

USPPA Competition

Task Rules & Scoring

National USPPA Paramotor Competition
As of Feb 1, 2011



An event is a group of tasks flown by a field of competitors over a period of one or more days. The event must be completed within 7 days from the first day any competitor scores. The field must be open to all USPPA members who meet the minimum qualifications although cut-off dates are at the organizers discretion. Qualification can be done allowing the organizer to use the top percentage of competitors from a previous event.

General Rules

The same wing and motor must be used for all tasks. In the event of an equipment failure, identical gear may be substituted. For power units, that means the same make and model using the same power plant having the same thrust and fuel burn. For wings that means the same make, model and size.

Pilots may be required to receive on FRS channels 1 through 7 well enough to understand instructions while in flight. Other equivalent or better communications may be required.

Pilots may not receive any assistance of any kind either physically or over the radio except in an emergency. Any such assistance zero's the pilots score for that task. For example, if a pilot needs assistance to get launched, then he earns no points for the launch.

Only members of the USPPA may compete in sanctioned events. Rankings will be maintained and published based on the scoring rules below and may be published in various media for each qualified competition.

The USPPA will sanction any requested event where the competition committee believes the organizers have an adequate location and sufficient resources to run it safely and fairly. The request should be made by emailing theUSPPA@gmail.com writing to the USPPA address, or by talking with any competition committee member at least 7 days before the event begins. The organizer must supply materials such as sticks, targets, measuring equipment and suitable flying site.

Pilots must pay any required entrance fee and sign the competition waiver before being allowed to compete.

Acknowledging that there is increased risk in competition, pilots must have at least 50 logged solo flights, a PPG2 rating, or a USPPA instructor sign-off to compete.

Scoring Overview

Pilots will receive points for each task based on formulas below. All qualifying task scores will be added together to determine the pilot's event total. In order for a task to qualify, at

least 50% of the competitors must have a non-zero score in that task. In order for an event to count towards national ranking, at least 50% of the pilots must score.

The formulations on the current scoring spreadsheet take precedence over these listed here. A copy of that spreadsheet is available at www.USPPA.org.

Scoring Over Multiple Competitions

For national standing purposes, at the end of the event the pilot with the highest score is granted 1000 points. Each lower scoring pilot receives a percentage of 1000 points based in his final score as a percentage of the winner's final score. For example, if the first place pilot garners 2000 points and the second place pilot gets 1800 points during an event (which is 90 percent of the winner's) then for national tracking purposes the first place pilot get 1000 points and the second place pilot 900. At least Five pilots must compete (have a non-zero score) for a competition to count towards national ranking. If only 5 pilots compete, the maximum score attainable is 500 points. If 15 or more pilots compete then the full 1000 points are attainable. Any number between those two gets the appropriate points.

So if 5 people compete, the winner gets 500 points to his score for winning. If 6 people compete the winner gets 550 points added to his score for winning and so on.

Over the course of a calendar year, the pilots highest 2 average event scores will be used to maintain his/her standing in the national rankings.

In the event of a tie for 1st 2nd or 3rd place in any event, the launch and spot landing tasks will be re-flown until those places are determined. Plaques or certificates (depending on the organizers) are given out to each pilot who places.

On All Tasks

Any fall, injury or damage to equipment during a task results in that task's score being zeroed. The Judge working a task has final say in all matters relating to his/her task but they are encouraged to use video, if available, to decide. In the event of two judges, one lead judge will be assigned and have the final say although the lead is encouraged to get agreement with the other judge.

A fall is when anything but the pilots feet touch the ground within 5 seconds of touchdown.

Anything that results in equipment damage during a task will zero the points for that task.

Pylons (Sticks)

On Courses that use pylons, when the task calls for a kick of the pylon, it must be clear to the judge that part of the pilot's foot or leg touched the pylon. Officials may require that pilots strike pylons above a certain point in order to prevent breaking the sticks. In that case, a visible mark must make the striking area visible. If so designated, hitting the stick below that point will be counted as a miss.

On courses where the pilot must go around, or stay between pylons, he must not touch the pylon with any part of his person or equipment. Such contact is considered a miss of the pylon.

Task List

Foot Drag

The pilot flies through the first gate dragging at least one foot and continues through as many gates as possible until passing the last one. At least one foot must remain on the ground and points are scored each time a gate is passed. It is timed and greater speed is beneficial. The gates must be passed in order.

Scoring:

1. 100 points per gate passed. If a gate pole is touched, then no score is earned for that gate. Gate points count even if the foot happens to be up at the time of passing as long as the pilot flies between the gate markers.
2. 20 points are subtracted each time or each second (if it lasts more than a second) that both feet leave the ground. In the event a pilot runs, each footstep is counted as having both feet leave the ground so 10 steps would mean 200 points are deducted.
3. Time Points: FT=Flown Time, ST=Shortest Time completed, LT=Longest Time completed, TR=Time Range (LT-ST), time points awarded = $100 \times (LT-FT) / TR$.
4. A zero score is assigned if the pilot falls, his wing touches the ground or the gates are passed in the wrong order.

Cloverleaf (see Graphic)

The pilot kicks (or passes within 3 feet) the center stick then rounds the upper left one and flies according to the diagram, rounding the correct corner stick and kicking the center stick each time. The task is timed and greater speed is beneficial. Time runs from passing the first stick to the last stick. The sticks must be kicked and rounded in order. It is ok if the pilot's cage touches the center stick but a corner stick is considered missed if the pilot touches it (a touch includes the pilot or any part of his equipment).

A score of ZERO will be assigned if:

1. The pilot does not make a good faith attempt at each stick,
2. The course is run in the wrong order,
3. Any corner stick is circled in the wrong direction.
4. The pilot touches the ground.

Scoring:

1. 40 points for each successful kick of the center stick (Total 200 points)
2. 300 points are allocated according to an 'adjusted time', where the 'adjusted time' is equal to the actual time to fly the course, plus penalty time.
3. For each of the first two misses, which include missing EITHER a center kick or a corner stick: Penalty of the greater of: ten seconds; or 15% of the fastest unadjusted time.
4. For misses after the first two, the penalty doubles. For example, three misses would result in a minimum penalty of 40 seconds added to the pilot's actual time.

5. Fastest adjusted time is awarded 300 points. The slowest allowed adjusted time will be 150% of the fastest adjusted time. Adjusted times equal to or greater than the slowest allowed adjusted time will be awarded zero points, and adjusted times between the slowest and fastest adjusted times will be calculated by linear interpolation, according to the spreadsheet formula.

Slow/Fast

The pilot flies straight through the course as slow as possible then goes around flies straight again as fast as possible. The gates may be sticks that are kicked where the first stick is gate 1 and the last stick is gate 3. Each run is timed from gate to gate and the greater the difference, the higher the score. Time runs from the pilot's head passing the first stick to the last stick or first to last kick if kicking sticks is used. The pilot must complete both the slow and the fast portion, within 5 minutes, to get any points.

A score of ZERO will be assigned if:

1. Any part of the pilot or his/her equipment touches the ground.
2. When gates are used (a pair of sticks that the pilot flies between): if the pilot or his equipment touches a stick, or The pilot climbs above the height of the sticks (2 m) with the lowest part of his body (not motor).
3. When sticks are used, if the pilot fails to kick a stick with his feet.
4. The pilot is observed to be turning left and right, or climbing, beyond normal turbulence corrections while flying the slow portion of the task.

Scoring Points:

1. $PilotRatio = LongTime/ShortTime$, $MinRatio = \text{minimum achieved PilotRatio}$, $MaxRatio = \text{highest achieved PilotRatio of all competitors that flew both halves}$, $DiffRatio = \text{difference between the highest and the lowest ratios}$.
2. $Points = 200 * (PilotRatio - MinRatio)/DiffRatio2$.

Takeoff

The pilot makes a clean takeoff in the fewest attempts. For maximum points the wing should not touch the ground after initial inflation.

Organizers may set launch time ranges in which pilots must be ready at the beginning of their assigned range. Not being ready incurs a scoring 20 point scoring penalty. Times will be chosen using some random method and will be used for any task requiring ordered launching for that day.

New numbers are generally chosen on each day. A pilot is allowed to be postpone a launch, without penalty, only due to strong winds (unsafe to fly) or wind direction change. In order to postpone a launch under this exception, he must first be clipped in and ready to launch then tell the launch judge he is postponing due to winds. If a pilot is not ready he will be placed further back in the launch order.

Scoring Points:

1. 300 points are awarded for making the first attempt, 200 points from making the second and 100 points for making the 3rd.
2. After a pilot is cleared to launch, 20 points will be deducted each time the wing is brought up off the ground and no launch is made.

3. A launch is considered begun if the pilot starts running in a forward inflation or gets at least halfway around while turning to run forward after a reverse inflation.
4. A zero score is assigned if the pilot falls after being cleared to launch.
5. If launch times are being used then a 100 point penalty will be applied, up to two times, each time the pilot is not ready. After two times the pilot simply launches when ready and when the launch judge has an opportunity

Power Off Landing

The pilot flies over the target (round disk of between 8 and 14 inches diameter) at least 200 feet above ground level (AGL) and shuts off the motor. He then lands on, or as close as possible to the target with minimal energy (traveled distance) and stops. The point of first foot contact is the touchdown and is the most important element of scoring.

Height above the target will be verified by 1) requiring the pilot to do a full 360 degree turn after flying over the target or 2) by having at least 30 seconds elapsed from when the motor is shut off. Organizers may require pilots to use both methods.

In the case of landing simultaneously on two feet, the distance to target will be considered zero if one foot touches the bullseye (landing target). If no target touch is made, the touchdown distance will be the farthest point of the farthest foot.

Part of the score comes from having minimal distance traveled. Traveled distance is from initial contact to standing still and is measured from the touched point to the center of the farthest foot where the pilot stopped.

A ZERO score is assigned if

1. Except as noted in the next paragraph, any part of the pilot's body or paramotor touches the ground, other than his/her feet until after the wing first touches down. *After* being cleared by a judge, it is permissible that the pilot may kite the wing out of the circle.

It is permissible for the cage to momentarily touch the ground. Such touch must not be for more than one second and must incur no damage to be allowed, otherwise it is counted as a fall.

2. The motor was not shut off except: the judges *may* allow a pilot to land with the motor running under the following conditions:
 - a. the pilot is unable to shut off his motor and
 - b. he clearly stows the throttle in such a way so as to be visibly unable to use it and
 - c. the pilot lets the throttle dangle so that it is obvious he had no control over it.

Scoring Points:

Initial contact scoring is based on the first point of contact.

1. 250 points for touching the target. If one foot touches visibly before the other, the distance to the heel of the first touchdown will be used. If the landing is on both feet simultaneously and either foot touches the target, it will be counted as a bullseye. Touching within a half-second is considered simultaneous.

2. If the touch point is outside the target, the closest distance between the target center and the touch point is recorded. The touchdown points are then calculated by the following formula, where D is the distance:
3. Distance Traveled scoring: DT=Distance Traveled SD=Shortest Distance Traveled LD=Longest Distance Traveled DR=Distance traveled Range (LD-SD)
4. Points awarded = $100 \times (LD-DT) / DR$ [Note: If, in the unlikely event everyone has the same travel distance, all will get 100 points.]
5. Total score for the task is the sum of the initial contact points and the distance traveled points.

Power On Touch & Go Landing

The pilot flies the pattern and touches down on on standard target as described above, then runs/walks exactly 10 steps (including the first touch) followed by a takeoff. The point of first foot contact is the touchdown and is the most important element of scoring. A part of the score comes from having as close to 10 steps as possible. The 10 steps must be made within 10 seconds. The walk/run portion is only counted within 50 meters of the touchdown.

A ZERO score is assigned if any part of the pilot's body ore equipment touches the ground, other than his/her feet, from touchdown through liftoff. The task is completed when the pilot has climbed at least 50 feet.

Scoring Points:

1. Touchdown distance points are awarded according to the same formula as the Spot Landing.
2. 100 step points are awarded for traveling exactly 10 steps. 20 points are deducted for each step over or under 10. The first touchdown is step 1 and each foot fall is another step.
3. Step points are zeroed if the pilot steps beyond 50 meters from the center point, or if the pilot is on the ground for more than ten seconds before lifting off.

Kite War

All competitors kite their wing up when the judge starts the event. Pilots attempt to keep their wing from touching the ground as long as possible: last one up wins.

The wing used must be one the pilot has flown or be within the recommended weight range (body weight only). This is to prevent the use of an abnormally small wing which could proffer an advantage. A box will be outlined (marked by cones) and pilots must remain in the box. The box should be sized so as to allow all pilots a reasonable layout area. Pilots location in the box will be determined by experience. Those with the most experience must be placed in the rearmost (downwind) location.

For the task to count towards any pilots score there must be at least 5 competitors and at least one wing that remains up for 2 minutes or more.

The wing fabric must not touch the ground or another pilot. Once this happens the pilot must ball up the wing and exit expeditiously without touching or interfering with other competitors or their gear. The task starts on "Go" when the judge shouts "Ready, Set, Go". The task ends at the point where only one wing remains up or in the box. From start to finish is the task's time.

Scoring Points:

1. 100 points for being the last one up or in the box
2. 50 points for the second to last one up or in the box.
3. 25 points for the third to last one up or in the box.
4. 10 points for keeping the wing up at least 2 minutes (is additive for the placers)

Bomb Drop

Light weight, approved and marked “bombs” will be dropped from any height while flying. Where the “bomb” stops is the scored position. ORD=Outer Ring Distance, FDD=Farthest Drop Distance where the worst scoring bomb stopped as a distance from the center. The task ends 5 seconds after the bomb is dropped.

A ZERO score is assigned if

- Any part of the pilot’s body or equipment touches the ground during the task (from 5 seconds before to 5 seconds after the bomb is dropped).

Scoring Points:

1. 100 points for hitting the center.
2. 50 points for hitting on or inside the inner ring.
3. 30 points for hitting on or inside the middle ring.
4. 15 points for hitting on or inside the outer ring.
5. $100 \times (FDD - DD) / FDD$.

Efficiency

Each pilot starts with an empty gas tank and fuels exactly 2 liters of fuel (including oil as appropriate). He launches and tries to stay up as long as possible, up to 120 minutes in accordance with the following:

1. Pilots must have the approval of the launch judge prior to taking off so their time can be recorded.
2. Pilots should announce their landing on the radio.
3. Pilots are required to note their launch time and landing time which will be used in the case judge’s time is not available. Pilots must remain in view of the field at all times.
4. A maximum of 300 points will be available, at the rate of 2.5 points per minute aloft. No extra points will be awarded for any time after two hours.

Japanese Slalom

Three 2-meter tall sticks are laid out in a straight line 50 meters apart from each other (1, 2, and 3). A fourth stick is placed 50 meters perpendicular to stick 2 (less than 50 meters is allowed due to site limitations) from the center stick. The course should be laid out into the wind as much as possible.

Time starts with the first kick of stick 1 and ends with the last kick of stick 3.

Pilot kicks sticks 1, 2, and 3 in a row then comes around to slalom sticks 1, 2, and 3, then comes around to kick sticks 1, 4, and 3. A valid kick requires stick contact with a part of the pilot's foot or leg. Paramotor contact is permissible but does not, on its own, constitute a valid kick.

The sticks must be kicked and rounded in the order depicted by competition organizers. A valid rounding of a stick requires the pilot's body and motor to clearly go around in the requisite direction. Any touch of the stick by pilot or his equipment invalidates that rounding. There are a total of 6 sticks that are kicked and 3 that are rounded for a total of 9 available.

If you miss a stick, including the first or last one, continue. Time is taken when you pass the it.

Scoring Points:

The downloadable USPPA scoring spreadsheet is the final authority for scoring. In general, getting all 9 sticks is the most important with time a close second. It is possible to miss a stick and still win but only if your time is significantly better than opponents who got all 9 sticks.

1. N = number of targets kicked or passed correctly. Flying in the wrong order will result in a big penalty since you'll only get credit for those done in the right order.
2. T = time from first to last kick.
3. $Q = N^3 / T$
4. $P_q = 500 * Q / Q_{max}$
5. $P_s = 500 - 30 * (T - T_{pmin})$. Minimum $P_s = 0$; if $N < 9$, $P_s = 0$.
6. $P = P_q + P_s$

Note: Q = pilot score, Q_{max} = best score for the task, P = Total score