for the competitor’s ranking in the round.
  - 9f7) For “Best of X” rounds, a DNF or DNS is the worst possible result.
  - 9f8) For “Average of 5” rounds, competitors are allotted 5 attempts. Of these 5 attempts, the best and worst attempts are removed, and the arithmetic mean of the remaining 3 attempts counts for the competitor’s ranking in the round.
  - 9f9) For “Average of 5” rounds, one DNF or DNS is permitted to count as the competitor’s worst result of the round. If a competitor has more than one DNF and/or DNS result in the round, his average score for the round is DNF.

- 9f10) For “Mean of 3” rounds competitors are allotted 3 attempts. The arithmetic mean of the 3 attempts counts for the competitor’s ranking in the round.
- 9f11) For “Mean of 3” rounds, if the competitor has at least one DNF or DNS result, his average score for the round is DNF.
- 9f12) For “Best of X” rounds, rankings are assessed based on the best result per competitor. The following are used to compare results:
  - \* 9f12a) For timed results, “better” is defined as the shorter time.
  - \* 9f12b) For Fewest Moves Solving, “better” is defined as the shorter solution length.
  - \* 9f12c) For Multiple Blindfolded Solving, rankings are assessed based on number of puzzles solved minus the number of puzzles not solved, where a greater difference is better. If the difference is less than 0, or if only 1 puzzle is solved, the attempt is considered unsolved (DNF). If competitors achieve the same result, rankings are assessed based on total time, where the shorter recorded time is better. If competitors achieve the same result and the same time, rankings are assessed based on the number of puzzles the competitors failed to solve, where fewer unsolved puzzles is better.
- 9f13) For “Mean of 3” and “Average of 5” rounds, rankings are assessed based on the ordering of the averages/means of the competitors, where “better” is the shorter recorded time.
- 9f14) For “Mean of 3” and “Average of 5” rounds, if two or more competitors achieve identical average/mean results, rankings are assessed based on the best attempt per competitor, where “better” is defined as the shorter time.
- 9f15) Competitors who achieve the same result in a round receive an identical ranking for the round.
- 9g) A Combined Round consists of two phases of attempts, where competitors advance to the second phase if they meet a designated cutoff during the first phase.
  - 9g2) Whether a competitor proceeds to next phase of a Combined round, must be decided by ranking (best x competitors) or by result (all competitors with a best result under x) of the first phase.
- 9i) Results of official WCA competitions must be listed on the WCA world rankings.
  - 9i1) The WCA recognises the following types of regional records: national records, continental records, and world records.
  - 9i2) All the results of a round are considered to take place on the last calendar date of the round. If a regional record is broken multiple times on the same calendar date, only the best result is recognised as breaking that regional record.
  - 9i3) If the WCA Regulations for an event are changed, existing regional records stand until they are broken under the new WCA Regulations.
- 9j) Each event must be held at most once per competition.
- 9k) All competitors may participate in all events of a competition, except in cases specifically approved by the Board.
- 9l) Each round must be completed before any following round of the same event starts.
- 9m) Events must have at most four rounds.
  - 9m1) Events with 99 or fewer competitors must have at most three rounds.

- 9m2) Events with 15 or fewer competitors must have at most two rounds.
- 9m3) Events with 7 or fewer competitors must have at most one round.
- 9o) Combined rounds count as one round when counting the number of rounds per event.
- 9p) If an event has multiple rounds, then:
  - 9p1) At least 25% of competitors must be eliminated between consecutive rounds of the same event.
  - 9p2) The competitors who advance to the next round must be determined by either a cutoff ranking or a cutoff time in the preceding elimination round.
  - 9p3) If a qualifying competitor withdraws from a round, he may be replaced by the best-ranked competitor below the cutoff from the preceding round.
- 9s) Each round of each event must have a time limit (see Regulation A1a).

## Article 10: Solved State

- 10b) Only the resting state of the puzzle, after the timer has been stopped, is considered.
- 10c) The puzzle may be in any orientation at the end of the attempt.
- 10d) All parts of a puzzle must be fully attached to the puzzle in their required positions. Exception: see Regulation 5b5.
- 10e) A puzzle is solved when all coloured parts are reassembled and all parts are aligned within the limits specified below:
  - 10e1) For each two adjacent parts (e.g. two parallel, adjacent slices of a cube) of the puzzle that are misaligned more than the limit described in Regulation 10f, the puzzle is considered to require one additional move to solve (see “Outer Block Turn Metric” in Article 12).
  - 10e2) If no further moves are required to bring the puzzle to its solved state, the puzzle is considered solved without penalty.
  - 10e3) If one move is required, the puzzle is be considered solved with a time penalty (+2 seconds).
  - 10e4) If more than one move is required, the puzzle is considered unsolved (DNF).
- 10f) Limits of acceptable misalignment for puzzles:
  - 10f1)  $N \times N \times N$  puzzles: at most 45 degrees.
  - 10f2) Megaminx: at most 36 degrees.
  - 10f3) Pyraminx and Skewb: at most 60 degrees.
  - 10f4) Square-1: at most 45 degrees (U/D) or 90 degrees (/).
- 10h) Puzzles not specified in this article are judged according to the solved state as defined by the generally accepted goal of the puzzle, applying the relevant regulations for the Rubik’s Cube.
  - 10h1) The solved state of Clock is when all eighteen inner clock faces point to 12 o’clock.

## Article 11: Incidents

- 11a) Incidents include:
  - 11a1) Incorrect execution of event procedures, by officials or competitors.
  - 11a2) Interference or facility interruptions (e.g. power failure, emergency alarm activation).
  - 11a3) Equipment malfunction.
- 11b) If an incident occurs, the WCA Delegate determines an impartial and appropriate course of action.
- 11d) If the WCA Regulations are not fully clear or if the incident is not covered by the WCA Regulations, then the WCA Delegate must make his decision based on fair sportsmanship.
- 11e) If an incident occurs during an attempt, the WCA Delegate may award a competitor an extra attempt, replacing the attempt during which the incident occurred. The competitor must appeal verbally or in writing to the judge and WCA Delegate at the time of the incident, before finishing the original attempt, to be eligible for an extra attempt. An appeal does not guarantee the competitor an extra attempt.
  - 11e1) If a competitor is awarded an extra attempt, the extra attempt must be scrambled using a different scramble sequence. This scramble sequence must be generated using the current official version of the official WCA scramble program (see Regulation 4f).
- 11f) Decisions about an incident may be supported with video or photographic analysis, at the discretion of the WCA Delegate.

## Article 12: Notation

- 12a) Notation for all  $N \times N \times N$  puzzles:
  - 12a1) Face Moves:
    - \* 12a1a) Clockwise, 90 degrees: F (front face), B (back face), R (right face), L (left face), U (upper face), D (bottom face).
    - \* 12a1b) Anti-clockwise, 90 degrees: F', B', R', L', U', D'.
    - \* 12a1c) 180 degrees: F<sup>2</sup>, B<sup>2</sup>, R<sup>2</sup>, L<sup>2</sup>, U<sup>2</sup>, D<sup>2</sup>.
  - 12a2) Outer Block Moves (outer slice plus adjacent inner slices; n is defined as total number of slices to move; n may be omitted for two slices):
    - \* 12a2a) Clockwise, 90 degrees: nFw, nBw, nRw, nLw, nUw, nDw.
    - \* 12a2b) Anti-clockwise, 90 degrees: nFw', nBw', nRw', nLw', nUw', nDw'.
    - \* 12a2c) 180 degrees: nFw<sup>2</sup>, nBw<sup>2</sup>, nRw<sup>2</sup>, nLw<sup>2</sup>, nUw<sup>2</sup>, nDw<sup>2</sup>.
  - 12a3) Outer Block Turn Metric (OBTM) is defined as:
    - \* 12a3a) Each move of the categories Face Moves and Outer Block Moves is counted as 1 move.
    - \* 12a3b) Each rotation is counted as 0 moves.
- 12b) Rotations for all  $N \times N \times N$  puzzles:
  - 12b1) Clockwise, 90 degrees: [f] or z, [b] or z', [r] or x, [l] or x', [u] or y, [d] or y'.

- 12b2) Anti-clockwise, 90 degrees: [f'] or z', [b'] or z, [r'] or x', [l'] or x, [u'] or y', [d'] or y.
- 12b3) 180 degrees: [f2] or z2, [b2] or z2, [r2] or x2, [l2] or x2, [u2] or y2, [d2] or y2.
- 12c) Notation for Square-1:
  - 12c1) Moves are applied with the smallest slice of the middle layer on left side of front face.
  - 12c2) (x, y) means: turn upper layer x times 30 degrees clockwise, turn bottom layer y times 30 degrees clockwise.
  - 12c3) “/” means: turn the right half of the puzzle 180 degrees.
- 12d) Notation for Megaminx (scrambling notation only):
  - 12d1) Face Moves:
    - \* 12d1a) Clockwise, 72 degrees: U (upper face).
    - \* 12d1b) Anti-clockwise, 72 degrees: U' (upper face).
  - 12d2) Other moves are applied while keeping 3 pieces fixed at top left of the puzzle:
    - \* 12d2c) Clockwise 144 degrees move of whole puzzle except for the slice of top left three pieces: R++ (vertical slices), D++ (horizontal slices).
    - \* 12d2d) Anti-clockwise 144 degrees move of whole puzzle except for the slice of top left three pieces: R-- (vertical slices), D-- (horizontal slices).
- 12e) Notation for Pyraminx:
  - 12e1) The puzzle is oriented with the bottom face completely horizontal and the front face facing the person who holds the Pyraminx.
  - 12e2) Clockwise, 120 degrees: U (upper 2 layers), L (left 2 layers), R (right 2 layers), B (back 2 layers), u (upper vertex), l (left vertex), r (right vertex), b (back vertex).
  - 12e3) Anti-clockwise, 120 degrees: U' (upper 2 layers), L' (left 2 layers), R' (right 2 layers), B' (back 2 layers), u' (upper vertex), l' (left vertex), r' (right vertex), b' (back vertex).
- 12g) Notation for Clock:
  - 12g1) The puzzle is oriented with 12 o'clock on top, and either side in front.
  - 12g2) Move pins up: UR (top-right), DR (bottom-right), DL (bottom-left), UL (top-left), U (both top), R (both right), D (both bottom), L (both left), ALL (all).
  - 12g3) Turn a wheel next to an up-position pin and move all pins down afterwards: x+ (x clockwise turns), x- (x anti-clockwise turns).
  - 12g4) Turn around the puzzle so that 12 o'clock stays on top, and then move all pins down: y2.
- 12h) Notation for Skewb:
  - 12h1) The puzzle is oriented with three faces fully visible, where the upper face is on top.
  - 12h2) Clockwise, 120 degrees: R (the layer around the farthest visible bottom-right vertex), U (the layer around the farthest visible upper vertex), L (the layer around the farthest visible bottom-left vertex), B (the layer around the farthest non-visible back vertex).

- 12h3) Anti-clockwise, 120 degrees: R' (the layer around the farthest visible bottom-right vertex), U' (the layer around the farthest visible upper vertex), L' (the layer around the farthest visible bottom-left vertex), B' (the layer around the farthest non-visible back vertex).

## Article A: Speed Solving

- A1) Speed Solving attempts must abide by the following procedures.
  - A1a) The organisation team may enforce time limits for solves and/or rounds.
    - \* A1a1) The default time limit per solve is 10 minutes, though the organisation team may announce a higher or lower time limit.
    - \* A1a2) Cumulative time limits may be enforced (e.g. 3 solves with a cumulative time limit of 20 minutes). The time elapsed in a DNF result counts towards the cumulative time limit.
    - \* A1a3) For each round, any time limits must be announced before the round starts, and should not be changed after it has begun. Changes must be made at the discretion of the WCA Delegate, who must carefully consider the fairness of the change.
    - \* A1a4) The competitor must end each solve within the time limit. If a competitor reaches the time limit for a solve/round, the judge stops the attempt immediately and records the result as DNF. Exception: Multiple Blindfolded Solving (see Regulation H1b1).
    - \* A1a5) A solve is considered to meet the time limit if and only if the final result, after any time penalties are applied, is less than the time limit. Exception: Multiple Blindfolded Solving (see Regulation H1b1).
  - A1b) If the time limit for a solve is greater than 10 minutes, a stopwatch must be used for timekeeping.
    - \* A1b1) For events with inspection, a Stackmat timer must be used in addition to the stopwatch. For events without inspection where the competitor is expected to exceed 10 minutes, use of the Stackmat timer is optional.
    - \* A1b2) If a time from the Stackmat timer is available, it is the original recorded time. Otherwise, the stopwatch time is the original recorded time.
  - A1c) A competitor participating in an event must be able to fulfill the event's requirements (e.g. know how to solve the puzzle). A competitor competing with expectation of a DNF result may be disqualified from the event, at the discretion of the WCA Delegate.
- A2) Scrambling:
  - A2a) When called for a round, the competitor submits his puzzle, in its solved state, to the scrambler and waits in the Competitors Area until he is called to compete.
  - A2b) A scrambler scrambles the puzzle according to the regulations in Article 4.
  - A2c) After the scrambler starts scrambling the puzzle, the competitor must not see the puzzle until the inspection phase starts.
    - \* A2c1) The scrambler places a cover over the scrambled puzzle that makes it impossible for any competitors or spectators to see any part of the puzzle. The cover remains over the puzzle until the beginning of the attempt.

- A2d) When taking a puzzle from the scrambler, the judge briefly inspects the puzzle to ensure thorough scrambling of the puzzle. The judge raises any concerns with the scrambler, who then conducts a detailed check.
- A2e) The judge places the puzzle onto the mat in an arbitrary orientation while ensuring that it remains completely covered.
  - \* A2e1) The competitor is not permitted to request a specific orientation, and the judge must not influence the orientation he places the puzzle on the mat based on what he knows or expects the puzzle state to be.
- A3) Inspection:
  - A3a) The competitor may inspect the puzzle at the beginning of each attempt.
    - \* A3a1) The competitor is allotted a maximum of 15 seconds to inspect the puzzle and start the solve.
  - A3b) The judge prepares the timer by turning it on and resetting if necessary. Separately, the judge also prepares a stopwatch for timing inspection.
    - \* A3b1) When the judge believes the competitor is ready, he asks “READY?”. The competitor must be ready to start the attempt within one minute of being called, else he forfeits his attempt (DNS), at the discretion of the judge.
    - \* A3b2) The competitor begins the attempt by confirming his readiness, and the judge uncovers the puzzle and begins timing the inspection.
  - A3c) The competitor may pick up the puzzle during inspection.
    - \* A3c1) The competitor must not apply moves during inspection. Penalty: disqualification of the attempt (DNF).
    - \* A3c2) If the parts of the puzzle are not fully aligned, then the competitor may align the faces, as long as misalignments stay within the limits of Regulation 10f.
    - \* A3c3) The competitor may reset the timer before he starts the solve.
  - A3d) At the end of the inspection, the competitor places the puzzle on the mat, in any orientation.
    - \* A3d1) The puzzle must not rest on the timer. Penalty: time penalty (+2 seconds).
    - \* A3d2) When 8 seconds of inspection have elapsed, the judge calls “8 SECONDS”.
    - \* A3d3) When 12 seconds of inspection have elapsed, the judge calls “12 SECONDS”.
- A4) Starting the solve:
  - A4b) The competitor places his hands on the elevated sensor unit of the timer. His fingers must be touching the sensors with palms down. Penalty: time penalty (+2 seconds).
    - \* A4b1) The competitor must have no physical contact with the puzzle between the inspection period and the beginning of the solve. Penalty: time penalty (+2 seconds).
  - A4d) If a Stackmat timer is in use, the competitor starts the solve by confirming that the timer light is green and then removing his hands from the timer (thus starting the timer).
    - \* A4d1) The competitor must start the solve within 15 seconds of the beginning of the inspection. Penalty: time penalty (+2 seconds).

- \* A4d2) The competitor must start the solve within 17 seconds of the beginning of the inspection. Penalty: disqualification of the attempt (DNF).
- \* A4d3) If a stopwatch is in use, the judge starts the stopwatch as soon as the competitor starts the solve.
- A4e) Time penalties for starting the solve are cumulative.
- A5) During the solve:
  - A5a) While inspecting or solving the puzzle, the competitor must not communicate with anyone other than the judge. Penalty: disqualification of the attempt (DNF).
  - A5b) While inspecting or solving the puzzle, the competitor must not receive assistance from anyone or any object other than the surface (also see Regulation 2i). Penalty: disqualification of the attempt (DNF).
- A6) Stopping the solve:
  - A6a) The competitor stops the solve by releasing the puzzle and then stopping the timer. If a stopwatch is in use, the judge stops the stopwatch as soon as the competitor does this.
    - \* A6a1) When using a stopwatch as the only timer, the competitor ends the solve by releasing the puzzle and notifying the judge that he has stopped the solve. The judge stops the stopwatch as soon as the competitor does this.
    - \* A6a2) When using a stopwatch as the only timer, the competitor's default notification signal consists of releasing the puzzle(s) in his hand and placing his hands on the surface, with palms down. The competitor and the judge may agree on another appropriate notification before the beginning of the attempt.
  - A6b) The competitor is responsible for stopping the Stackmat timer correctly.
    - \* A6b1) If the timer stops before the end of the solve and the timer shows a time strictly below 0.06 seconds, then the attempt is replaced by an extra attempt. A competitor forfeits his right to the additional attempt if the WCA Delegate determines that the timer was stopped deliberately.
    - \* A6b2) If the timer stops before the end of the solve and displays a time of 0.06 seconds or higher, then the attempt is disqualified (DNF). Exception: if the competitor can demonstrate that the timer malfunctioned, he may receive an extra attempt, at the WCA Delegate's discretion.
  - A6c) The competitor must fully release the puzzle before stopping the solve. Penalty: time penalty (+2 seconds).
  - A6d) The competitor must stop the timer using both hands, placed flat on the sensors with palms down. Penalty: time penalty (+2 seconds).
  - A6e) The competitor must not touch or move the puzzle until the judge has inspected the puzzle. Penalty: disqualification of the attempt (DNF). Exception: If no moves have been applied, a time penalty (+2 seconds) may be assigned instead, at the discretion of the judge.
  - A6f) The competitor must not reset the timer until the judge has recorded the result on the score sheet. Penalty: disqualification of the attempt (DNF), at the discretion of the judge.
  - A6g) The judge determines whether the puzzle is solved. He must not make moves or align faces when examining the puzzle.



- A6h) In case of a dispute, moves or alignments must not be applied to the puzzle before the dispute is resolved.
- A6i) Time penalties for stopping the solve are cumulative.
- A7) Recording results:
  - A7a) The judge tells the competitor the result.
    - \* A7a1) If the judge finds that the puzzle is solved, he calls “OKAY”.
    - \* A7a2) If the judge assigns any penalties, the judge calls “PENALTY”.
    - \* A7a3) If the result is DNF, the judge calls “DNF”.
  - A7b) The judge records the result on a score sheet.
    - \* A7b1) If penalties are assigned, the judge records the original recorded result displayed on the timer, along with any penalties. The format should be “X + T + Y = F”, where X represents the sum of time penalties before/starting the solve, T represents the time displayed on the timer (the “original recorded time”), Y represents a sum of time penalties during/after the solve, and F represents the final result. If X and/or Y is 0, the 0 terms are omitted (e.g.  $2 + 17.65 + 2 = 21.65$ , or  $17.65 + 2 = 19.65$ ).
  - A7c) The judge and competitor must each check the recorded result, and sign (or initial) the score sheet to acknowledge that the result is correct, complete, properly formatted, and clearly readable. This finishes the attempt.
    - \* A7c1) If the competitor or the judge refuses to accept and sign the score sheet, the WCA Delegate must resolve the dispute.
    - \* A7c2) The competitor must not sign an attempt on the score sheet before the judge has recorded the final result for that attempt. If a competitor signs (or otherwise marks) an attempt before he has begun it, or before the judge has finished recording the result, he forfeits the attempt and the result will be considered DNS.
  - A7f) When a competitor’s score sheet for a round is complete, the judge delivers the score sheet to the score taker.

## Article B: Blindfolded Solving

- B1) Standard speed solving procedures are followed, as described in Article A (Speed Solving). Additional regulations that supersede the corresponding procedures in Article A are described below.
  - B1a) There is no inspection period.
  - B1b) The competitor supplies his own blindfold.
- B2) Starting the attempt:
  - B2a) The judge resets the timer(s) and asks “READY?” as in Regulation A3b1. The competitor must be ready to start the attempt within one minute of being called, else he forfeits his attempt (DNS), at the discretion of the judge.
  - B2b) The competitor places his hands on the elevated sensor unit of the Stackmat. His fingers must be touching the sensors with palms down. Penalty: time penalty (+2 seconds).

- B2c) The competitor must have no physical contact with the puzzle before the beginning of the attempt. Penalty: time penalty (+2 seconds).
- B2d) The competitor starts the attempt by removing his hands from the timer, thus starting the timer. (This also starts the solve.)
  - \* B2d1) The competitor removes the cover from the puzzle after starting the timer.
- B2e) If a stopwatch is in use in addition to a Stackmat timer, the judge starts the stopwatch as soon as the competitor starts the solve.
- B2f) If a stopwatch is in use as the only timer, the competitor places his hands on the table (instead of a Stackmat timer). After the competitor confirms his readiness, he starts the solve by lifting the cover. The judge starts the stopwatch as soon as the competitor starts the solve.
- B3) Memorisation phase:
  - B3a) The competitor may pick up the puzzle during the memorisation phase.
  - B3b) The competitor must not make physical notes. Penalty: disqualification of the attempt (DNF).
  - B3c) The competitor must not apply moves to the puzzle during the memorisation phase. Penalty: disqualification of the attempt (DNF).
- B4) Blindfolded phase:
  - B4a) The competitor dons the blindfold to start the blindfolded phase.
  - B4b) The competitor must not apply moves to the puzzle before he has fully donned the blindfold. Penalty: disqualification of the attempt (DNF).
  - B4c) The judge must ensure that there is an opaque object between the competitor's face and the puzzle while the competitor is solving.
    - \* B4c1) In all cases, the competitor must wear the blindfold such that his view of the puzzle would still be clearly blocked if the opaque object were not in the way.
    - \* B4c2) By default, the judge should place the object (e.g. a sheet of paper or cardboard) between the competitor and the puzzle while the competitor is wearing the blindfold.
    - \* B4c3) If the judge and competitor agree beforehand, the competitor may choose to place the puzzle behind a suitable object (e.g. a music stand, the surface of the table) by himself during the blindfolded phase.
  - B4d) The competitor must not look at the puzzle at any point during the blindfolded phase. Penalty: disqualification of the attempt (DNF).
  - B4e) Until he applies the first move to the puzzle, the competitor may remove the blindfold to return to the memorisation phase.
- B5) Stopping the solve:
  - B5a) When using the Stackmat, the competitor stops the attempt by releasing the puzzle and then stopping the timer.
  - B5b) When using a stopwatch, the competitor ends the attempt by placing the puzzle back onto the surface and notifying the judge that he is stopping the attempt. At that moment, the judge stops the timer.

- B5c) If he is not touching the puzzle, the competitor may remove the blindfold before he stops the timer. He must not touch the puzzle until the end of the attempt. Penalty: disqualification of the attempt (DNF).

## Article C: One-Handed Solving

- C1) Standard speed solving procedures are followed, as described in Article A (Speed Solving). Additional regulations that supersede the corresponding procedures in Article A are described below.
  - C1b) During the solve, the competitor must use only one hand to touch the puzzle. Penalty: disqualification of the attempt (DNF).
    - \* C1b2) If a puzzle defect occurs, and the competitor chooses to repair it, he must repair it using only the solving hand. Penalty: disqualification of the attempt (DNF).
    - \* C1b3) If a puzzle defect occurs, and parts of the puzzle briefly come in contact with other body parts without the competitor's intention, this is not considered touching the puzzle, at the discretion of the judge.
  - C1c) During the solve, once a competitor touches the puzzle with one hand, he must not touch the puzzle with the other hand. Penalty: disqualification of the attempt (DNF).

## Article D: Solving With Feet

- D1) Standard speed solving procedures are followed, as described in Article A (Speed Solving). Additional regulations that supersede the corresponding procedures in Article A are described below.
  - D1a) During the attempt, the competitor must sit in a chair, sit on the surface, or stand.
  - D1b) During the attempt, the competitor must only use his feet and the surface. Penalty: disqualification of the attempt (DNF).
- D3) Starting the solve:
  - D3a) The competitor places his feet onto the timer sensors.
  - D3b) The competitor removes his feet from the timer sensors to start the solve.
- D4) Stopping the solve:
  - D4a) The competitor stops the timer by placing his feet onto the timer sensors.

## Article E: Fewest Moves Solving

- E2) Procedure for Fewest Moves Solving:
  - E2a) The judge distributes a scramble sequence to all competitors. The judge then starts the stopwatch and calls "GO".
  - E2b) All competitors have a total time limit of 60 minutes to devise a solution.
    - \* E2b1) The judge should call "5 MINUTES REMAINING" at 55 minutes, and must call "STOP" at 60 minutes.

- E2c) At 60 minutes, each competitor must give the judge a legibly written solution with the competitor’s name, using the notation defined for Outer Block Turn Metric (described in Regulation 12a). Penalty: disqualification of the attempt (DNF).
- E2d) The length of the solution is calculated in Outer Block Turn Metric (see Regulation 12a).
  - \* E2d1) The competitor is permitted a maximum solution length of 80 (moves and rotations).
- E2e) The competitor’s solution must not be directly derived from any part of the scrambling algorithm. Penalty: disqualification of the attempt (DNF).
  - \* E2e1) The WCA Delegate may ask the competitor to explain the purpose of each move in his solution, irrespective of scrambling algorithm. If the competitor cannot give a valid explanation, the attempt is disqualified (DNF).
- E3) The competitor may use the following objects during the attempt. Penalty for using unauthorised objects: disqualification of the attempt (DNF).
  - E3a) Paper and pens (both supplied by judge).
  - E3b) Rubik’s Cubes (at most 3, self-supplied).
  - E3c) Coloured stickers (self-supplied).

## Article F: Clock Solving

- F1) Standard speed solving procedures are followed, as described in Article A (Speed Solving). Additional regulations that supersede the corresponding procedures in Article A are described below.
- F2) The judge places the scrambled puzzle onto the mat in a standing position.
- F3) At the end of the inspection period, the competitor places the puzzle onto the mat in a standing position. He must not change the positions of any pins from their scrambled positions before the beginning of the solve. Penalty: disqualification of the attempt (DNF).

## Article H: Multiple Blindfolded Solving

- H1) Standard blindfolded solving procedures are followed, as described in Article B (Blindfolded Solving). Additional regulations that supersede the corresponding procedures in Article B are described below.
  - H1a) Before an attempt, the competitor must submit to the organisation team the number of puzzles (at least 2) he wishes to attempt.
    - \* H1a1) A competitor is not permitted to change the number of puzzles after submitting his number to the organisation team.
    - \* H1a2) A competitor may request to keep his submission private until all competitors have submitted their numbers. Once all competitors have reported their numbers, the information becomes public (e.g. a competitor may ask for the numbers of any other competitors before starting his attempt).
  - H1b) If he is attempting fewer than 6 puzzles, the competitor is allotted a time limit of 10 minutes times the number of puzzles in the attempt, else the time limit is 60 minutes.

- \* H1b1) The competitor may signal the end of the attempt at any time. If and when the time limit is reached, the judge stops the attempt and the attempt is then scored; the time limit for the attempt counts as the original recorded time.
- H1d) Time penalties for the puzzles of the attempt are cumulative.

## Article Z: Optional Regulations

Organisation teams may adopt optional regulations to facilitate the administration of the competition. The WCA Board must approve any optional regulations for a competition.

- Z1) The organisation team may require competitors to submit puzzles during registration.
- Z2) The organisation team may limit the number of events per competitor.
- Z3) The organisation team may select competitors who directly qualify for certain rounds of certain events based on the results of specific previous competitions.
- Z4) The organisation team may limit the number of competitors per event, on either a “first come first serve” basis or based upon qualification times or rankings in the WCA world rankings of a previously announced calendar date.
- Z5) The organisation team may prohibit competitors from participating in specific combinations of events.

# WCA Guidelines

Version: April 3, 2014

## Notes

### WCA Regulations

The WCA Guidelines supplement the WCA Regulations. Please see the Regulations for more information about the WCA.

### Numbering

Guidelines are numbered in correspondence with related regulations. Note that multiple Guidelines may correspond to the same Regulation, and some Guidelines correspond to Regulations that do not exist anymore.

### Labels

To be more informative, each Guideline is classified using one of the following labels. Note that this should be treated as metadata, not as a description of importance.

- [ADDITION] Additional information to supplement the Regulations.
- [CLARIFICATION] Information to address any possible questions about interpretation of the Regulations.
- [EXPLANATION] Information that clarifies the intent of Regulations.
- [RECOMMENDATION] Something that is not strictly mandatory, but that should be done if possible.
- [REMINDER] Information that may be addressed other Regulations/Guideline, but whose relevance is worth reiterating.
- [EXAMPLE] An example of how to apply a Regulation.

## Contents

### Article 1: Officials

- 1c3+) [RECOMMENDATION] Results should be ready at the end of the last day of competition.
- 1c3++) [ADDITION] Physical records (e.g. score cards, written solutions from Fewest Moves Solving) must be retained for a minimum of one month. Digital records (e.g. scramble sequences, results) must be retained permanently.
- 1c3b+) [CLARIFICATION] If there are multiple groups, it is not necessary to identify which competitor was in which groups.
- 1c4+) [RECOMMENDATION] Corrections to the results should be available within one week of the competition date.
- 1c10+) [CLARIFICATION] It is sufficient to ensure access to a digital copy of the Regulations.

- 1h+) [RECOMMENDATION] Competitors in the same group should use the same scramble sequences. Different groups should use different scramble sequences.
- 1h++) [RECOMMENDATION] All final rounds of all events, as well as all Fewest Moves Solving rounds, should have the same scrambles for all competitors (i.e. only 1 group).
- 1h1+) [CLARIFICATION] Scramblers/judges should only scramble for/judge other competitors in the same group only if it is important for competition logistics.

## Article 2: Competitors

- 2c+) [ADDITION] First-time competitors should register using their legal name. They may register using a reasonable nickname, at the discretion of the WCA Delegate.
- 2c++) [ADDITION] Competitors must not provide intentionally misleading information, and returning competitors should provide information consistent with past information (e.g. exact name and WCA ID).
- 2d+) [ADDITION] Date of birth and contact information should be especially secured.
- 2d++) [RECOMMENDATION] If a third party (e.g. journalist) asks the organisation team to be put in contact with any competitor(s), the competitor(s) should first be asked for consent.
- 2h+) [CLARIFICATION] Competitors may be barefoot for Solving With Feet.
- 2j2+) [EXAMPLE] For example, if a competitor is disqualified from an event for failing to show up for the final round, his results from earlier rounds remain valid.
- 2s+) [REMINDER] Special accommodations must be noted in the Delegate Report.

## Article 3: Puzzles

- 3a+) [CLARIFICATION] Competitors may use puzzles of any reasonable size, at the discretion of the WCA Delegate.
- 3a++) [ADDITION] By default, a competitor should use the same puzzle for consecutive attempts in a speed solving round. A competitor may switch puzzles between attempts, at the discretion of the judge or WCA Delegate.
- 3a++++) [CLARIFICATION] Competitors may borrow puzzles from other competitors privately, to use in competition.
- 3a1+) [CLARIFICATION] Competitors may be disqualified if they do not come when they are called, or if they do not have a puzzle ready to submit (e.g. if they planned to use a puzzle that another competitor is currently using, and therefore cannot submit their puzzle at the moment).
- 3h+) [CLARIFICATION] Puzzles may be refined internally by sanding or lubricating.
- 3h++) [EXAMPLE] Examples of enhancements include: new moves are possible, normal moves are impossible, more pieces or faces are visible, colours on the backside of the puzzle are visible, moves are done automatically, or the puzzles has more/different solved states.
- 3j+) [REMINDER] In the past, engraved/embossed parts have been allowed. This is no longer permitted.
- 3j2+) [CLARIFICATION] On Clock, all eighteen inner clock faces are considered similar pieces.
- 3l+) [ADDITION] Logos may feature any reasonable design that does not give a conspicuous advantage (e.g. encoding information that could be used to cheat), and leave the coloured

part clearly recognisable. Unconventional logos are only permitted at the discretion of the Delegate.

## Article 4: Scrambling

- 4b1+) [REMINDER] The WCA Delegate must never re-generate any scrambles to replace other ones for the purpose of filtering. For example, it is not be permitted to glance at the scrambles for a competition and generate the entire set again in order to generate “fairer” scrambles.
- 4b2+) [CLARIFICATION] In general, all official scramble sequences should be kept secret during the competition and published together after the end of the competition (see Regulation 1c3a). In some cases (e.g. world records), the organisation team may wish to release specific scrambles sooner after the end of a round.
- 4b4+) [ADDITION] It is permitted for the puzzle to change its orientation when it is moved from the scrambler to the solving station, as long as no one is attempting to influence the randomness of the orientation (see Regulation A2e1).
- 4d+) [CLARIFICATION] Some puzzles use standard colour schemes, except that white is replaced with black. In this case, black is the darkest colour and must not be treated as white.
- 4f+) [RECOMMENDATION] The WCA Delegate should generate sufficient scrambles for the entire competition ahead of time, including spare scrambles for extra attempts.
- 4f++) [REMINDER] If the WCA Delegate generates any additional scrambles during the competition, he must save them (see Regulation 1c3a).

## Article 5: Puzzle Defects

- 5b5+) [EXAMPLE] Examples of parts physically detached, resulting in a solved state: one 3x3x3 center cap, one big cube center piece, an inner piece of a big cube.
- 5b5++) [EXAMPLE] Examples of parts physically detached, resulting in a “DNF”: two 3x3x3 center caps, two big cube center pieces, a 3x3x3 edge piece, a 4x4x4 edge piece (“wing”), any combination of two pieces that both have coloured parts.
- 5b5+++ [EXAMPLE] Example of parts not fully attached, resulting in a solved state: a 5x5x5 centre piece twisted in its spot.
- 5b5++++ [EXAMPLE] Example of parts physically attached but not fully placed, resulting in a “DNF”: a 3x3x3 edge piece slightly popped out.
- 5c+) [REMINDER] If a competitor has a puzzle defect, this does not give him the right to an extra attempt.

## Article 6: Awards/prizes/honours

- 6a+) [SEPARATE][ADDITION] Awards, prizes or honours may be given to competitors according to the announcement of the competition.
- 6b+) [SEPARATE][RECOMMENDATION] Competitors should attend the winner’s ceremony to receive awards/prizes/honours.
- 6b1+) [SEPARATE][RECOMMENDATION] The winner’s ceremony should be held in the competition venue, within one hour after the end of the last event.



- 6c+) [SEPARATE][RECOMMENDATION] Winners of awards, prizes or honours should be prepared to talk to journalists or any media covering the competition.
- 6d+) [SEPARATE][RECOMMENDATION] Organisation teams of competitions should have certificates for all category winners, signed by the leader of the organisation team and by the WCA delegate.

## Article 7: Environment

- 7d+) [SEPARATE][ADDITION] The temperature of the competition area should be 21 to 25 degrees Celsius.
- 7h2+) [SEPARATE][ADDITION] The competitors in the competitors area should not be able to see the puzzles of the competitors on stage.

## Article 8: Competitions

- 8a4+) [RECOMMENDATION] Changes to increase the maximum number of competitors in the first round should be made at least one month before the competition (see Regulation 9r3).
- 8a4++) [RECOMMENDATION] The competition should be announced at least one month before the beginning of the competition.
- 8a5+) [SEPARATE][RECOMMENDATION] The competition should have at least 12 competitors.

## Article 9: Events

- 9b+) [ADDITION] The preferred format for the final of an event is “Average of 5” or “Mean of 3”, if possible.
- 9b++) [ADDITION] Events other than those specified in Regulation 9b may be held during a competition, but will be considered unofficial and therefore will not be included in the official results of the competition.
- 9b3b+) [CLARIFICATION] The “Mean of 3” statistic does not affect the competitor’s ranking in a “Best of 3” round (which is based on the best result). The WCA recognises it outside of the competition format.
- 9f1+) [EXAMPLE] If the timer displays 12.678 for an attempt, the original recorded time is 12.67 (drop any digit after a hundredth of a second). A judge may write the full-precision time on the score sheet (and keep the precision in the calculation of penalties), as long as the score taker truncates it for the official results.
- 9f4+) [EXPLANATION] The result of an attempt is DNF only if the competitor began the attempt by indicating his readiness (see Regulation A3b2) but the attempt was disqualified.
- 9f5+) [CLARIFICATION] The result for an attempt is DNS if the competitor was eligible for the attempt and did not begin it (see Regulation A3b2). If the competitor did not qualify for an attempt (e.g. in a combined round), he does not have any result for the attempt.
- 9q+) [SEPARATE][RECOMMENDATION] Events and rounds should have at least 2 competitors.

## Article 10: Solved State

- 10f+) [EXPLANATION] The misalignment limits are selected so that they provide a natural cutoff between one state of a puzzle (without penalty) and a state one move away.

## Article 11: Incidents

- 11e+) [CLARIFICATION] Since an appeal is not guaranteed to be successful, the competitor may choose to keep the timer running while appealing it, and resume the attempt when appropriate.
- 11e1+) [REMINDER] The extra attempt must be scrambled using an unmodified scramble sequence generated by an official scrambler (see Regulation 4f, Guideline 4f+).

## Article 12: Notation

- 12c2+) [ADDITION] When counting the moves in case of a misalignment at the end of a solve,  $x$  and  $y$  are considered separately. Example: (5,1) is considered one misalignment, (5,5) is considered two misalignments.

## Article A: Speed Solving

- A1a2+) [ADDITION] In case of a cumulative time limit, the judge records the original recorded time for a DNF on the score sheet in parentheses, e.g. “DNF (1:02.27)”.
- A1a3+) [REMINDER] The organisation team and the WCA Delegate must be mindful that time limits influence the strategies of the competitors (e.g. rushing the first two attempts in hopes of meeting a cutoff in a combined round), and that changing time limits after the beginning of the round can disadvantage some competitors unfairly.
- A1a4+) [REMINDER] If a competitor has accidentally been permitted to exceed the time limit, the time limit must be enforced retroactively, and the judge, competitor, and WCA Delegate should be informed (see Regulation 1g2). Judges must always be aware of the time limit for a current attempt (which might depend on previous attempts, in the case of a cumulative time limit).
- A2c1+) [REMINDER] In the past, score sheets have been used to cover puzzles while leaving some sides exposed. This is no longer permitted.
- A3c3+) [CLARIFICATION] Although the judge is required to reset the timer for the competitor (see Regulation A3b), the competitor may reset it before/during the inspection phase if the judge accidentally neglected to do so.
- A6b+) [EXPLANATION] The arbitrary value of 0.06 seconds was chosen to accommodate concerns about Stackmat timer malfunctions.
- A6g+) [ADDITION] While he is determining whether to assign a penalty for misalignment, the judge should not touch the puzzle. Exception: For Clock, the judge will usually need to pick up the puzzle to verify both faces.
- A7c+) [ADDITION] If a result signed by a competitor is found to be incomplete or unreadable, it should be interpreted the worst reasonable way (e.g. “1:05” will be considered 1:05.99, “25.X3” will be considered 25.73 if X could be either a 1 or a 7). Given that the Stackmat timer displays a time of X:0Y.ss as X:Y.ss, a missing tens digit should be considered more likely than a missing ones digit (e.g. “1:2.27” will be considered 1:02.27). The

judge who signed an ambiguous result may be requested to clarify it, at the score taker's discretion.

## Article B: Blindfolded Solving

- B1+) [REMINDER] The competitor must use a puzzle without textures, markings, or other features that distinguish similar pieces (see Regulation 3k). This should be given special attention for Blindfolded Solving
- B1b+) [RECOMMENDATION] Blindfolds should be checked by the WCA Delegate before use in the competition.

## Article C: One-Handed Solving

- C1b+) [CLARIFICATION] The competitor may use both hands during inspection.
- C1b++) [CLARIFICATION] The competitor is not required to use the same solving hand for different attempts of the same round.
- C1b++++) [REMINDER] Use of the surface is permitted while solving or repairing the puzzle.

## Article D: Solving With Feet

- D1b+) [CLARIFICATION] The competitor may wear socks while solving.
- D1c+) [REMINDER] While repairing puzzle defects, other body parts must not touch the puzzle.

## Article E: Fewest Moves Solving

- E2b+) [CLARIFICATION] A competitor may choose to stop his attempt early by handing in a solution before the time limit.
- E3b+) [REMINDER] "Rubik's Cube" refers only to the standard 3x3x3 puzzle.

## Article H: Multiple Blindfolded Solving

- H1b1+) [REMINDER] The attempt is not disqualified for reaching the time limit, due to exceptions for Multiple Blindfolded Solving (see Regulation A1a4 and Regulation A1a5).
- H1b1++) [ADDITION] The judge may permit the competitor to continue the attempt unofficially, but the attempt must be stopped and judged first, in full accordance with the Regulations.
- H1d+) [EXAMPLE] Example: If a competitor attempts 10 cubes, stops with a time of 59:57, and has two time penalties, the time for the result is  $59:57 + 2 \cdot 2 = 60:01$  (also see Regulation A1a5).
- H1d++) [EXAMPLE] Example: If a competitor attempts 10 cubes, and the judge stops him at one 60 minutes, and has two time penalties, the time for the result is  $60:00 + 2 \cdot 2 = 60:04$ .