



# Tunnel Competition Rules Indoor Artistical Skydiving

Effective 01 April 2021

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The iFly Australia Tunnel Competition would like to thank the International Parachuting Commission (IPC) for granting permission to adapt the IPC competition rules.

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## 1. AUTHORITY

The competition will be conducted under the authority granted by the iFly Australia Tunnel Competition, per the regulations of the iFly Australia Tunnel Competition and these rules. All participants accept these rules and the iFly Australia Tunnel Competition regulations as binding by registering in the competition.

## 2. DEFINITIONS OF WORDS AND PHRASES USED IN THESE RULES

2.1. A Solo Freestyle (SFR) competition entry consists of one (1) Performer.

2.2. Junior Performer

Is a person whose 18<sup>th</sup> birthday occurs either during or after the calendar year in which the relevant competition takes place

2.3. Heading

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

2.4. 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](#).

2.5. 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 for the exclusive use of Teams on call.

2.6. Diffuser

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

2.7. Flight

A competitor's performance in the flight chamber.

2.8. Routine

A sequence of moves performed during the working time.

2.8.1. Compulsory Routine: 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.

2.8.2. Free Routine: a routine composed of moves chosen entirely by the Performer.

2.9. Working Time

The period of time during which a Performer may perform a routine during a Flight, as specified in [5.9](#).

## 3. THE EVENTS

3.1. Discipline

The discipline comprises of Solo Freestyle (SFR) Open and Junior events. There is no gender separation.

3.1.1. Junior competitors, whose 15th birthday occurs before the official start of competition may, if they choose, enter an open category event. Any competitor may only enter one category (Open or Junior).

3.2. Objective of the Event

The objective for the Performer is to perform a sequence of moves with the highest possible merit.

3.2.1. After all completed round(s), the Winner in Solo Freestyle and in Junior Solo Freestyle will be declared.

- 3.2.2. If two (2) or more Performers 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, the following procedure will be applied:

- i) the best score, then the second-best score, and then third best score, of any completed free rounds;
- ii) the best score, then the second-best score, of any completed compulsory rounds.

- 3.2.3. All team members in the events will be awarded medals if placed First, Second or Third.

### 3.3. Performance Requirements

Refer [ADDENDUM A](#).

## 4. SAFETY

- 4.1. All competitors must, at minimum, be signed off as a Competent Flyer under IBA (International Bodyflight Association) and be able to participate safely in tunnel flying.
- 4.2. Minimum flying ability would require each individual to be able to show control when moving forwards and backwards, slow and fast fall, side sliding and turning, remembering that they are sharing the tunnel space with other people.
- 4.3. Coaches and Instructors are to never touch the competitors inside the wind tunnel other than to spot a potentially dangerous situation.
- 4.4. For safety reasons, if an individual flyer demonstrates unsafe or less than the minimum flying skills expected, he or she might be disqualified during the event or asked to exit the wind at any time, if deemed unsafe. Questions regarding your suitability for this competition contact the event organiser or communicate with your wind tunnel coach/meet director.

## 5. GENERAL RULES

### 5.1. Performers' equipment

Performers are responsible for outfitting themselves in their own suitable clothing and footwear, including flight suits, helmets, goggles, and ear plugs.

### 5.2. Wind Tunnel Equipage

The minimum acceptable diameter for the flight chamber is 4.25 metres. The minimum height for the transparent wall is 3.7 metres.

### 5.3. Use of Skydiving and Tunnel

- 5.3.1. Freefall: Performers are not allowed to freefall from any aircraft or use any freefall simulator or wind tunnel, for Flights other than competition Flights, after the commencement of the competition.

### 5.4. Flight Chamber Entry

Only one (1) doorway leading into the flight chamber will be used for entries and exits. The tunnel will be set to the correct speed decided by the Performer during the Speed Setting time. When the tunnel is at the correct speed, a signal will be given to the Performer.

### 5.5. Routines

The discipline is comprised of Compulsory Routines and Free Routines.

### 5.6. Submission of Order of Compulsory Sequences and Free Routine Videos.

- 5.6.1. Performers must deliver the order of the Compulsory Sequences (for both Compulsory Rounds) to the Chief Judge before the beginning of the competition.

- 5.6.2. Executing Compulsory Sequences in different order than submitted, will lead to a score of zero (0) for each Compulsory Sequence that is out of order.
- 5.6.3. Performers must deliver a video (static view, without music) of their Free Routine(s) to the Chief Judge at least seventy-two (72) hours before the start of the competition, and access provided to all Judges (Performers may optionally include a written list of elements and/or present and explain their Free Routine(s) to the panel). Each Performer may submit multiple Free Routines, but during the competition, may submit a change only one time. Teams must declare which Free Routine they will perform for each Free Round.
- 5.6.4. For this purpose, the Chief Judge should provide a standard form (see [ADDENDUM D](#)).
- 5.6.5. Failure to provide the video of the Free Routine(s) will lead to a score of zero (0) points for Technical for all Free Routines.
- 5.7. Flight Order
- 5.7.1. The flight order for the competition will be determined by a draw prior to the start of the competition.
- 5.7.2. 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.
- 5.7.3. The minimum time between flights for a performer will be ten (10) minutes.
- 5.8. Rounds
- 5.8.1. Number of rounds:
- 5.8.1.1. Full competition Compulsory Routines: 2 rounds Free Routines: 3 rounds Minimum competition 1 round.
- 5.8.1.2. No Compulsory Routines for Junior Competitors, Free Routines only
- 5.8.2. Flight order of the routines must be: F - C - F - C - F (C = Compulsory Routine, F = Free Routine).
- 5.8.3. In the official practice flight - the nominated team captain shall communicate with the tunnel instructor to request the speed to be increased, reduced or to confirm that it is ok. The speed reached will be used as the default speed for the team. The tunnel driver shall select the default speed for each team prior to that team entering the tunnel. If no signals are given, then the default speed is assumed by the tunnel driver to be satisfactory.
- 5.8.4. A competition is composed of up to five (5) rounds. A minimum of one (1) round constitutes a competition wherein a winner can be determined.
- 5.8.5. Time must be reserved before the end of the competition to allow for the completion of the tie break round.
- 5.9. Working Time
- 5.9.1. Working time starts the instant the Performer begins flying, as determined by the Judges.
- Compulsory Routine: Working Time is 45 seconds.
  - Free Routine: Working Time is minimum 75 to a maximum of 90 seconds. Each Performer must declare the length of his/her Free Routine before the competition begins. Music duration must not be longer than 10 seconds over the routine's time.
- 5.9.2. The chronometer will be operated by the person appointed by the Chief Judge and/or Event Organiser.
- 5.9.3. At the end of working time, a visual signal will be given, and the performer will have 15 seconds to exit the flight chamber if they have not already exited.
- 5.10. Video Recording
- 5.10.1. Video evidence is required for each flight.

- For the purpose of these rules, 'video equipment' shall consist of the complete video system used to record the video evidence of the Performer's Flight, including the camera(s), recording media, cables and power source. The video equipment must be able to deliver a High Definition 1080 type digital signal with a minimum frame rate of 25 frames per second through a memory card (minimum class 10), or as approved by the Chief Judge.
- 5.10.2. The Organiser shall provide the video evidence required to show the Performer's Flight to third parties. A backup recording of all competition Flights will be made.
- 5.10.3. The Organiser is responsible for assuring the compatibility of the video equipment with the scoring system.
- 5.10.4. The camera(s) must be fixed static to the mount and on the same side of the tunnel as the Judges' live viewing gallery location.
- 5.10.5. The flight chamber doorway that will be used for entry and exit shall be fully shown in the video evidence. The position of the Judges with respect to the flight chamber doorway that will be used for entry and exit will be published not less than 10 days before the start of competition.
- 5.10.6. The speed setting will be indicated in the tunnel and shall be clearly visible to the Performer prior to entering the flight chamber.
- 5.10.7. A video controller will be appointed by the organiser, with the approval of the Chief Judge, prior to the start of the competition. The video controller is responsible for the functionality of the video equipment to ensure it is usable for the competition.
- 5.10.8. The Organiser must provide the Performers with a way of identification of the Performer to be included in the video evidence.
- 5.11. Scoring
- 5.11.1. Once the Performer has entered the flight chamber, the Flight shall be evaluated and scored.
- 5.11.2. Scoring Free Routines:
- Before the start of the competition, the Judges will view the submitted videos and determine the Initial Technical score, between 0.0 and 10.0 expressed as a number up to one decimal point, taking into account the following guidelines;
- Initial Technical score: The degree of Technicality of all moves and transitions in the Flight.
- Technical includes but is not limited to:
- The ability to fly and perform elements in different axis and orientations, appropriate use of the entire flight chamber, creating new technical combinations and performing elements with multiple rotations or direction changes. See [ADDENDUM C](#).
- Execution Deductions:
- During the competition, the Judges determine Execution deductions, according to the following table:
- |                             |   |
|-----------------------------|---|
| Up to 1.0 point deduction   | For each instance, the Performer is unintentionally touching the walls/net/diffuser |
| Up to 1.0 point deduction   | For each missing element (for example, single instead of double twist)              |
| 0.1 to 0.3 points deduction | For each instance the Performer is off centre/off heading/off level/wobble          |
- Each Judge will total all their Execution deductions.
- Presentation:
- During the competition, the Judges will give a presentation score, between 0,0 and 10,0 expressed as a number up to one decimal point, taking into account the following guidelines;

- 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 Judges.
- Appropriate Use of Time: a penalty of misuse of time is as follows:

If the routine finishes early or late, but within one (1) seconds of the Performer's declared working time, there will be no penalty.

If the routine finishes two (2) to five (5) seconds over/under the working time, the deductions will be as follows:

- +/- 2 seconds: - 0.1 points
- +/- 3 seconds: - 0.2 points
- +/- 4 seconds: - 0.3 points
- +/- 5 seconds: - 0.4 points

If the routine finishes more than five (5) seconds early or late, there will be a 0.2 point deduction for each second beyond five (5) seconds, as follows:

- +/- 6 seconds, - 0.6 points
- +/- 7 seconds, - 0.8 points, etc.

- 5.11.3. Scoring Compulsory Routines: Judges give a score for the Performer (between 0.0 and 10.0, up to one decimal point) for Presentation (as per Free Routine) and for each of the three (3) Compulsory Sequences, using the following guidelines:

	<b>Deduction up to:</b>	<b>Explanation</b>	<b>Example</b>
Set-up	10%	Facing the correct direction In the correct body position At the correct place in the tunnel	Start HU layout position, side of body to Judges.
Major part of the compulsory	50%	The part that defines the sequence	The twist in the loop twist or the body position at the end of Thomas Flair
Specific body position requirements	20%		Pointed toes, straight legs
Execution mistakes	20%	Flow, wobble, off heading, off centre	
Specific Judging Guidelines	See <a href="#">ADDENDUM A</a>	As specified for each compulsory	See <a href="#">ADDENDUM A</a>

Presentation in the Compulsory Routine will be scored for, as in the Free Routine, creativity, delivery, and use of time. The overall impression of the whole routine, and not just compulsories assembled together.

- 5.11.4. The Judges will only score the Compulsory Sequences they recognise. If an attempt is made for a Compulsory Sequence and the Judges recognise this as such, scoring for that sequence will commence. 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.
- 5.11.5. Score calculation: The score for each routine is calculated as follows:

- Compulsory Routines: 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.
  - Free Routines: The three (3) total scores for the Execution deductions will be added, and the result divided by three (3), with no rounding applied. To determine the Technical score, the averaged Execution score will be deducted from the Initial Technical score. The minimum possible score for Technical is zero (0) points. The three (3) scores for Presentation will be added, and the result divided by three (3) with no rounding applied. The Technical and Presentation scores will be added, and the result will be rounded to the first decimal place (the maximum score for the Free Routine is 20.0 points).
- 5.11.6. 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.
- 5.11.7. Total scores for the event are calculated by adding Performer's official scores of all completed rounds.
- 5.11.8. All scores for each Judge, for all competition flights, will be published.
- 5.11.8.1. The initial Technical score will be published before the start of the competition.
- 5.11.9. The minimum score for any round is zero (0) points.
- 5.12. Re-Flights
- 5.12.1. In case of an unforeseen change of environment during performance, a re-flight may be granted.
- 5.12.2. Contact or other means of interference between the Performer and/or the tunnel walls/cable floor shall not be grounds for a re-flight.
- 5.12.3. Problems with a competitor's equipment shall not be grounds for a re-flight.
- 5.13. Speed Setting and Training Performance
- 5.13.1. Speed Setting: Three (3) minutes per Performer will be allocated for speed setting.
- 5.13.2. Flights may only take place prior to the start of the competition.
- 5.13.3. The wind tunnel configuration used for the competition will also be used for the official training performance.
- 5.13.4. Each Performer will be given the option of two (2) official training Flights prior to the competition. The same configuration, plus the judging and scoring systems to be used in the competition will be used for the official training Flights.
- 5.13.5. Before the start of the training Flights, the Performer has the option to explain the delivered Free Routine description sheet(s). If no training Flights are possible, Performers can deliver a maximum of two (2) previous training Flights for scoring and move explanation. For these (previous and official training) Flights, no scores for Presentation will be given.

## **6. JUDGING**

### **6.1. Judge Requirements**

- 6.1.1. A panel consisting of three (3) Judges must evaluate each Performer's Flight. A complete round shall be judged by the same panel.
- 6.1.2. Viewing the Flights: The Judges will view each Performer's Flight from the flight chamber viewing gallery. The Judges will watch each Flight live. At the discretion of the Event Judge, a second viewing of the compulsory rounds, using the video evidence, is permitted. At the

discretion of the Event Judge, a third view of a Compulsory Round video, or part of it, is allowed, in normal or reduced speed (50% to 70%), and/or use of video pause.

- 6.1.3. All Judges will evaluate all judging criteria.
- 6.1.4. The Judges will use an electronic scoring system to record the evaluation of the performance.
- 6.1.5. The chronometer will be operated by the Judges or by a person(s) appointed by the Chief Judge and will be started when a Performer begins flying.
- 6.1.6. Judges shall be certified to judge at the FAI level or National Championships in AE events, and who are acceptable to the Meet Director.

## 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 (see [5.6](#) and [ADDENDUM D](#)).
- Executing Compulsory Sequences in other order than the one submitted, will lead to a score of zero for the moves that are out of order.
- 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.
- The definition of each body position is described in [ADDENDUM B](#).

#### FIRST COMPULSORY ROUND (ROUND 2)

##### SFR-1 360° Barrel Roll Stall manoeuvre

- 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.
- Once in Belly-down orientation (while descending), 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 descending must stop at the end of the barrel roll.
- The barrel roll must be horizontally centred 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.

##### Judging Guidelines:

- When the knees are not straight during the roll, i.e., no layout position, the maximum score will be 7.0 points.
- When the Performer is still descending after the roll, the maximum score will be 8.0 points.

##### 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 to a belly down orientation on the same heading.
- 180° of turning with a full 360° roll (Breaker) is performed from one side of the flight chamber to the opposite side.
- The lower legs are closer to the centre of the flight chamber, drawing a small half circle, while the head is closer to the transparent wall, drawing a bigger half circle.

- The Performer must maintain the Layout position, with the upper legs in line with the torso, throughout the entire Breaker without wobbling (the knees may bend).
- The Breaker must be evenly performed from one side to the other side of the flight chamber (the rolling must begin before or nearly 45° into the turn and end at the same point on the other side. The Performer must be halfway through the roll when at 90° of turning).
- During the Breaker, the head may face towards or directly away from the Judges.
- The Breaker can be performed in either direction.
- At the end, the Performer ascends into the head-up orientation in a Layout position, straight knees, outfacing on the opposite side of the flight chamber from the beginning, at the same level as the beginning, presenting the side of the body to the Judges.

### SFR-3 Tight Tucked Double Back Loops

- At the beginning and end, the Performer is in belly-down orientation, presenting the side of the body to the Judges.
- Two (2) consecutive back loops in a tight tuck 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 and horizontally centred in the flight chamber.

#### Judging Guidelines:

- When the Performer stops between the loops, the maximum score will be 8.0 points.
- When the loops are not tightly tucked, the maximum score will be 5.0 points.
- 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 points.

## SECOND COMPULSORY ROUND (ROUND 4)

### SFR-4 Front Layout Full Twist Loop 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 entire sequence must remain horizontally centred in the flight chamber.
- The sequence must end on the same heading as the beginning.

#### Judging Guidelines:

- When the Performer stops between the loops, the maximum score will be 8.0 points.
- When the twist is performed within the second loop but not evenly spread, the maximum score will be 8.0 points.
- When the twist is not performed within the second loop (e.g., the twist starts and/or finishes too soon or late), the maximum score will be 7.0 points.
- When the twist is not complete but the move finishes with the correct heading (e.g. two half twists, or a half twist and a half pirouette), the maximum score will be 6.0 points.

### SFR-5 Manna's Space Lab

- At the beginning and end, the Performer is in a Layout position, head-up orientation, on the same heading, presenting the side of the body to the Judges.

- A full 360° back loop is performed.
- 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.

#### Judging Guidelines:

- If the Layout position is not shown at the start or finish, the maximum score will be 8.0 points (7.0 points, if no Layout shown for start and finish).
- For each instance when the step is too short (less than 90°), 0.5 to 1.0 points will be deducted (depending on how short the step(s) was/were made).
- For each instance the legs switch without a stepping action, 1.0 points will be deducted.

#### 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.
- The entire sequence must remain horizontally centred in the flight chamber.

#### 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.

#### Judging Guidelines:

- If no head-down split position is shown at the end, the maximum score will be 7.0 points.
- If the head-down split position is shown at the end with the knees bent, the maximum score will be 7.5 points.
- If only one Thomas Flair (instead of 1.5) is shown before the head-down split, the maximum score will be 7.0 points. If the 90° straddle is shown at the start of the Thomas Flair but not maintained, the maximum score will be 7.0 points.
- If the straddle is shown with 70-80° between the legs during the Thomas Flair, the maximum score will be 7.0 points.
- If the straddle is shown with less than 70° between the legs during the Thomas Flair, the maximum score will be 5.0 points.

## ADDENDUM B

### BASIC BODY POSITIONS, ORIENTATIONS, ROTATIONS AND PATHWAYS

- DEFINITION BODY PARTS

A Body consists of the entire Performer and his/her equipment.

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.

- BODY POSITION

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).
- 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).
- 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).
- Both legs are together with the knees straight, both legs must 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).
- Both legs are together and straight at the knees with 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°.
- 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.
- **ORIENTATIONS**  
There are six (6) basic orientations (not including diagonal orientations) which a body can have 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 ceiling).
  - 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 ceiling).
  - C-5. Head-down Orientation
    - The torso is vertical with the head down, pointing directly down into the wind (towards the cable floor).
- **ROTATION AXES**  
Most moves involve a form of rotational motion of the body. A total of five (5) axes are used to describe the six (6) possible basic rotational motions.
  - D-1. Wind Axes  
There are two 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 ceiling 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 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 tailbone, 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.

- **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. During a right flat turn, the upper body is moving towards the right shoulder, or vice versa.

**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. During a right pirouette, the front of the chest is rotating towards the right, or vice versa.

**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. During a right barrel roll, the front of the chest is rotating towards the right, or vice versa.

**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 travelled 360° around the horizontal axis from the point at which it started. During a right Cartwheel, the upper body is moving towards the right shoulder, or vice versa.

**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 travelled 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. For example, a Pinwheel is 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 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° flat turn or side loop. For example, a Flip Through is a horizontal twist.

- **CIRCULAR PATHWAYS**

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

#### Inface

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

#### Outface

- 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 in-facing).
- An Eagle may begin from any orientation in this progression.
- A Half Eagle is when the Performer has travelled head first through 180° of vertical orbiting.
- A Full Eagle is when the Performer has travelled head first through 360° of vertical orbiting.

#### 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 in-facing).
- A Reverse Eagle may begin from any orientation in this progression. A Half Reverse Eagle is when the Performer has travelled feet (or tailbone) first through 180° of vertical orbiting.
- A Full Reverse Eagle is when the Performer has travelled feet (or tailbone) first through 360° of vertical orbiting.

**ADDENDUM C****TECHNICAL SCORE**

The technical score 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, technical factors are:

<b>Easier</b>	<b>More Difficult</b>
Fixed orientation with large support base Horizontal axis rotation with small support base	Fixed orientation 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 not held on heading	Asymmetrical body shape 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 one (1) axis	Rotations on more than one (1) axis (in which use of three (3) axes is more difficult than use of two (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 the technical score. Performers are not expected to demonstrate all the above 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. Judges are expected to apply additional knowledge and understanding of difficulty.

**ADDENDUM D****SOLO FREESTYLE ROUTINE DESCRIPTION**

Fill electronically and send together with the Video.

Performer #	Performer Name & State:		
State the order in which the Compulsory Sequences will be performed			
First Compulsory Round, Round 2			
Second Compulsory Round, round 4			
Free Routine Working Time: _____ seconds	The Free Routine description covers the following rounds: ALL - 1 - 3 - 5		

If performing more than one Free Routine, please complete a Routine Description sheet for each Free Routine and circle above which rounds it will be performed.

#	Name/Move of Sequence	Difficult Value (For Judges use)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		