



International Bodyflight Association

Competition Rules

Indoor Artistic Events Solo Freestyle and Freeflying

*2018-2019 Edition
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International Bodyflight Association

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The IBA would like to thank the International Parachuting Commission (IPC) for granting permission to adapt the IPC competition rules.

The 2018-2019 edition differs from previous editions as indicated by vertical bars in the right-hand margin.

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1 Introduction

1.1 The IBA Authority

The competition will be conducted under the authority granted by the IBA, according to the regulations of the IBA and these rules. All participants accept these rules and the IBA regulations as binding by registering in the competition.

1.2 Objective of the Event

The objective for the performer or team is to record a sequence of moves with the highest possible merit. After all completed round(s), champions in Solo Freestyle, 2-way Freeflying and 4-way Freeflying will be declared. The Solo Freestyle Champions, the 2-way Freeflying and the 4-way Freeflying Champions are the performers and teams with the highest total score for all completed rounds of their event.

2 Definitions of Words and Phrases Used in These Rules

2.1 Team

A Solo Freestyle competition entry consists of one (1) performer.

A 2-way Freeflying team is composed of two (2) performers.

A 4-way Freeflying team is composed of four (4) performers.

There is no gender classification.

2.2 Heading

The direction in which the front of the torso of the performer faces.

2.3 Move

A change in body position, and/or a rotation around one or more of the three (3) body axes, or a static pose. See Addendum B.

2.4 Grips and Docks

2.4.1 Grip

A recognizable stationary contact of the hand(s) of one performer on a specified part of the body of the other performer, performed in a controlled manner.

2.4.2 Dock

A recognizable stationary contact of the foot (feet) of one performer on a specified part of the body of the other performer, performed in a controlled manner.

2.5 Anti-Chamber

Area used by teams as a waiting area for entrance into the flight chamber. This area is separated from public viewing areas and is the exclusive use for teams on call.

2.6 Diffuser

The vertical part of the flight chamber above the transparent viewing section.

2.7 Flight

A performer's or team's performance in the flight chamber.

2.8 **Routine:** a sequence of moves performed during the working time.

2.8.1 Free Routine

A routine composed of moves, chosen entirely by the performer or team. Music duration must not be longer than 70 seconds.

2.8.2 Compulsory Routine (Solo Freestyle Only)

A routine, without music, composed of three (3) compulsory sequences, as shown in Addendum A, and other moves at the performer's discretion. The order in which these compulsory sequences and other moves are performed is chosen by the performer.

2.8.3 Speed Routine (Local Adaptation)

2.8.3.1 In Freeflying, a Speed Routine may be a dynamic speed routine as described in the IBA Dynamic rules. Or, it may be a vertical formation indoor skydiving flight (Freeflying Only), as described in the IBA VFS rules.

2.9 Working Time

2.9.1 The period of time during which performers and teams may perform a routine during a flight. Working time starts the instant the performer or any team member begins flying, as determined by the judge(s).

- Compulsory Routine: Working Time is 45 seconds.
- Free Routine: Working Time is 60 seconds.

2.9.2 At the end of working time, a visual signal will be given and the performer or team will have 15 seconds to exit the flight chamber, if they have not already exited.

3 General Rules

3.1 Flight Chamber Use

3.1.1 There are no limitations on flight chamber entry and use other than those imposed for safety reasons by the hosting wind tunnel.

3.2 Video Recording

3.2.1 The organizer shall record all competition flights, including the music, in a High Definition 1080 type digital video signal with a minimum of 25 frames per second through a memory card (minimum class 10) and be approved by the chief judge.

3.2.2 The video camera(s) must be fixed static to the mount and on the same side of the tunnel as the judge(s)' live viewing gallery location.

3.2.3 The organizer is responsible for assuring the compatibility of the video and sound recording with the scoring system.

3.2.4 The organizer shall provide the video evidence required to show the performer's flight to the judges and third parties. A backup recording of all competition flights will be made.

3.2.5 The flight chamber doorway that will be used for entry and exit shall be fully shown in the video evidence.

- 3.2.6 The video angle and frame must show the flight chamber in a manner acceptable to the chief judge.
- 3.2.7 The organizer must provide a means of identification of each performer or team to be included in the video evidence.

3.3 Flight Order & Minimum Time Between Flights

- 3.3.1 The initial flight order will be by draw.
- 3.3.2 The relevant order of flights will be maintained throughout the competition, except for any logistical changes deemed necessary by the chief judge and the meet director.
- 3.3.3 The minimum time between flights for a performer or team will be ten (10) minutes.

3.4 Official Training Flights & Speed Setting

- 3.4.1 Prior to the start of the competition, each performer and team will receive one (1) official training flight, lasting no longer than two (2) minutes.
- 3.4.2 The competition wind tunnel, the judging and scoring system to be used in the competition will be used for the official training flights.
- 3.4.3 The performer or nominated team captain shall communicate with a tunnel official to request the speed to be increased, reduced or confirm correct. The determined speed will be the default speed for that performer or team.

3.5 Flight Chamber Entry

- 3.5.1 The tunnel will be set to the default speed decided by the performer or team during the Official Training Flights [ref 3.4.3]. When the tunnel is at the correct speed, a signal will be given to the performer or team. If no signals are given by the performer or team, then the default speed will be assumed to be satisfactory.
- 3.5.2 The speed setting will be indicated in the tunnel and shall be clearly visible to the performer or team prior to entering the flight chamber.
- 3.5.3 The position of the judge(s) with respect to the flight chamber doorway that will be used for entry and exit will be published not less than sixty (60) days before the start of competition.

3.6 Re-flights

- 3.6.1 In case of an unforeseen change of environment during performance, a re-flight may be granted.
- 3.6.2 Contact or other means of interference between the performer, between team members and/or the tunnel wall/cable floor shall not be grounds for a re-flight.
- 3.6.3 Problems with a performer's or team's equipment shall not be grounds for a re-flight.
- 3.6.4 A re-flight will be granted, if a tunnel spotter must abort a performer's or team's flight for any safety reason, provided that there was no intentional act on the part of the performer or team to create a safety problem.

3.7 Use of Skydiving and Tunnel

- 3.7.1 Performers are not allowed to skydive (freefall from any aircraft) or use any freefall simulator or wind tunnel, for flights other than competition flights, after the start of the competition.

3.8 Safety

- 3.8.1 If a performer demonstrates inadequate flying skills and/or persistent unsafe flying requiring repeated intervention by a tunnel spotter, that performer may be disqualified from the competition.

4 Rules Specific to the Event

4.1 Performers/Teams

- 4.1.1 A solo freestyle performer may be of either gender.
4.1.2 Freeflying teams may consist of either or both genders.

- 4.2 **Routines:** Solo Freestyle is comprised of Compulsory and Free Routines. Freeflying is comprised of only free routines.

- 4.2.1 Performers must deliver the order of the Compulsory Sequences (for both compulsory rounds) to the chief judge before the beginning of the competition.
4.2.2 Performers and teams must deliver a video (without music) of their Free Routine(s) to the chief judge at least 48 hours before the start of the competition. (Performers and teams may optionally include a written list of elements and/or present and explain their free routines to the judge(s).) Each performer or team may submit multiple Free Routines, but, during the competition, may submit a change only one time.
4.2.3 For this purpose, the chief judge should provide the standard form (Addendum D).
4.2.4 Failure to provide the video of the Free Routine(s) will lead to a score of zero (0) points for the Difficulty of all Free Routines.

4.3 Number of Rounds:

- Solo Freestyle will have seven (7) rounds.
- Freeflying will have three (3) free rounds.

- 4.4 **Order of Routines** (F = Free Routine, C = Compulsory Routine):

- Solo Freestyle will be: F - C - F - F - C - F

4.5 Right of Local Adaptation

- 4.5.1 The organizer may change the number of rounds or utilize a battle format and decide the number and order of Compulsory, Speed and/or Free Routines to be performed.
4.5.2 For Freeflying, the organizer may introduce Dynamic Speed Round(s) and/or Vertical Formation Indoor Skydiving Round(s) and decide which dynamic compulsory patterns and/or formations, respectively, will be included and whether or not it will be done by draw. Relevant content of the IBA Dynamic rules and/or IBA Vertical Formation Indoor Skydiving rules, respectively will apply.
4.5.3 The organizer may introduce classes for each event, such as Open, Intermediate, and/or Rookie. Only Free Routines are recommended for Intermediate and Rookie classes.
4.5.4 These changes will be published not less than sixty (60) days before the competition.

5 Judging and Scoring

5.1 **General:** Once a performer has entered the flight chamber, the flight shall be evaluated and scored.

5.2 **Scoring Free Routines:**

Before the start of the competition, the judge(s) will view the submitted videos and determine the Difficulty score, between 0.0 and 10.0, expressed as a number up to one decimal point, taking into account the following guidelines;

Difficulty: The degree of difficulty of all moves and transitions in the flight. Difficulty includes, but not limited to, the ability to move vertical and horizontal, and perform multiple rotations in a belly-down, back-down, head-down, head-up and/or sideways orientation and any other possible orientation as well as the ability to combine technical skills and create complex effects of movement. See Addendum C.

During the competition, the judge(s) give the following criteria a score, between 0.0 and 10.0, expressed as a number up to one decimal point, taking into account the following guidelines;

Execution:

- *Precision, control:* Ability of the performer or team to demonstrate body control skill (including pointed toes where appropriate), steadiness and appropriate control of position in the air column.

Presentation:

- *Creativity:* Routine composition is original with new moves, original choreography and/or new presentation of old moves. Routine has a nice flow with a definite beginning and a definite ending and appropriate use of working time. Routine is aesthetically pleasing to watch.
- *Delivery:* Appropriate use of space, presenting to the judge(s).
- *Appropriate use of time:* a penalty of misuse of time as follows:
 - Routine finishes early but within or outside of working time by five (5) seconds, the maximum score for Presentation will be 9.5.
 - Routine finishes early or late, but within or outside of working time by more than five (5) seconds, maximum score for Presentation will be 8.5.

5.3 **Scoring Compulsory Routines:** Judge(s) give a score for the performer, between 0.0 and 10.0 expressed as a number up to one decimal point, for Presentation [ref 5.2] and for each of the three (3) compulsory sequences, using the following guidelines;

10 points	Move is performed flawlessly with no noticeable mistakes.
8 points	Move is performed with some small mistakes.
5 points	Move is performed with several medium mistakes or a major mistake.
3 points	Move is performed with several major mistakes.
0 points	Move not performed or identifiable.

- See Addendum A for guidelines on scoring for common mistakes on some compulsory sequences.
- *Small Mistake examples*: finish slightly off heading, slight instability, etc.
- *Medium Mistake examples*: significantly off heading, instability, not enough rotation(s), toes not pointed where specified, knees bent, etc.
- *Major Mistake examples*: required elements missing or performed incorrect, turning the wrong direction, etc.
- The judges will only score the Compulsory Sequences they recognize. If an attempt is made for a Compulsory Sequence and the judges recognize it as such, scoring for that Sequence will commence.
- Presentation in the Compulsory Routines is scored for the beginning and the end of the routine, and move(s) performed between the compulsory sequences. If the judges cannot identify any Presentation element, the score for Presentation will be zero (0.0) points.

5.4 **Scoring Speed Routines** (for Local Adaptation): The score is based on the time, measured in hundredths of a second, the team takes to perform the speed routine or the number of formations performed within working time plus penalties for infringements and omissions.

5.4.1 **Infringements & Omissions** (Freeflying): The procedures for infringements and omissions in the IBA Dynamic Speed rules or IBA Vertical Formation Indoor Skydiving rules, as appropriate, will apply.

5.5 Score Calculation

5.5.1 Free Routine: For the Execution and Presentation criteria, the judge(s)' scores of both Execution and Presentation will be averaged separately with no rounding applied. To determine the Technical score, the scores for Difficulty and Execution will be added, and the result will be divided by two (2), with no rounding applied. The Technical and Presentation scores will be added, and the result will be divided by two (2), then rounded to the first decimal place.

5.5.2 Compulsory Routine: For each compulsory sequence and Presentation, the judges' scores will be averaged separately with no rounding applied. The average scores will be added, and the result will be divided by four (4), then rounded to the first decimal place.

5.5.3 Speed Round for Fastest Time (for Local Adaptation): The final time, after all penalties have been applied, will be used for this calculation. The team with the fastest time will receive 10 points. All other teams will be awarded points based on their time compared with the fastest team. The fastest final time will be divided by the team's final time then multiplied by 10 and rounded to the first decimal place.

5.5.4 Speed Round for Most Formations (for Local Adaptation): The number of scoring formations, after all penalties have been applied, will be used for this calculation. The team with the most scoring formations will receive 10 points. All other teams will be awarded a proportional fraction of 10 points based on their number of scoring formations as a fraction of that earned by the highest team. Each team's number of scoring formations will be divided by the highest team's number of scoring formations then multiplied by 10 and rounded to the first decimal place.

5.5.5 Rounding must be done as follows: intermediate values must be converted from two decimal places to one, by rounding to the nearest tenth, except where the

second decimal digit is exactly halfway between the two values, where it must be rounded to the higher of the two.

- 5.5.6 Total scores for the events are calculated by adding a performer's or team's official scores of all completed rounds.
- 5.5.7 All scores for each judge, for all competition flights, will be published. The scores for Difficulty will be published before the start of the competition.

5.6 Judging Rules

- 5.6.1 At least one (1) judge must evaluate each performer's and team's flight. More than one judge is recommended. Where possible, a complete round shall be judged by the same judge/panel.
- 5.6.2 The judge(s) must have previous competition and/or coaching experience in the Artistic Events, or be certified at the FAI or National level in the Artistic Events, and be acceptable to the meet director and chief judge.
- 5.6.3 All judges will evaluate all judging criteria.
- 5.6.4 **Viewing the Flights:**
 - 5.6.4.1 The judge(s) will view each performer's and each team's flight live from the flight chamber viewing gallery.
 - 5.6.4.2 In the case that live viewing will not be possible, the judges will use the video evidence. In this case, the video viewing angle and framing will be published not less than sixty (60) days before the start of the competition. All back up video recordings shall have the same viewing angle and framing.
 - 5.6.4.3 A second viewing of the compulsory rounds, using the video evidence at normal speed, is permitted.
 - 5.6.4.4 At the discretion of the event judge, a third view of a compulsory round, or any part, is allowed, in normal or reduced speed (70%-90%).
 - 5.6.4.5 Only the video evidence created in accordance to 3.2 may be used for judging.
- 5.6.5 The judge(s) will use a paper or electronic scoring system to record their evaluation of the performance. The judge(s) may correct their evaluation record after the flight has been judged. Corrections to the evaluation record can only be made before the chief judge signs the score sheet.
- 5.6.6 The chronometer will be operated by the judge(s) or by (a) person(s) appointed by the chief judge, and will be started when a performer or team member begins flying.

5.7 Ties

- 5.7.1 If two (2) or more performers and/or teams have equal scores, then if time permits, the first three (3) places will be determined by a tie-break free round. If a tie still exists, then the best score, then the second best score, and then third best score, of any completed free rounds will determine placings. If a tie still exists, then the best score, then the second best score, of any completed compulsory rounds, speed rounds, if there are no compulsory rounds.

ADDENDUM A

SOLO FREESTYLE COMPULSORY SEQUENCES

PERFORMANCE REQUIREMENTS & JUDGEMENT CRITERIA

- The order in which these compulsory sequences can be performed is determined by the performer.
- The performer must submit the order of the compulsory sequences before the start of the competition to the chief judge. [ref 4.2.2 and Addendum D]
- Each performer must ensure that clothing and/or their position in the flight chamber do not hinder the ability for Judges to clearly see the performance requirements being met. (E.g. if judges cannot see straight arms and/or legs then they may assume that the performer does not have straight arms and/or legs).
- When specified, toes must be pointed and knees must be straight, otherwise the maximum possible score is 9.0.
- The judging of each sequence begins when the judges see the performer beginning the sequence from the described beginning position (after a transition from the previous move with or without a momentary stop).
- The judging of each sequence ends when the judges see the performer completes or abandons the performance requirements of that sequence.

FIRST COMPULSORY ROUND (ROUND 2)

SFR-1 360° Barrel Roll Stall

- At the beginning, the performer is in the head-down orientation, presenting the back of the body to the judges.
- The performer descends into a belly-down orientation, facing the judges.
- A 360° barrel roll, in the Layout position with the knees straight, is performed with the head facing the judges, without changing heading or wobbling.
- The barrel roll must remain at the same level and centered in the flight chamber.
- The barrel roll can be performed in either direction.
- The Layout position, with the knees straight, must be maintained throughout the entire sequence.
- After the barrel roll, the performer ascends, returning to the head-down orientation presenting the back of the body to the judges.

SFR-2 Head-Up 360° Breaker

- At the beginning, the performer is in the head-up orientation in a Layout position with the knees straight, outfacing on one side of the flight chamber, presenting the side of the body to the judges.
- The performer descends and when passing across the bottom of the flight chamber, a 360° barrel roll is performed.
- The 360° barrel roll must be evenly performed such that the performer is halfway through the roll when halfway across the flight chamber.
- The performer must maintain the Layout position, with the upper legs in line with the torso, throughout the entire 360° barrel roll without wobbling. (The knees may bend.)

- During the 360° barrel roll, the head may face towards or directly away from the judges.
- The barrel roll can be performed in either direction.
- At the end, the performer ascends into the head-up orientation in a Layout position, outfacing on the opposite side of the flight chamber from the beginning, presenting the side of the body to the judges.

SFR-3 Tucked Double Back Loops

- At the beginning and end, the performer is in belly-down orientation, facing the judges.
- Two (2) consecutive back loops in a tucked position must be performed.
- Loops must be around the horizontal axis, without wobbling and without changing heading.
- Loops must be smooth, without stopping.
- The entire sequence must remain at the same level in the flight chamber.

Judging Guidelines:

- When the performer stops between the loops, the maximum score will be 8.0.
- When the performer opens to a Layout position (tuck not maintained) before the end of the second loop, the maximum score will be 8.0.

SECOND COMPULSORY ROUND (ROUND 5)

SFR-4 Front Layout Full Twist Sequence

- At the beginning and end, the performer is in a Layout position with the knees straight, head-up orientation, presenting the side of the body to the judges.
- Three (3) complete 360° Layout front loop rotations, without stopping, must be performed.
- A full twist must be performed within and evenly executed throughout the second loop.
- Looping movement must remain about a horizontal axis, without tilting or changing heading.
- Torso must be straight and legs in line with the torso, without any bend at the waist and knees, throughout the entire sequence.
- Looping motion must be smooth.
- The sequence must end on the same heading as the beginning.

Judging Guideline:

- When the performer stops between the loops, the maximum score will be 8.0.

SFR-5 Manna's Space Lab

- At the beginning and end, the performer is in head-up orientation, on the same heading, presenting the side of the body to the judges.
- A full 360° back loop is performed with the horizontal axis at the upper body.
- During the back loop, four (4) steps are performed to create the illusion of walking around the inside of a horizontal tube.
- The four (4) steps must be smoothly performed within and evenly executed throughout the back loop.
- Looping movement must remain about a horizontal axis, without tilting or changing heading.

SFR-6 Thomas Flair into Head-down Split

- At the beginning, the performer is in belly-down orientation.
- One and a half (1.5) Thomas Flair rotations must be performed.
- The toes must be pointed throughout the sequence.

Thomas Flair

- For a complete Thomas Flair, the torso must roll through 360° while simultaneously turning through 360° horizontally.
- The torso must be belly-down at the start of the rotation, on its side when 90° of the turn is complete, on its back when 180° of the turn is complete, and on the other side when 270° of the turn is complete.
- Legs must remain straddled apart, with at least 90° between them, with the knees straight.
- The face must remain facing the judges (performer looking at the judges) and maintain the same direction throughout all the rotation.

Half Thomas Flair to Head-down Split

- Without stopping, an additional half Thomas Flair is performed into a head-down split.

ADDENDUM B

BASIC BODY POSITIONS, ORIENTATIONS, ROTATIONS and PATHWAYS

A. DEFINITION BODY PARTS

A body consists of the entire performer and his/her equipment.

Grips can be taken and docks can be placed on these parts.

A performer's body is defined in specified parts, as follows:

- head: the part of the body above the neck.
- shoulder: the upper part of the body between the neck and the upper arm.
- torso: the body, including the shoulder, but excluding arms, legs, head and neck.
- arm: the whole arm from the shoulder, including upper arm, lower arm, wrist and hand (the shoulder is excluded).
- upper arm: the part of the arm between the shoulder and the elbow.
- lower arm: the part of the arm between the elbow and the wrist.
- hand: the part of the arm past the wrist.
- leg: the whole leg from the pelvis, including the upper leg, knee, lower leg and foot.
- upper leg (thigh): the part of the leg between the pelvis and the knee.
- knee: the part of the leg between the upper leg and the lower leg.
- lower leg: the part of the leg between the knee and the ankle.
- foot: the part of the leg past the ankle.
- sole: that part of the foot on which a person stands.

B. BODY POSITIONS

The body can be in an arch, layout or pike position with the limbs in any of various positions. These define the amount of bend at the waist/hips and the angle of the upper legs (thighs) relative to the torso. Additional body positions define positions of the legs. The arms are left free to control the position. For description purposes on heading, torso means the front of the torso.

B-1. Arch Position

- The torso is arched at the waist/hips, such that the angle between the front of the torso and the thighs is greater than 180° (if viewed from the side).
- If both legs are together with the knees straight, the angle between the front of the torso and both thighs must be greater than 180° (if viewed from the side).
- If the legs are in a creative position, at least one thigh must show an angle greater than 180° from the front of the torso (if viewed from the side).
- The head may be arched back.

B-2. Layout Position

- The torso is straight, with no bend at the waist/hips (if viewed from the side).
- If both legs are together with the knees straight, both legs must in line with the torso (if viewed from the side).
- If the legs are in a creative position, at least one thigh must be in line with the torso (if viewed from the side).

B-3. Pike Position

- The torso is bent forward at the waist/hips, such that the angle between the front of the torso and the thighs is less than 180° (if viewed from the side).
- If the legs are both together and straight at the knees or in a creative position, the angle between the front of the torso and the thighs must be less than 180° (if viewed from the side).
- For a Loose Pike, the angle between the front of the torso and the thighs is between 90° and 180° (if viewed from the side).
- For a Tight Pike, the angle between the front of the torso and the thighs is less than 90° (if viewed from the side).

B-4. Tight Tuck Position

- The torso is bent forward at the waist/hips such that the angle between the front of the torso and the thighs is less than 90° (if viewed from the side).
- The knees are bent, such that the angle between the upper and lower legs is less than 90°. The knees are not necessarily all the way up against the chest.
- The knees may be together or spread apart.
- For a Loose Tuck, the two described angles are between 90° and 180° (if viewed from the side).

B-5. Sit Position

- The torso is vertical in a head-up orientation.
- The angle between the front of the torso and thighs is between 90° and 145° (if viewed from the side).
- The knees are bent such that the angle between the upper and lower legs is between 90° and 145°.
- The lower legs are parallel to the torso.
- The knees may be together or spread apart.

B-6. Stag Position

- One leg is completely straight at the knee.
- The other leg is flexed forward at the hip and the knee is flexed to place the toe at the knee of the straight leg. The knee is flexed at least 90°.
- An Open Stag is when the lower leg of the bent leg is parallel with the upper leg of the straight leg. (The toe is not placed at the knee of the straight leg.)
- The knee of the leg placed in the Stag points forward.
- The body can be in an arched, layout or piked position while in a Stag Position.

B-7. Straddle Position

- The legs are split apart, from side to side, with at least a 90° angle between them (if viewed from the front).
- Both knees are straight.
- The body can be arched (Arched Straddle Position), in a layout (Layout Straddle Position) or piked (Piked Straddle Position) with the legs in a Straddle Position.

B-8. Split Position

- The legs are split apart from front and back, with at least a 90° angle between them (if viewed from the side).
- Both knees are straight.

B-9. Tee Position

- The torso may be straight, with no bend at the waist, or arched.
- One leg is extended in front of the torso, with an angle of 90° between the front of the torso and the thigh (if viewed from the side).
- The other thigh is in line with the torso or has an angle greater than 180° from the torso (if viewed from the side).
- Both knees are straight.

B-10. Compass Position

- The torso is in the head-up orientation.
- One leg is in line with the torso.
- For a parallel Compass, the other leg is raised forward, such that the angle between the thigh and torso is 90° or less.
- For a turned-out Compass, the other leg is split to the side with the knee pointed upward, such that the angle between the thigh and torso is 90° or less.
- Both knees are straight.
- The body can be in an arched or layout position with the legs in a Compass.

C. ORIENTATIONS

There are six (6) basic orientations (not including diagonal orientations) which a body can have relative to the wind or cable floor. These define which way the torso is oriented.

C-1. Belly-down Orientation

The torso is horizontal, on its front, facing down towards the wind (or the cable floor).

C-2. Back-down Orientation

The torso is horizontal, on its back, facing up, away from the wind (towards the top of the tunnel).

C-3. Sideways Orientation

The torso is horizontal, on its side, with either side facing towards the wind (or cable floor). The chest is facing the tunnel wall.

C-4. Head-up Orientation

The torso is vertical with the head up, directly away from the wind (towards the top of the tunnel).

C-5. Head-Down Orientation

The torso is vertical with the head down, pointing directly down into the wind (towards the cable floor).

C-6. Diagonal Orientation

The torso is on a diagonal with respect to the cable floor, at an angle between the six (6) basic orientations. The torso may be head high or head low. The front of the torso may be pointed towards the ground, towards the sky or any direction about the Body Head-Tail axis.

D. ROTATION AXES

Most moves involve some sort of rotational motion of the body. A total of five (5) axes are used to describe six (6) basic rotational motions.

D-1. Earth/Wind Axes

There are two (2) inertial axes which stay fixed with respect to the wind (or cable floor).

Vertical Axis

The vertical axis remains parallel to the wind (pointing from the top of the tunnel to the cable floor). Spins are rotations about the Vertical Axis.

Horizontal Axis

The horizontal axis is any axis perpendicular (90°) to the wind (pointing to the tunnel wall). It may have any heading (pointing towards any desired point on the tunnel wall).

D-2. Body Axes

There are three (3) body axes which stay fixed with respect to each performer's body.

Body Head-Tail Axis

The body head-tail axis is oriented lengthwise, pointing from head to tail-bone, normally through the performer's torso. (In a layout position, the head and feet are in the same line. When the body is bent at the hips, this axis is aligned with the spine and does not include the legs.)

Body Front-Back Axis

The body front-back axis is oriented forwards and backwards, pointing from front to back, normally through the performer's belly.

Body Left-Right Axis

The body left-right axis is oriented sideways, pointing from left to right, normally through the performer's hips.

E. BASIC ROTATIONAL ACTIONS

There are six (6) basic rotational actions. Twisting combines rotational actions by adding a rotation about the body head-tail axis during a rotation about the body left-right or front-back axis.

E-1. Flat Turns

Flat turns involve a rotation about the body front-back axis when that axis is aligned with the vertical axis. The performer's heading is changing. The body can be belly-down or back-down while performing a flat turn.

E-2. Pirouettes

Pirouettes involve a rotation about the body head-tail axis when that axis is aligned with the vertical axis. The performer's heading is changing. The body can be head-up or head-down while performing a pirouette.

E-3. Barrel Rolls

A barrel roll is a rotation about the body head-tail axis when that axis is aligned with the horizontal axis. A barrel roll may begin and end in a belly-down, back-down or sideways orientation.

E-4. Cartwheels

A cartwheel is a head-over-heels rotation about the body front-back axis when that axis is aligned with the horizontal axis. The body passes through a head-up, sideways and/or head-down orientations during the course of a cartwheel. A cartwheel needs not start nor finish in an exact head-up, sideways or head-down orientation. A cartwheel is considered to be a full cartwheel when the head has traveled 360° around the horizontal axis from the point at which it started. A cartwheel may be performed to the right or left.

E-5. Loops

A loop is a head-over-heels rotation about the body left-right axis when that axis is aligned with the horizontal axis. The body passes through a head-up, belly-down, head-down and/or back-down orientation during the course of the loop. A loop may begin and end in a head-up, belly-down, head-down and/or back-down orientation. A loop needs not start nor finish in an exact head-up, belly-down, head-down and/or back-down orientation. A loop is considered to be a full loop when the head has traveled 360° around the horizontal axis from the point at which is started. There are two (2) kinds of loops. (Loops are referred to by the direction in which the loop is initiated, since in the case of twisting loops, the direction in which the loop completes may be different from the direction at the start.)

Back Loop

A back loop is a loop rotation initiated with the torso rotating backwards.

Front Loop

A front loop is a loop rotation initiated with the torso rotating forwards.

E-6. Side Loops (Loops on the Side)

A loop in the sideways orientation is a rotation about the body left-right axis when that axis is aligned with the vertical axis. A Pinwheel and Spinning Egg are examples of a true loop on the side.

E-7. Twists

Twisting combines rotational actions by adding a rotation about the body head-tail axis during a rotation about the body left-right or front-back axis, aligned with either the horizontal or vertical axis. There are two (2) basic categories of twists.

Vertical Twists

A vertical twist is a head-over-heels rotation about the horizontal axis (loop or cartwheel) combined with a rotation about the body head-tail axis. A single or full twist is defined to be a 360° rotation about the body head-tail axis over the course of a 360° loop or cartwheel. The amount of twist contained within a loop or cartwheel is the amount of twisting rotation completed after a 360° looping or cartwheeling rotation has been performed, when measured from the point in the loop or cartwheel at which the twist was first initiated. Twists may be initiated at any position in the loop or cartwheel and in any direction.

Horizontal Twists

A horizontal twist is a rotation about the vertical axis (flat turn or side loop) combined a rotation about the body head-tail axis. A single or full twist is defined to be a 360°

rotation about the body head-tail axis over the course of a 360° flat turn or side loop. For example, a Flip Through is a horizontal twist.

F. CIRCULAR PATHWAYS

There are two (2) basic types of circular pathways a performer(s) may follow, which can be performed either infacing or outfacing. Circular pathways may have embedded moves (e.g. Bottom Loop).

Infacing

The front of the torso faces inward towards the concave side of the pathway, usually, but not always, towards the center of the flight chamber.

Outfacing

The front of the torso faces outward away from the concave side of the pathway, usually, but not always, towards the wall of the flight chamber.

F-1. Carving

The performer's body traces a circular path in approximately a horizontal plane. Carving is performed while head-down, head-up or in other orientations.

F-2. Vertical Orbits

The performer's body traces a circular path in a vertical plane. Eagles and Reverse Eagles are two (2) common forms of Vertical Orbits that involve also rotating about the Body Left-Right Axis.

Eagle

The performer travels in a Vertical Orbit while continuously leading with the head, passing through the back-down, head-up, belly-down and/or head-down orientation (in that order, if infacing). An Eagle may begin from any orientation in this progression. A Half Eagle is when the performer has traveled head first through 180° of vertical orbiting. A Full Eagle is when the performer has traveled head first through 360° of vertical orbiting. In 2-way freeflying, an Eagle begins with each performer in the opposite orientation, facing away (blind) or toward one another.

Reverse Eagle

The performer travels in a Vertical Orbit while continuously leading with the feet (or tail-bone), passing through the back-down, head-down, belly-down and/or head-up orientation (in that order, if infacing). A Reverse Eagle may begin from any orientation in this progression. A Half Reverse Eagle is when the performer has traveled feet (or tail-bone) first through 180° of vertical orbiting. A Full Reverse Eagle is when the performer has traveled feet (or Tail-bone) first through 360° of vertical orbiting. In 2-way freeflying, a Reverse Eagle begins with each performer in the opposite orientation, facing away (blind) or toward one another.

ADDENDUM - C1:**Difficulty - Solo Freestyle**

'Difficulty' is the combined result of several factors. Moves are classified from very easy to very difficult. The overall performance of the flights (poses, moves and transitions) counts for difficulty. In general, difficulty factors are:

Easier	More Difficult
Fixed orientation with large support base	Fixed orientation with small support base
Horizontal axis rotation with small support base	Horizontal axis rotation through large support base
Stable, easy to balance move	Unstable, difficult to balance move
Moves executed individually	Moves executed in a connected sequence
High drag moves flown with slow tunnel speed	High drag moves flown with fast tunnel speed, the longer the duration of high drag move(s), the more difficult
Low drag moves flown with fast tunnel speed	Low drag moves flown with slow tunnel speed, the longer the duration of the low drag move(s), the more difficult
Random Movements	Precisely Choreographed Movements (including perfect synchronicity with music if performing to music)
Body position lost during move(s)	Ideal body position maintained throughout move(s)
Drifting in flight chamber during static move(s)	Remaining stationary in flight chamber on a constant heading and level during static move(s)
Easy natural body positions	Awkward body position and/or grip(s), such as a hand grip on one's own foot with that grip behind
Move does not require flexibility	Move requires flexibility
Move does not require strength and power	Move requires strength and power
Symmetrical body shape held on heading	Asymmetrical body shape held on heading
Asymmetrical body shape not held on heading	
Basic Move(s)	Move(s) that requires long learning progression
Performing previously seen Move(s)	Performing brand new Move(s)
Rotations on 1 axis	Rotations on more than 1 axis (in which use of 3 axes is more difficult than use of 2 axes)
Performing moves, carving/rotating always in a preferred direction	Performing moves, carving/rotating in both directions
Short duration in rotation (no dizziness)	Long duration in rotation (dizziness)
Performer flying in clean airflow	Performer flying across burble of doorway
Fast transitions through burble of doorway	Performer remaining in burble of doorway for extended time
Transitions between moves with the same axes	Transitions between moves with different axes at a precise heading/orientation
No direction change	Reversal of direction at a precise heading/orientation
Carving/vertical orbits without embedded move(s)	Carving/vertical orbits with embedded move(s)
Complex moves using arms and legs to control flying	Variety of complex moves without using arms or with arms and/or legs in fixed pose or in creative, artistic gestures
Consuming the entire space of the flight chamber, including the diffuser	Deliberate, controlled use of a portion of the available space.
Landing on the cable floor to exit and end routine	Landing exactly in the doorway with a complex move to exit and end routine

Combinations of multiple factors further increase difficulty. Performers are not expected to demonstrate all of the above difficulty factors within one routine. A difficulty factor may sometimes have the opposite effect of making a move easier, e.g., retracting the arms keeping them fixed to the body may decrease the difficulty of certain moves. The judge(s) are expected to apply additional knowledge and understanding of difficulty.

ADDENDUM - C2: Difficulty - Freeflying

'Difficulty' is the combined result of several factors. The overall performance of the flights (moves, patterns and transitions) counts for difficulty. In general, difficulty factors are:

Easier	More Difficult
High drag moves flown with slow tunnel speed	High drag moves flown with fast tunnel speed, the longer the duration of high drag move(s), the more difficult
Low drag moves flown with fast tunnel speed	Low drag moves flown with slow tunnel speed, the longer the duration of the low drag move(s), the more difficult
Moves executed individually	Moves executed in a connected sequence
Body position lost during move(s)	Ideal body position maintained throughout move(s)
Random Movements	Precisely Choreographed Movements
Move(s)/Pattern(s) without elements of precision	Move(s)/Pattern(s) with elements of precision, e.g., head-to-head with no other grips
Easy natural body positions	Awkward body position and/or grip(s), such as a hand grip on one's own foot with that grip behind
Move(s) do(es) not require flexibility	Move(s) require(s) flexibility
Move(s) do(es) not require strength and power.	Move(s) require(s) strength and power
Basic, simple Move(s)/Pattern(s)	Move(s)/Pattern(s) require(s) long learning progression
Performing previously seen Move(s)/Pattern(s)	Performing brand new Move(s)/Pattern(s)
Rotations on 1 axis	Rotations on more than 1 axis (in which use of 3 axes is more difficult than use of 2 axes)
Slow flying in loose proximity	Fast flying in very close proximity
Performing moves, carving/rotating always in a preferred direction	Performing moves, carving/rotating in both directions
Performer(s) flying in clean airflow	Performer(s) flying across burble of other performer(s) and/or doorway
Fast transitions through burble(s) of other performer(s) and/or doorway	Performer(s) remaining in burble(s) of other performer(s) and/or doorway for extended time
All performers flying in same direction and pathway (carving, vertical orbiting, etc.)	Performers simultaneously flying different directions and pathways, intermixing (while carving, vertical orbiting, etc.)
Carving/vertical orbits without embedded move(s)	Carving/vertical orbits with embedded move(s)
Transitions between Moves/Patterns with the same axes	Transitions between Moves/Patterns with different axes at a precise heading/orientation
No direction change	Reversal of direction at a precise heading/orientation
Complex Moves/Patterns using arms and legs to control flying	Variety of complex Moves/Patterns without using arms or with arms and/or legs in fixed pose or in creative, artistic gestures
Eye contact with other performer(s)	No eye contact (blind) with other performer(s)
Landing on the cable floor to exit and end routine	Landing exactly in the doorway with a complex move to exit and end routine

Combinations of multiple factors further increase difficulty. Teams are not expected to demonstrate all of the above difficulty factors within one routine. A difficulty factor may sometimes have the opposite effect of making a move/pattern easier, e.g., retracting the arms keeping them fixed to the body may decrease the difficulty of certain moves. The judge(s) are expected to apply additional knowledge and understanding of difficulty.

This table of difficulty factors only provides examples.

Difficulty Free Routine Moves and Patterns Categorized by Type of Movement					
Type of Move	Very easy	Easy	Moderate	Difficult	Very difficult
HD Inface Carving	Same direction	With direction change	With mixed orientations	With mixed directions	Mixed orientations AND directions
HD Outface Carving		Same direction	With direction change	Mixed orientations OR directions	Mixed orientations AND directions
HU Inface Carving	Same direction	With direction change	With mixed orientations	With mixed directions	Mixed orientations AND directions
HU Outface Carving		Same direction	With direction change	Mixed orientations OR directions	Mixed orientations AND directions
HD Flares	Same direction	With direction change	With mixed orientations	While crossing & burble hoping, mixed directions	While crossing & burble hoping, mixed orientations AND directions
HU Flares	Same direction	With direction change	With mixed orientations	While crossing & burble hoping, mixed directions	While crossing & burble hoping, mixed orientations AND directions
Cheerleaders	Direction change returning to same orientation	Direction change into different orientation	With mixed orientations	Transition into layouts or flares	Transition into layouts or flares with tricks OR spins
Interlacing	Transition into carving	Transition into carving with orientation change	Transition into layouts	Transition into layouts with spins	Transition into layouts with flips/loops
Breakers	Same direction	Mixed direction & crossing with burble hoping	With mixed orientations	Anti-breakers	Anti-breakers with mixed directions & crossing with burble hoping
Back Layouts	Back Layout (D2W/D4W-6)	Layouts while crossing & burble hopping	Back Layout with spins OR tricks		Mixed orientation back layouts with tricks OR spins
Front Layouts		Front Layout (D2W/D4W-10)	Layouts while crossing & burble hopping	Front Layout with spins OR tricks	Mixed orientation front layouts with tricks OR spins

The above table shows a scale of difficulty for each type of move/pattern and each type of move/pattern is to be read within its own line. The table does not compare the difficulties of each type of move/pattern to the other types of moves/patterns, e.g., it does NOT intend to imply that a basic Breaker is as easy as basic HD Inface Carving.

The judge(s) are expected to apply additional knowledge and understanding of difficulty.

ADDENDUM D

Free Routine Description

Performer # Team #:	Performer/Team Name:		
Please circle event:	SOLO FREESTYLE	2-WAY FREEFLYING	4-WAY FREEFLYING

Order for 1st Compulsory Round (Rd 2) & Tunnel Speed Setting Used:	
Order for 2nd Compulsory Round (Rd 5) & Tunnel Speed Setting Used:	
This Free Routine description covers the circled rounds	ALL - 1 - 3 - 4 - 6 - 7 Tunnel Speed Setting Used:

Name of Move / Sequence	Description if Appropriate