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## **ADDENDUM B BASIC BODY POSITIONS, ORIENTATIONS AND ROTATIONS**

### **A. DEFINITION BODY PARTS**

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

The parachutist'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, and parachute, but excluding arms, legs, head and neck.
- arm: the whole arm from the parachute harness, 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 parachute harness, including the upper leg, knee, lower leg and foot.
- upper leg (thigh): the part of the leg between the leg strap of the parachute harness 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.

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

### **B. 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  $180^\circ$  (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  $180^\circ$  (if viewed from the side).
- If the legs are in a creative position, at least one thigh must show an angle greater than  $180^\circ$  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 be 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  $180^\circ$  (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  $180^\circ$  (if viewed from the side).

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- 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.

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## **C. ORIENTATIONS**

There are six (6) different basic orientations (not including the diagonal orientations) which a body can have to the relative wind (or ground when at terminal velocity without horizontal movement). These define which way the torso is oriented.

### **C-1. Belly-down Orientation**

The torso is horizontal, on its front, facing down towards the relative wind.

### **C-2. Back-down Orientation**

The torso is horizontal, on its back, facing upwards away from the relative wind.

### **C-3. Sideways Orientation**

The torso is horizontal, on its side, with either side facing towards the relative wind. At terminal velocity without horizontal motion, the chest is facing the horizon.

### **C-4. Head-up Orientation**

The torso is vertical with the head up, directly away from the relative wind.

### **C-5. Head-Down Orientation**

The torso is vertical with the head pointing directly into the relative wind.

### **C-6. Diagonal Orientation**

The diagonal orientation is with respect to the horizon line and ground at terminal velocity. The torso is on a diagonal with respect to the horizon line and ground, 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 the six (6) possible basic rotational motions.

### **D-1. Wind Axes**

There are two (2) inertial axes which stay fixed with respect to the relative wind (or ground when at terminal velocity with no horizontal motion).

#### **Vertical Axis**

The vertical axis remains parallel to the relative wind, (pointing from the sky to the ground when at terminal velocity with no horizontal motion).

#### **Horizontal Axis**

The horizontal axis is any axis perpendicular (90°) to the relative wind, (pointing to the horizon when at terminal velocity with no horizontal motion). It may have any heading (pointing towards any desired point on the horizon).

### **D-2. Body Axes**

There are three (3) body axes which stay fixed with respect to the 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 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**

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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 travelled 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 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 in the sideways orientation)**

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

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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.

## **F. CIRCULAR PATHWAYS**

There are two (2) basic types of circular pathways a Performer(s) may follow with respect to another team member, which can be performed either infacing or outfacing. Circular pathways may have embedded moves (e.g. Carousel).

### **In-face**

The front of the torso faces inward towards the concave side of the pathway, while moving about an imaginary centre.

### **Out-face (Blind)**

The front of the torso faces outward away from the concave side of the pathway, while moving about an imaginary centre.

### **F-1. Carving**

The Performer's body traces a circular path about an imaginary centre 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 about an imaginary centre 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**

An Eagle begins with each team member in the opposite orientation, facing away or toward one another. An Eagle may be performed by a Performer(s) with their Videographer or by two Performers with each other. The team members travel 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, maintaining continuous eye contact). An Eagle may begin from any orientation in this progression. A Half Eagle is when 180° of vertical orbiting is complete. A Full Eagle is when 360° of vertical orbiting is complete.

#### **Reverse Eagle**

A Reverse Eagle begins with each team member in the opposite orientation, facing away or toward one another. A Reverse Eagle may be performed by a Performer(s) with their Videographer or by two Performers with each other. The team members travel 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, maintaining continuous eye contact). A Reverse Eagle may begin from any orientation in this progression. A Half Reverse Eagle is when 180° of vertical orbiting is complete. A Full Reverse Eagle is when 360° of vertical orbiting is complete.