

RCPRO Warbird Racing Rules

January 1, 2010 – RCPRO Accepted

Purpose:

The following is a description of the event and the rules that are to be followed in conducting RCPRO Warbird Races.

Pilot Qualifications:

Pilots must show proof of being current members of the AMA. Pilots operating transmitters on the HAM band must additionally possess a current FCC license. Each pilot will be allowed one caller/crew member per aircraft entry. All pilot and caller/crew members must sign an AMA Waiver Release. Only those workers and contestants who have signed the release will be allowed in the pit area. All spectators must be in approved spectator areas. All pilots must take off, fly heat laps, and land the aircraft. In the event of an emergency, the aircraft can be landed by another pilot resulting in disqualification for that heat. Unsportsmanlike conduct by a pilot, caller, or crewmember is grounds for the pilot's disqualification from the event. Pilots, callers, and crewmembers will not be permitted to consume alcoholic beverages and compete in the event. Flying or operation of an aircraft, in an erratic or unsafe manner will not be tolerated, and pilots will receive only one warning. Further violations will result in a black flag and disqualification from the heat. The flagman or CD's decision, in this regard, is final. The contest director may, at their discretion, require any pilot to demonstrate the safe flying characteristics of an entered aircraft, if the pilot's capability with that aircraft in the entered class is unknown. No timing devices (watches, stopwatches, transmitter timers, etc.) will be allowed at the pilot station during the heat racing.

Model Aircraft Requirements:

The only models qualified to be entered in a RCPRO Warbird event must be scale models replicating heavier than air, fixed wing, propeller driven, man carrying, military aircraft that were in production after January 1, 1937, or scale models of non-military aircraft that have raced in the unlimited category of the Reno or Mojave Air Races or in an unlimited air race affiliated with the Unlimited Air Racing Association. To "have raced" means that the aircraft must have crossed the starting line while participating in an official heat. Civilian markings, paint schemes, & modifications to military aircraft are allowed. Civilian aircraft that were not designed for, but can be documented and were used by the military, will be allowed.

Engine/Motor & Wing Area Requirements:

There will be a minimum wing area of 400 square inches for single engine/motor aircraft and 500 square inches for a multi engine/motor aircraft.

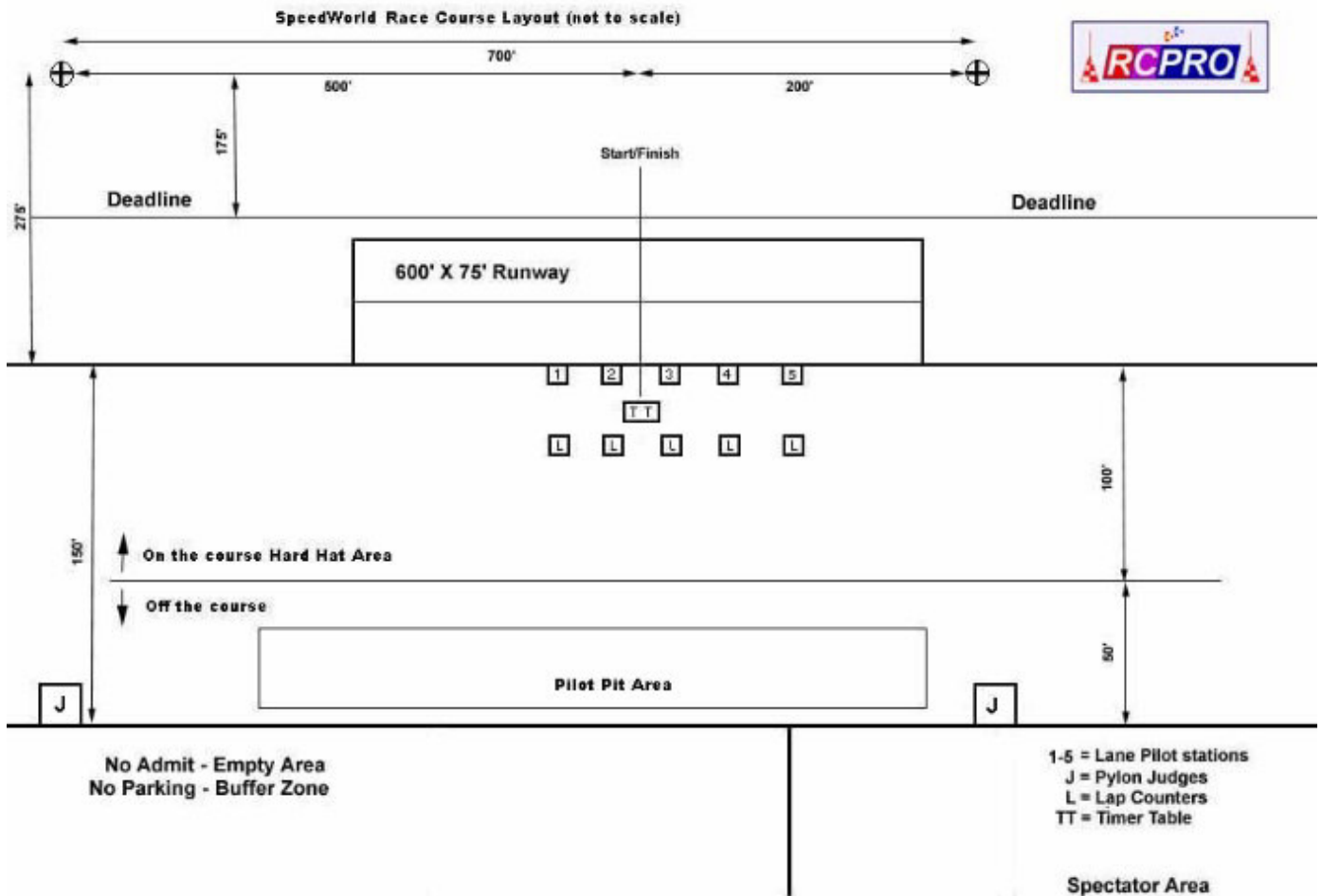
The maximum weight of any plane will be 18 lbs ready to fly.

Power may be Glow, Gas or Electric. Since there are no restrictions for power vs wing area, we caution all contestants to carefully select a combination that will result in a model that can safely fly the course and remain within the time constraints for the class in which it is being flown.

At the CD's discretion, any plane/pilot which is deemed questionable may be asked to fly a demonstration heat prior to racing. The CD has the right to disqualify any aircraft or pilot which he feels may create a safety risk.

Course

Typical Course Layout. Note variations from the 2 pole course as shown in the AMA Rulebook. AMA Waiver Required for this configuration.



Muffler Requirements:

Mufflers or tuned pipes are required on all 2-stroke engines. Some venues may also require mufflers for 4-stroke engines.

Safety Inspection:

The following safety criteria will be used to inspect all aircraft that are flown in RC PRO Warbird Races. Contest directors, inspectors, and contestants should equally be aware that following these criteria to the letter, is extremely important in helping to minimize individual liability during the course of the race. During registration, a safety inspector who is a knowledgeable individual, appointed by the contest director will examine each aircraft. Specific items to look for are as follows:

1. Short pieces of rubber tubing used to secure all clevises to prevent them from becoming disconnected in flight. Clevises using a bolt and self-locking nut fastener, do not require safety tubing.
2. All fasteners holding the motor to the motor mount, and the mount to the firewall, must be in place and secure.

3. Receiver and battery pack should be protected against vibration in accordance with the equipment manufacturer's recommendations. Servos operating the elevator and ailerons shall be of sufficient size (torque) for the weight and speed of the aircraft. Airborne battery packs must be at least of 500 mah capacity.
4. Washers will be used on all screws holding the servos to mounting trays, and also on all screws holding the tray to the rails (all washers will be approximately the same diameter as the grommets). Servos mounted directly to rails will also have washers on the mounting screws. If screw head diameters are as large or larger than the grommet diameter of the servos being used, or if screws with washers built into the head (such as those provided with Futaba, JR, and Hitec servos) are being used, separate washers will not be required. All servo trays, if used, will have at least one extra safety screw (not necessarily turned down tightly) placed between the grommets on the rear or front of the tray to prevent the tray from slipping out of the grommets in flight. Servos must be mounted by using fasteners as recommended by the equipment manufacturer. The use of servo tape or any adhesive, cement, or silicon to directly attach a servo into the aircraft without the benefit of shock absorbing grommets with fasteners, is unacceptable in racing aircraft.
5. When servo equipment manufacturers supply a grommet servo mounting system with brass eyelets, the brass eyelets must be correctly installed. The eyelet must be inserted into the grommet with the rolled end of the eyelet against the material that the servo is being mounted to. This will help prevent collapsing the grommet by over-tightening the fastener.
6. A keeper, or collar, will be on all push rods that have a right angle bend that connects them to the servo output arms. Z-bends are acceptable. If clevises are used at both ends of a push rod, one must be secured, so that the push rod will not turn. EZ connector type fasteners are not permitted on servo output arms and push rod ends that control flying surfaces such as ailerons, elevator(s), and rudder(s).
7. All control surfaces will be firmly attached on the hinge line without excessive play, (at the discretion of the safety inspector).
8. Positive thread type wing bolts or screws will secure the wing in place on all two-piece aircraft.
9. A positive method of holding wheels onto axles will be used, and the wheels shall not bind.
10. The entire aircraft shall be inspected for any stress cracks.
11. Every aircraft shall have the owners name, AMA number, and phone number affixed to the inside per the AMA safety code.

If an aircraft fails to conform to any of the above inspection criteria, it shall be repaired before it can be entered. Any aircraft damaged after it has been safety inspected, shall be re-inspected before it is allowed to fly again. Aircraft with a known history of safety or performance problems should be rejected unless acceptable changes have been made to eliminate problems.

Declared Racing Class: Breakout Times:

The following breakout times will be used in the fixed-bracket racing format. There are no adjustments to these breakout times.

Bronze class: 2 minutes, 30 seconds

Silver class: 2 minutes

Gold class: 1 minute, 30 seconds

Important!

Since we rely on the breakout times to control safety, Any recorded time faster than 1:25 will be posted as 00:00.00.

Heat Size, Matrixing, & Number of Rounds Flown:

Once the registration and safety inspections have been completed, and the number of entries in each class are known, maximum heat sizes will be set for each class, at the contest director's discretion, between 3 and 5 airplanes per heat. The maximum heat size must be decided before racing begins, and may not be changed thereafter. Matrixing, (determining which contestants will fly against each other in each heat), will be determined randomly except for the final heat of the event. The final heat will be determined by point position from the preceding heats, i.e. the 1st 4 point positions will race against each other then the next 4, etc. Racing will consist of as many rounds of heats in each class, as time will permit, over the duration of the event. Points in all rounds flown will be totaled to determine the winners in each class.

Engine Run-up Area:

Testing of engines must be conducted within the designated engine run-up area, and must be accomplished without the use of a transmitter once heat racing has begun, unless positive controls are in place to eliminate frequency conflicts with the racing aircraft.

Engine Starting Procedures:

After the aircraft flying in the heat have been identified to the pylon judges, and radios have been checked to insure they are operating, the starter begins a 90-second timing device. Pilots and their callers then can start their engines, and have 90 seconds to get their engines running and launch their aircraft. Pilots are allowed 1 takeoff attempt. Once either of their aircraft main wheels leaves the ground an attempt has been made. If during the 90-second window an engine dies and a takeoff attempt has not been made, the plane may be restarted.

Take Off Procedures & Direction:

Contestants may take off on a first-come, first-served basis, but the starter will control access to the runway. Callers will carry, or guide, the pilot's aircraft onto the runway, and should take great caution when handling aircraft with the engine running, so as to not pose danger to themselves or others. Taxiing of aircraft onto the runway to take off is prohibited. The starter will determine what direction aircraft must use to take off. This will generally be dictated by the wind direction. If the take off direction is from right to left, the aircraft must be carried to a position on the runway beyond the left most pilot station and released from there. This is a safety procedure to help compensate for aircraft that tend to turn to the left on take off, due to engine torque and/or wind.

Heat Start Procedure:

After the 90-second engine start time has elapsed the 45-second countdown clock is started. The announcer will advise as the clock counts down to 30 seconds, 15 seconds, and then countdown from 10 seconds to the start of the heat. The heat begins when the clock reaches zero and the starter drops the green flag. At this time all aircraft are to be to the left of the start/finish line. Failure to meet this requirement is a jumped start, and results in disqualification for the heat. Loops to avoid jumping the start are not permissible. Pilots, who find they are about to jump the start, can execute a legal sharp left pitchout turn circle back to the start/finish line.

Heat Racing Procedures:

The heat will consist of 10 laps in a racetrack pattern flown past and around each pylon pole without crossing the deadline. Pilots must also keep their aircraft above the top of the pylon poles. Pilots who fly near the deadline, or who briefly drop below the top of the pylon poles, will receive one warning from the flagman or assistant flagman. Any aircraft crossing the deadline will result in black flag disqualification from the heat. Repeated infractions of the deadline, or flying too low, or other unsafe erratic flying can disqualify the pilot for the remainder of the day, and the pilot may be required to demonstrate flying proficiency on the race course, before being allowed to fly on the second day. Victory rolls and other aerobatic maneuvers at any time during, or after the heat, are strictly prohibited, and are grounds for black flag disqualification for the heat. Any pilot not pulling off the racecourse after receiving a blackflag for any reason will be disqualified from the rest of the event.

Damaged Aircraft Procedures:

In the event of a mid-air collision, the starter will signal both aircraft to climb off the racecourse. Both aircraft will be given a zero for that heat. The remaining aircraft in the heat will be asked to finish the race at a higher altitude. Both aircraft involved in the mid-air will be landed as soon as it is safe. Any other damage observed by the started (flutter, loose control surfaces, etc.) will result in a blackflag for that heat and the aircraft will be landed when safe. Before any damaged aircraft is allowed to fly in a subsequent heat, it must be inspected by an approved safety inspector and deemed airworthy.

Heat Finish Procedures:

For each competing pilot, a racing heat will be concluded when the aircraft has flown 10 consecutive laps and it has crossed the finish line in the air. Aircraft are not required to be under power when crossing the finish line to finish a heat, and may complete the heat by gliding across the line. The starter will wave the checkered flag as the lead aircraft crosses the finish line completing the 10th lap. When the heat is finished, the assistant flagman will record the finish positions of all aircraft and then contact the pylon judges by radio to ascertain if any of the competing aircraft had pylon cuts. Noted cuts will be recorded on the heat card. The assistant flagman will also obtain the heat time for each aircraft from the timing devices and record those times on the heat card. In the case of a "photo finish" the winner will be declared by the starter and is not reviewable.

Landing Procedures:

Pilots who have completed the heat should pull up, gradually climbing to altitude after crossing the finish line, and hold at altitude until all aircraft have finished racing. Callers should advise the starter when their pilot is ready to land, and afford the starter an opportunity to affirm landing clearance. Landing of aircraft should be accomplished in a timely manner to expedite the event, and callers will recover aircraft. No aircraft will land or be retrieved without clearance from the starter.

Heat Scoring Procedures:

The first place finisher in the heat will receive the same number of points as the number of planes in the maximum heat size in the class. Each subsequent place finisher will receive 1 less point. For example, with a four-plane maximum heat size within the class, the 1st place finisher receives 4 points, 2nd place will receive 3 points, 3rd place receives 2 points, etc. Any aircraft that was unable to take off or that was to the right of the start-finish line at the start the heat receives no (0) points. Any aircraft that did not finish the heat receives no (0) points. Any aircraft that was black flag disqualified receives no (0) points. Any aircraft that completed the heat in less than the prescribed break out time for its class receives no (0) points.

Effect of Cuts on Points Awarded - If an aircraft cuts one pylon, by not flying past it, that aircraft will only receive 1 point, regardless of finish position. Any aircraft cutting more than one pylon will receive no (0) points for that heat. Aircraft finishing without cuts behind aircraft receiving cuts, will be have their finish position advanced one place in their standing for each aircraft ahead of them that received cuts. The following four-plane heat example illustrates the point scoring system:

1st place finisher with 1 cut - 1 point

2nd place finisher with 2 cuts - 0 points

3rd place finisher with no cuts - 4 points

4th place finisher with no cuts - 3 points

Race Scoring Procedures:

Race scoring shall be the sums of all heat scores. There will be no rounds thrown out. Ties will be determined by the fastest legal time posted by the planes flown in that class. Multi engine aircraft will be awarded a 10% bonus to their final score.

Protests:

It is unfortunate that sometimes disagreements arise when conducting any sporting event. Kindly remember to be calm and sportsmanlike when discussing disagreements with the contest director. If a contestant believes that he/she has a legitimate complaint regarding a specific aspect or incident, the protest should be registered with the contest director within a timely manner. Only contestants may file a protest and protests must be filed prior to the conclusion of an event. The contest director is the only point of contact for protests and his ruling will be final.

Safety, Safety Equipment, and Liability Waivers:

All provisions of the Official Academy of Model Aeronautics National Model Aircraft Safety Code are incorporated into these rules by reference.

The Academy of Model Aeronautics requires that all contestants, callers, crew members, and event officials & workers participating in any organized racing event, wear helmets (hard hats), that are approved by OSHA, DOT, ANSI, SNELL, NOCSAE, or a comparable standard, while "on the race course", in accordance with the AMA's definition of "on the race course". Furthermore, all pilots, callers, and crewmembers are required to sign the AMA provided liability waiver form as a precondition to entry in the event. All event officials and workers who may be "on the course" are also required to sign the liability waiver form. There are absolutely no exceptions to these policies, and the RCPRO requires that there be strict compliance and enforcement at all times. Contestants, callers, and crewmembers are required to provide their own helmets (hard hats) that meet these requirements. Willful disregard of these policies will result in ejection from the event. RCPRO further recommends, that pilots, callers, crewmembers, and event workers in close proximity to areas where engines are started, wear appropriate eye and hearing protection. Safety equipment is the responsibility of the participants and will not be provided by RCPRO.