



# Radio Control Soaring

2017-2018



RULES GOVERNING MODEL AVIATION COMPETITION IN THE UNITED STATES

# Amendment Listing

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Amendment Topic	Publication Date	Description
Original Issue	1/1/2013	Publication of Competition Regulations
Design date for event 461	1/1/2013	Page 2/3
Release of Rules	11/30/16	Multiple
Clarification of launch buzzer(s)	5/4/2017	7.2.3
Clarification on Records and model types	10/29/2017	National RC Sailplane Records, Section 2
Re-establishing Record classes and adding ALES	03/07/2018	Multiple in Records Section
Define Class A in National Record Section	03/07/2018	National Records Section 2, Classifications
Define Class B in National Record Section	03/07/2018	National Records Section 2, Classifications
Updated National Records section	05/02/2018	Various all in National Records Section

Urgent Proposal  
passed

05/10/2018

Section 6.4.3 Scoring  
Options

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# RADIO CONTROL SOARING

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## Objective

The objective of these rules is to provide competition standards for radio controlled soaring competition tasks and events that will be used across the country (USA) in a uniform manner so that in national competitions or cross regional competitions all competitors will be familiar with the rules and be able to compete using rules they practiced or used in local competitions.

### **1. Introduction**

#### **1.1. This document will provide the rules for the following:**

1.1.1. *Basic Requirements for All Contests*

1.1.2. *AMA Thermal Duration contests that are generally referred to as "Flatland Events." These are 442 (2M), 444 (UNL), 460 (RES), 461 (NOS), 463 (ALES), 446 (Cross Country Racing).*

1.1.3. *AMA Slope Soaring Contests*

1.1.4. *National RC Sailplane Records*

#### **1.2. The following events are FAI events that are, at times, flown under AMA sanctions and carry an AMA event number, so they are mentioned here for reference.**

**445 (F3B Thermal Soaring), 446 (F3H Cross Country), 455 (F3F Slope Soaring Speed), 456 (F3J Thermal Duration), 462 (F3K Hand Launch Glider or DLG), 464 (F5J Self Launch Thermal Duration)**

For FAI events see the FAI Sporting Code. The FAI Sporting Code may be obtained from AMA Headquarters or at <http://www.fai.org>.

When this document refers to FAI events that are to be flown at AMA sanctioned contests, the FAI rules will be used other than any items specified in the sanction request that deviate from FAI rules. In addition, there may be items in the AMA General and Safety Sections on safety or procedures that overrule the FAI document because of liability items when a contest is run in the USA.

#### **1.3. In order to help navigate through the rules document, the following chart outlines the items covered in the soaring competition rules:**

Topography		
Landscape	Rule Book	
	AMA	FAI
Flatland	Single Task	Multiple Tasks
Slope	Single Task	Multiple Tasks

Class of Plane		
	Rule Book	
	AMA	FAI
A-Under 60"	3.1.1	F3K
B- Under 2M	3.1.2	
C- Unlimited	3.1.3	All other F3X and F5X events
Scale		F3Q
Combat	8.2.5	

Scoring		
Format	Rule Book	
	AMA	FAI
Simple	6.4.1	
MOM	6.4.2.1	F3B/F3J
SMOM	6.4.2.2	
Combat	8.2.14	
Aero-Tow		F3Q

Landing		
Format	Rule Book	
	AMA	FAI
Tape	6.6.2, 6.6.3	F3Q
Runway	6.6.4	
Other	6.6.5	

Specific Events		
Events	Rule Book	
	AMA	FAI
Thermal Duration	7.1	F3J, F3K,F5J
FAI Duration		FAI-F3B
FAI Speed		FAI-F3B
FAI Distance		FAI-F3B
Scale - Speed/Distance		FAI- F3Q
FAI Cross Country Racing		FAI-F3H
AMA Cross Country Racing	7.3	
Slope Closed Course Speed		FAI-F3F
Slope Soaring Combat	8.2	

Specific Tasks		
Tasks	Rule Book	
	AMA	FAI
T1- TD	7.1	F3B
T2-ALES	7.2	F5J
R1-Cross Country	7.3	F3H
Speed/Distance		F3Q
Combat	8.2	
Hand Launch		F3K

Launching		
Method	Rule Book	
	AMA	FAI
Hand Launch	7.4	F3K
Winch Launch	2.9.1	
Self-Powered	2.9.2	F5J
Aero-Tow		F3Q

**1.4. This document format is from a contest director's viewpoint for setting up a sanction request. The thought process will include these items but not necessarily in this order.**

1.4.1. Basic environment, slope or flatland soaring

1.4.2. Scope of contest, either single or multitask

1.4.3. Kind of event, thermal duration, cross country...

1.4.4. Class of sailplane used in the event, A, B, C....

1.4.5. Specific tasks to be flown, T1, T2, R1.....

1.4.6. The scoring/contest format used

1.4.7. Launching method

1.4.8. Landing tasks

## **2. Basic Requirements for All Contests and Events:**

**2.1. FAI Specifications for all AMA sailplanes classes described in (Section 3) must be met to compete in an AMA sanctioned contest.**

2.1.1. Maximum surface area (ST)—150 square decimeters (2,325 square inches).

2.1.2. Maximum flying mass—5 kilograms (11.023 pounds).

2.1.3. Loading on the ST between 12 and 75 grams/square decimeters (between 3.95 and 24.57 ounces/square feet).

2.1.4. Minimum radius of fuselage nose for sailplanes —7.5 millimeters (0.295 inches).

Exception: The FAI nose radius restriction shall apply to one (1) view only; however, knife-edge front area is prohibited.

## **2.2. Pilot Qualification**

Unless otherwise stated hereunder, pilots of model sailplanes must comply with all applicable AMA, FAA, and FCC regulations.

## **2.3. Safety**

*2.3.1. In order to comply with the intent of the AMA's "Safety Line" and because of the nature and special needs of the soaring community, the shape of the "Safety Line" will be more in the shape of a "Safety Box" or "Boxes." In order to help visualize the field layout with "Safety Boxes," refer to Appendix "B" at the end of this document.*

*2.3.2. The Safety Box is a volume of air that the pilot must not enter. If entered, the pilot will be given a warning and must immediately exit the box.*

*2.3.3. If the pilot continues flying in the box, he or she will be given a zero for the flight and landing.*

*2.3.4. Repeated flying in the box will be reason for disqualification from the contest.*

## **2.4. Competition Flights**

Each competitor will be afforded a like number (normally at least three official flights) in regular competition rounds.

## **2.5. Official Flights**

*2.5.1. An official flight is considered to have occurred when the model has left the hands of the competitor, or his assistant, for the purpose of launching the sailplane for flight.*

*2.5.2. An official flight resulting in a non-zero score is considered to have occurred when the model has come to rest at the end of the flight within 75 meters of the center marking of the landing tape for events that include a landing task. For those that do not include a landing task, it will be within 75 meters of the launch point.*

## **2.6. Relaunches for Winch Launched Events:**

*2.6.1. A relaunch is permitted at the discretion of the contestant when in the judgment of the CD.*

*2.6.1.1. The contestant's model collides in flight with another model or an obstacle without the fault of the competitor and the pilot makes it clear he has had a collision and immediately brings the model down in the interest of safety.*

*2.6.1.2. A new flight will be granted if the contestant's model collides with the winch launching line of another competitor that has violated the launch corridor of the contestant.*

*2.6.1.3. The flight was not judged by fault of the judges or timing equipment.*

*2.6.1.4. The CD supplied launching system malfunctions.*

*2.6.2. Annulment of a flight:*

*2.6.2.1. A flight is annulled if flown in whole or in part by anyone other than the contestant. This does not include: Help handling the model at launch, operating a winch, or retrieving a plane after landing.*

## **2.7. Organization of Flight Order:**

*2.7.1. In contests that allow both 2.4 GHz and 72 MHz radio systems, the flight order shall be arranged in accordance with radio frequencies in use so as to permit as many flights simultaneously as possible and thereby help equalize the weather conditions for all competitors. Flying will normally be scheduled in rounds with the flying order in each round arranged by lot, within frequency limitations.*

*2.7.2. In contests that only have 2.4 GHz radio systems and are non-MOM contests, the flight order shall be arranged so as to permit as many flights simultaneously as possible and thereby help equalize the weather conditions for all competitors. Flying will normally be scheduled in rounds with the flying order in each round arranged by lot.*

*2.7.3. In contests that have only 2.4 GHz radio systems and are run using a "MOM" format:*

2.7.3.1. *The flight order shall be arranged in flight groups based on a random distribution table or software. All flight groups can be created prior to the start of the contest. Re-distribution of the groups after the first round because of drop-outs is an option open to the CD but is not mandatory.*

2.7.4. *In contests that have only 2.4GHz radio systems and are run using a “Seeded MOM” format:*

2.7.4.1. *The flight order for the first round only shall be arranged in flight groups based on a random distribution table or software. All flight groups after the first round will be arranged based on the total of the previous rounds scores. The CD will detail the groups’ flight order after the first round in the pilots’ meeting: “Highest to Lowest” or “Lowest to Highest” scoring groups.*

## **2.8. Launch Equipment**

### **2.8.1. Winch Launched Sailplanes**

Unless otherwise specified, all launches will be made in “flatland” contests by equipment provided by the contest director. Launch line length shall be limited to a maximum of 300 meters (984 feet). The launch line is interpreted to be that portion which extends from the turnaround to the sailplane. The “land line” is that portion from the turnaround to the winch drum.

All electric motor winches will have a safety “quick disconnect” switch installed in the positive cable to the motor. All combustion engine winches will have a safety “quick disconnect” switch in the ignition circuit.

### **2.8.2. Self-Launch Sailplanes**

The contestant is responsible for all launching systems aboard his or her sailplane. The CD may or may not supply the altitude activated motor shutoff switch in the event of a maximum launch altitude contest. If the onboard switch is contestant supplied and the launch height is in question, the CD can ask to have the switch replaced with a “Contest Director’s approved” switch.

- 2.8.3. *If a contest contains 72 MHz radios, then frequency control will be strictly enforced, and all 72 MHz transmitters shall be impounded when not released by the CD for use. In a total Spread Spectrum (2.4 GHz) contest, or a contest where only one 72 MHz frequency per entry is allowed, transmitter impound will be at the discretion of the CD.*
- 2.8.4. *The Builder-of-the-Model rule does not apply to events in this rules set.*
- 2.8.5. *A contestant may enter a Class A sailplane in Class A, B or C events, or his Class B sailplane in Class B or C events in sanctioned competition only, not for establishing records.*
- 2.8.6. *Hand launches will be made for all official competition unless otherwise specified by the contest director.*

## **2.9. Launching Right of Way**

- 2.9.1. *Winch launched sailplanes: A sailplane attached to the launch equipment, and therefore in the process of being launched, has the right of way over sailplanes in flight.*
- 2.9.2. *Self-launched sailplanes: Launch direction will be determined by the CD or his/her designated "Launch Official." All pilots will launch in the direction specified. Pilots may redirect their flight path during launch provided this is done in a safe manner and does not interfere with the other launching pilots. A collision or other significant disturbance to another launching plane due to a pilot redirecting his or her flight path will result in zero points for the offending pilot for that round.*

## **2.10. Pilot Flying Aids**

- 2.10.1. *Thermal sensing devices shall be permitted provided that any such device and the contestant comply with all FCC regulations and that any such device does not interfere with the conduct of the contest. No special arrangement or rearrangement of flight order, established as noted above, shall be made in consideration of such devices.*
- 2.10.2. *Flight Stabilization Systems or Devices*  
Any device, other than the Altitude Limiter Switch which is carried in the model and enables total or partial independent control over the model, is prohibited or prohibited from being activated.

### **2.11. Launching Protocol:**

In non-MOM contests, model sailplanes shall be launched as rapidly as possible during any given flight round with due regard for frequency control and safety. In MOM contests all pilots in the flight group will be launched either within a reasonable time window, or simultaneously.

### **2.12. The term “nose” as used in these rules shall be understood to mean the extreme forward part of the model.**

### **2.13. Preparation Time**

- 2.13.1. *Each competitor shall be allowed a maximum preparation and launch time as announced by the CD prior to the beginning of the competition.*
- 2.13.2. *For a winch launched sailplane, this time shall begin when the contestant is called to fly and operable launch equipment is available. For self-launching sailplanes, the time will begin when the contestant is called to fly.*
- 2.13.3. *For a winch launched sailplane, this time shall end at the instant the model separates from the launch equipment, and for self-launching sailplanes, the time will end when the plane is released for flight.*
- 2.13.4. *Winch launched sailplane models failing to release from the launch equipment within the allotted preparation time shall cause the contestant to be charged with an official flight and given a zero flight score and a zero landing score for the attempt.*

*For self-launching sailplanes, if the model is not launched under power within the allotted preparation and launch time the contestant shall be charged with an official flight and given a zero (0) flight score and a zero (0) landing score for the attempt.*

- 2.13.5. *The CD may extend this time in individual cases, only in the interest of safety.*

## **2.14. Flight Timing:**

- 2.14.1. *For winch launched sailplanes, timing of all launched flights will begin at the instant of towline release. For self-launching sailplanes, timing will begin at the release of the plane by the pilot or his helper.*
- 2.14.2. *Timing will end when the model contacts the ground or a ground based object. In the event that the model contacts the ground or ground-based object that is within the field boundary but not within the landing zone, no landing points will be granted.*
- 2.14.3. *The flight time will be truncated, and only whole seconds will count. Time is to be rounded down. (Ex. A time of six minutes and 13.99 seconds is recorded as 6:13).*
- 2.14.4. *Use of binoculars or other sight-augmenting devices by timers or pilots is forbidden.*

## **2.15. Field Boundaries**

- 2.15.1. *For contests that include landing tapes or runways, the field boundary will be defined as a circle 75 meters in radius from the center of the landing tape or the center of the landing area.*
- 2.15.2. *Landing outside this 75-meter radius will be considered an “Off Field” landing and results in a zero flight.*
- 2.15.3. *If the radius of the 75-meter circle intersects with the “Safety Box” or “Boxes” the Safety Box truncates the Field Boundary. (See illustrations in the Appendix for clarity.)*

## **3. Definitions of and for Sailplane Models used in Thermal Duration (Flatland) Competitions in this rule book**

### **3.1. Overall Model Sailplane Classes Defined by Wingspan**

- 3.1.1. *Class A: A projected wingspan limited to one and one-half (1 1/2) meters or less.*
- 3.1.2. *Class B: Two-Meter Sailplanes.*  
*A projected span limited to two (2) meters or less, but greater than 1 1/2 meters.*
- 3.1.3. *Class C—Unlimited Wingspan Class Sailplanes.*

### **3.2. Event Specific Sailplane Specifications**

### 3.2.1. For Event 442: Two-Meter Thermal Duration

3.2.1.1. Class "A" and "B" sailplanes are permitted.

3.2.1.2. The number of control functions is unlimited.

3.2.1.3. The competitor may use a maximum of three unique model aircraft, or three unique combinations of the three aircraft in the contest.

*Any model combination may be flown at any time throughout the contest at the discretion of the competitor.*

### 3.2.2. For Event 444: Unlimited Thermal Duration

3.2.2.1. Class "A", "B", or "C" sailplanes are permitted.

3.2.2.2. The number of control functions is unlimited.

3.2.2.3. The competitor may use a maximum of three unique model aircraft, or three unique combinations of the three aircraft, in the contest.

*Any model combination may be flown at any time throughout the contest at the discretion of the competitor.*

### 3.2.3. For Event 460: RES Class Sailplanes for Unlimited Thermal Duration

3.2.3.1. Class "A", "B", or "C" sailplanes are permitted.

3.2.3.2. The competitor may use a maximum of three (3) unique model aircraft, or three (3) unique combinations of the three aircraft, in the contest.

*Any model combination may be flown at any time throughout the contest at the discretion of the competitor*

3.2.3.3. Control of the aircraft will be limited to three functions: rudder, elevator, and spoilers.

3.2.3.4. Except in the case of tailless aircraft that have a portion of the trailing edge of the wing serve as the elevator, the trailing edge of the wing must remain fixed at all times. In the excepted case, where split elevators are used, they may be driven by separate servos but both left and right halves must at all times

*move in unison and deflect by the same amount and in the same direction.*

*3.2.3.5. Spoilers and/or air brakes must extend only above the top surface of the wing when deployed. The trailing edge of the spoiler/airbrake must be at least two inches ahead of the trailing edge of the wing. Two or more spoiler/air brakes may be used, but they must all act in unison and extend above the surface of the wing by the same amount when deployed.*

#### *3.2.4. For Event 461: Nostalgia Class Unlimited Thermal Duration*

*3.2.4.1. Class “A”, “B”, or “C” sailplanes are permitted (As a note of clarification for 461, aircraft or aircraft parts substitutions will not be allowed as in other TD events. Field repairs are allowed if the CD considers them safe for flight.)*

#### *3.2.4.2. Date of Release*

*3.2.4.2.1. The latest accepted magazine or book, cover date for the “published design,” or the manufacturer’s “construction plans date” of a kit will be prior to 1/1/80. Models that have been kitted, but where there is no date on the plans or on the instructions, an advertisement in a dated magazine or book can be used for dating of the design.*

*If the contestant has a plane design that meets the date requirements detailed above but is a design that was not published or kitted and the contestant can provide sufficient proof of design, build and being flown within that time frame, then that plane would still be considered eligible for competition. It is up to the contestant to provide this proof. The contestant must also provide proof of airfoil and the other requirements spelled out in Section 3.2.4.3 (Airframe Requirements Items that Must Duplicate the Original).*

#### *3.2.4.2.2.*

*If the plan used for construction and documentation was published in a book or magazine, all of the parts of the plane must be scalable and buildable from the plan. The*

aircraft construction and materials must be detailed, and not just a three view. This is especially important for the shape of the airfoil if it is not from a published set of coordinates.

**3.2.4.2.3.**

If the kit or published design had several construction plan dates that include modifications to the original design, only those changes made prior to 1/1/80 will be accepted.

**3.2.4.3. Airframe Requirements; Items That Must Duplicate the Original:**

**3.2.4.3.1.** *The plane must replicate the original styling and appearance and comply with the vision of the Nostalgia event (vision is stated under Special Items).*

**3.2.4.3.2.** *Airfoil.*

**3.2.4.3.3.** *Planform, moments, and surface areas of all components of the flying surfaces including the flying surfaces.*

**3.2.4.3.4.** *Fuselage form or styling in outlines both in side and plan views, as well as cross-sectional shapes.*

**3.2.4.3.5.** *Basic construction materials and techniques such as open-bay wing structure, wood vs. fiber, reinforced plastic, etc.*

**3.2.4.4. Airframe Requirements; Items That Can Deviate From the Original:**

**3.2.4.4.1.** *Control surfaces:*

**3.2.4.4.2.** *If desired on a plane with no glide control capability designed in originally, spoilers may be added to the upper wing surface at, or about, the high point of the airfoil as long as the plans do not call for any other glide control device. If the plans have a glide control system shown, it must be the one used and shall not be deviated from. If spoilers are added, they must be designed to minimize the effect on the styling of the original aircraft. An example would be on an open structure wing; the spoiler*

*system must be of minimal dimensions including the area around the spoiler bay used to attach the covering.*

*3.2.4.4.3. Any interior, non-visible structural modifications to enable the plane to handle modern launching equipment and techniques. Some examples could be:*

*3.2.4.4.4. Substitute spruce for balsa.*

*3.2.4.4.5. Carbon-fiber reinforcements.*

*3.2.4.4.6. Larger wing joiner rods.*

*3.2.4.4.7. Stronger tow hook systems.*

*3.2.4.4.8. Wing incidence and decalage.*

*3.2.4.4.9. Wing mounting (bolt on vs. rubber bands).*

*3.2.4.4.10. Removable or bolt-on stabs rather than permanent stabs, as long as the assembled position replicates the original and the visible architecture is unchanged.*

*3.2.4.4.11. Dihedral (either tips or center or both) can be modified a maximum of +/-25% of the original to suit personal preferred handling characteristics*

#### *3.2.4.5. Special Items*

*3.2.4.5.1. Radios can be of any type legal to operate and electronic mixing is allowable on any set surfaces.*

*3.2.4.5.2. The use of landing arrestor devices is prohibited. This does not eliminate the use of a smooth surface skid to protect the bottom landing surface of the aircraft from scratches and nicks.*

#### *3.2.5. For Event 463: Altitude Limited Electric Soaring (ALES)*

*3.2.5.1. Any electric-powered sailplane meeting the definition of a Class A, B, or C Sailplane and that is electric powered is permitted to fly in this event.*

*The competitor may use a maximum of three unique*

*model aircraft, or three unique combinations of the three aircraft, in the contest. Any model combination may be flown at any time throughout the contest at the discretion of the competitor*

**3.2.5.2. Altitude Limiters**

**3.2.5.3.** *All models must be fitted with an Altitude Limiter Switch (ALS) that will shut off the motor when it reaches the designated altitude above the ground. This device must also shut off the motor 30 seconds after launch if the designated altitude has not yet been reached.*

**3.2.5.4.** *The ALS must not be enclosed in any material other than that recommended by the manufacturer. It may not be positioned in any part of the model which could result in distortion of actual air pressure variations (e.g. – near forward facing air scoops or venting ports).*

**3.2.5.5.** *Models must include sufficient static venting to ensure that outside pressure is duplicated inside the model at the ALS location.*

**3.2.5.6.** *The ESC must always operate via its series connection to the ALS and not with direct connection to the receiver.*

**3.2.5.7.** *The connectors linking the ALS to the receiver shall be readily accessible so that a check altimeter with appropriate interconnection can be installed on demand by the contest director. Such a check altimeter will serve to verify start height while retaining the normal operation of the competitor's own installation.*

**4. FAI Specifications:**

See Section 2

**5. Definitions and Requirements for Contest Management by the Contest Director**

The term contest director, as used in these rules, shall be understood to mean a contest director that has been given that title by the AMA and shows that title on his/her AMA membership card.

**5.1. Contest Director Responsibilities**

In addition to the responsibilities defined in the introductory portions of this rule book, contest directors holding RC soaring contests have the following additional responsibilities.

*5.1.1. Prior to the day(s) of the contest, the CD shall provide as part of the contest notice:*

*5.1.1.1. Task(s) to be flown.*

*5.1.1.2. Landing option(s) to be used.*

*5.1.1.3. Scoring system to be used if it is not specified in this rules set.*

*5.1.1.4. Sailplane classes to be flown.*

*5.1.1.5. A description of the launching equipment to be used and its general capabilities. (This is generally understood to include line length, line strength, voltage, and drum diameter for electric winches.)*

*For self-launched sailplanes, this step would not be necessary.*

*5.1.1.6. For a limited launch height contest using self-launching sailplanes, the height and time allotted under power will be specified.*

*Also how the CD will handle any cases where “zoom launching” is observed. (Zoom launching is not in keeping with the spirit of an event that by definition limits launch altitude.)*

*5.1.1.7. Exceptions to the rules published in this rule book that were detailed in the sanction request.*

## **5.2. Pilots' Meeting**

At the pilots' meeting prior to competition, the CD shall:

*5.2.1. Provide the rules for each flight task, landing and scoring options as detailed in this rule book, or the exceptions detailed in the sanction.*

*5.2.2. Explain any pilot placement requirements for the contest such as where to launch from as well as the pilot's placement during landing.*

*5.2.3. Clearly define how the 75-meter out-of-bounds limits will be measured.*

(Length of line or distance measuring device and its accuracy.)

*5.2.4. Define any additional “no-fly zones” or “safety boxes” required because of the landscape or environment, if any area requires a minimum safe altitude to overfly, that too must be detailed in the pilots’ meeting.*

## **6. Scoring: General**

Scoring is done in concert with the format of the contest and, at times, helps define the format of the contest. (EX. MOM/T1)

A simple one-task contest with no fixed groups or mandatory flight order is scored in a completely different way; generally, a simple addition of points for each round will suffice.

If there is a multiple-task contest like F3B (Speed, Distance, and Duration), the scoring is more complicated and will follow the FAI rule book.

### **6.1. Option Selection**

The contest director may select either of the scoring methods defined below in Section 6.4.

### **6.2. Posting Scores**

Whenever possible, competition scores shall be posted in a conspicuous place and kept current during the progress of the contest.

### **6.3. Tie Breaking**

#### **6.3.1.**

In case of a tie for first place, a flyoff will determine the winner and the CD will decide the number of rounds in the flyoff and any deviation from the main contest format or operation.

### **6.4. Scoring Options**

*6.4.1. Option 1—Simple scoring: One point per second is awarded up to the target time and a negative one point per second for surpassing that time. The landing bonus points are added to the flight score to get the round score.*

6.4.1.1. *If a maximum time beyond the target time, as detailed in the pilots' meeting, is surpassed in which the pilot must land the pilot will receive a zero for the flight and landing.*

6.4.2. *Option 2 — Normalization of Scores in a MOM (Man-On-Man) contest format.*

6.4.2.1. *In a contest where there are several flight groups that make up a round, the scores for each flight group are normalized to 1,000. In other words, a pilot is flying against only his flight group for the round, not the entire list of contestants. The total score is the sum of all the contestants' normalized flight group scores for all of the rounds.*

6.4.2.2. *NOTE: A special pilot heat selection version of MOM scoring is called "Seeded MOM;" although the scoring is the same, the flight groups are arranged by score (lowest to highest) rather than by random distribution. Random distribution is used to set up only the first round.*

6.4.3. *The Contest Director has the option to discard one round of a contest with the lowest flight score provided the a minimum of eight rounds are flown for one event number in the contest. If there is more than one event number being flown, the CD has the option of the "throw out round" for each of the event numbers independently.*

## **6.5. Landings: General**

It is recognized that the below-listed landing options are quite broad in scope. This was done intentionally to allow the contest director to have wide latitude for selection of the best option for local conditions and skill level of the pilots entered.

### **6.5.1. Selection of Landing Option**

The CD may use any landing option defined in Section 6.6 in conjunction with any flying task defined in Section 7 that is consistent with safety considerations, weather conditions, local terrain, etc.

### **6.5.2. Lost Parts Rule**

No landing points shall be awarded if the model loses parts during landing. Rubber bands holding the flying surfaces to the fuselage are exempt from this ruling.

**6.5.3. *Inverted Landing Rule***

No landing points shall be awarded if the model comes to rest in an inverted position.

**6.5.4. *Landing area penalty rule***

If the model aircraft touches either the competitor or his helper during the landing maneuver, no landing points will be given.

If the model aircraft touches any other person during the landing maneuver, no landing or flight points will be awarded for that round.

**6.5.5. *The retrieval of a model from a landing area must be done with extreme caution and the utmost dispatch. If a measurement is required, the position of the nose of the model may be marked and the model removed. The measurement may then be performed at a later, safe time.***

**6.6. *Landing Options: (For Bonus Points in a TD Contest)***

**6.6.1. *L1—No landing requirements***

**6.6.1.1. *Nose of model must come to rest within bounds of the field as defined in Section 6.7.1.***

**6.6.2. *L2—Bonus Landing: In-or Out:***

An additional 100 points will be added to the flight score if the nose of the model comes to rest within an X meter diameter circle. The CD shall determine the X dimension.

This “X” dimension should be detailed in the contest sanction and the pilots’ meeting. (It is suggested that the LSF landing goals be used, either 1.5 meters or 3 meters).

(League of Silent Flight, the AMA SIG for soaring, has the requirements on [www.silentflight.org](http://www.silentflight.org))

**6.6.3. *L3— Bonus Landing: Spot Landing***

**6.6.3.1. *For a TD contest that requires spot landings as part of the score, bonus points will be added to the flight score for landings made to a spot. A maximum of 100 bonus points will be added to the flight score.***

**NOTE: *In a contest that normalizes scores like MOM or SMOM, adding the landing bonus points could be done either prior to or after normalization but in either***

*case the CD must detail this option in the pilots' meeting and in any prior documentation for the contest.*

*6.6.3.2. The points paying landing zone shall be described by a tape pivoted at the maximum score point and describe a circle about that point with the radius of the circle being the length of the tapes point paying positions.*

*6.6.3.3. The CD is responsible for supplying the landing tape(s), its maximum number of points, and its increments but the CD must detail the spot landing requirements in the pilots' meeting and in any prior documentation for the contest.*

#### **6.6.4. L4— Bonus Landing: Graduated Runway**

*6.6.4.1. Bonus points will be added to the flight score for landing within a graduated runway. The runway is defined by a CD defined centerline "X" meters (feet) long and as closely aligned with the wind as practical and extends 100 inches on either side of this centerline. A model which comes to rest with its nose beyond the ends of the centerline or more than 100 inches to the side of the centerline shall receive zero (0) bonus points. A model which comes to rest within the graduated runway will receive a maximum of 100 bonus points, with a loss of one (1) point per inch measured from the nose of the model to the centerline of the runway.*

*Note: Experience has shown that a 100-inch long piece of 1/2 or 3/4-inch diameter plastic pipe (PVC) marked off in one-inch increments to directly read the landing points is a simple and effective method of obtaining landing scores with this option.*

#### **6.6.5. L5— CD Defined Landing Task**

*6.6.5.1. The CD can define a landing task that is not shown in this rules set but must detail that task in the sanction, the pilots' meeting, as well in any advanced advertisement for the contest.*

### **6.7. Field Boundaries**

*6.7.1. The field boundary for thermal duration events T1, T2 is defined as a radius of 75 meters from the individual landing*

zone for that contestant with the center of the circle at the pivot point of the tape or center of the runway. If the inbounds area described by this circle is superimposed upon a safety area or zone, then that superimposed area is also considered to be out of bounds.

**7. Flat Land Thermal Soaring for Events 442(2M), 444(UNL), 460(RES), 461(NOS), 463(ALES), and International Events F3B, F3J, F3H, F5J and F3K**

**7.1. Rules for Event T1; Thermal Duration Winch-Launched Sailplanes:**

Covering events 442, 444, 460, 461 and 463

**7.1.1. Concept:**

The objective is to remain aloft for “T” minutes as decided by the contest director, but no longer than “T+1” Minutes.

Note: This is the basic duration task and it is suggested that 10 minutes be the nominal target time for the initial rounds of the contest in order to get as many rounds in as possible within a given contest day. Longer or shorter target times can be used at the CD’s discretion based on the contest format, number of contestants, weather conditions, and the time available. A CD needs a minimum of three rounds for the contest to count as a completed sanctioned contest.

If flyoff rounds are called for in the contest format then it is suggested that the flyoff rounds be 15 minutes in duration.

It is the accepted standard for this format to include a bonus points landing task that is added to the flight score and the mathematical methods are detailed in the Landing Tasks described in section 6.6.

**7.1.2. Flight Timing:**

An official timer shall record the flight time as specified in sections below. An official timer is defined as a timer that is approved by the CD for that event.

**7.1.3. One point shall be awarded for each second of flight time up to a maximum of (T x 60) points.**

*All fractions of a second shall be dropped. (This is known as the “Truncated” time).*

7.1.4. *One point shall be deducted from the maximum score for each second flown in excess of the (T x 60) seconds to a maximum of 60 points. If the flight exceeds the target time (T) by one minute, the flight and landing will be given a zero.*

7.1.5. *The organizers should run as many rounds as possible, considering the number of contestants and type of event being flown. The target number of rounds for the day should be announced at the pilots' meeting. The CD can change this number anytime during the contest by announcing the change one round ahead of time.*

7.1.6. *Scoring:*

See section 6 for scoring options to be used for T1

**7.2. Rules for Event T2; Thermal Duration for Self-Powered Sailplanes covering AMA event 463 ALES and 464 F5J (See section 7.3 for F5J)**

For 463 ALES

7.2.1. *Concept:*

The contest format and scoring is done using the Man-On-Man or Seeded-Man-On-Man concept for flight order as well as group scoring. (See section 6.4).

7.2.2. *The task time "T" is explained in section 7.1.1.*

7.2.3. *Launching is to be done within a 10-second launch window. The flight is initiated during or after the initial "10 second launch window" buzzer. All pilots must launch their planes before the end of the second launch window buzzer. A plane launched before or after the launch buzzers will receive zero points for the round.*

7.2.4. *Any attempt to subvert the intent of the Altitude Limiter rule set is grounds for disqualification from the event as unsportsmanlike conduct.*

7.2.5. *Launches to soaring altitude will be accomplished by the competitor's onboard electric power system (powertrain).*

7.2.6. *The launching motor run will be limited by a 30-second timer or a CD designated launch altitude whichever comes first.*

7.2.7. *The designated launch altitude will be selected by the contest director and will be 200 meters, 150 meters, or 100 meters.*

7.2.8. *The launch must be followed by pure gliding flight with no further motor (powertrain) assistance.*

7.2.9. *Launch direction will be determined by the CD or his/her designated launch director. All pilots will launch in the direction specified. Pilots may redirect their flight path during launch provided this is done in a safe manner and does not interfere with the other launching pilots. A collision or other significant disturbance to another launching plane due to a pilot redirecting his flight path will result in zero points for the offending pilot for that round.*

7.2.10. *Time will start when the model aircraft has left the hands of the competitor or helper. The model aircraft must leave the hands of the competitor or helper under the pull of the electric powertrain. The CD may allow a power-off launch for reasons of safety (example: a rear-motored aircraft). In either case, the motor must be started within the launch window time.*

7.2.11. *The launching motor run must be a single continuous event. No motor restarts are allowed at any time during the launch. A motor restart will receive zero points for the round.*

7.2.12. *At the end of the motor run (30 seconds or the designated altitude whichever comes first), no other activation of the motor is permitted for the remainder of the flight. A motor restart will receive zero points for the round.*

7.2.13. *Landings for bonus points are described in section 6.6.*

### **7.3. For FAI Events 445-F3B, 456-F3J, 446-F3H and 462-F3K, 464-F5J**

7.3.1. *Abbreviated Explanation of events:*

7.3.1.1. *F3B is a multitask event in which three tasks are flown:*

*Speed, distance, and duration. It is flown by a team that manages the launch equipment, the piloting and calling duties.*

7.3.1.2. *F3J is the international version of the AMA task T1-Thermal Duration and is flown Man-On-Man with normalized scoring. The launch method is generally a human tow team rather than a winch or self-powered. Like F3B, it is a team event.*

7.3.1.3. *F3H is a closed course race that we call “Cross Country.” Although the FAI rules are now provisional, they are almost identical to the rules presently being used in practice.*

*So in the interest of commonality, AMA will use the FAI rules with the exception of the rules for entry [5.H.1 (a) and (b) in the FAI rules], which will be replaced with the following.*

7.3.1.3.1. *Each team may consist of up to six members, all of whom must be current AMA members.*

7.3.1.4. *F3K is a hand launch event for Class A sailplanes and is flown Man-On-Man and each round consists of different tasks flown in a 10-minute round window.*

7.3.1.5. *F5J is a self-launch Man-On-Man TD event that rewards finding thermals and making the required flying time from the lowest possible motor shut-off altitude with which the pilot is comfortable. The higher the altitude you shut off, the greater the point penalty. The penalty is for each meter of the recorded Start Height results in a deduction of half (0.5) a point up to 200M and three (3) points per meter above 200M.*

#### 7.3.2. *Concept*

The objective of presenting these international events in the AMA rule book is to make it clear that these events are flown regularly in the USA, including AMA National competitions. Competitions in the USA still require an AMA sanction and act as if the FAI rules are, in fact, AMA rules.

It is deemed wise to not repeat the rules for these events in this rule book but instead to refer to the originals in the FAI database so that changes in the rules for these events will be automatic for the AMA rule book.

#### 7.3.3. *Rules*

The rules for these events are available from the FAI at <http://www.fai.org/ciam-documents>.

## **8. Rules for Slope Soaring Events: F3F- Closed Circuit Speed, 458-Slope Soaring Combat**

### **8.1. FAI F3F Closed Circuit Speed**

#### 8.1.1. *Concept*

The objective of presenting this international event in the AMA rule book is to make it clear that these events are flown regularly in the USA. Competitions in the USA still require an AMA sanction and act as if the FAI rules are, in fact, AMA rules.

It is deemed wise to not repeat the rules for these events in this rule book but instead to refer to the originals in the FAI database so that changes in the rules for these events will be automatic for the AMA rule book.

#### *8.1.2. Abbreviated Explanation of events*

The Flying Task: The flying task is to fly 10 legs on a closed speed course of 100 meters in the shortest possible time from the moment the model first crosses Base A in the direction of Base B. If some irremovable obstacles do not allow 100 meters, the course may be shorter but not less than 80 meters.

#### *8.1.3. Rules*

The rules for these events are available from the FAI at <http://www.fai.org/ciam-documents>.

### **8.2. Event 458: RC Slope Soaring Combat**

#### *8.2.1. Objective*

*8.2.1.1. To create the excitement of aerial combat in a safe competition that will be interesting to spectators and challenging for contestants.*

#### *8.2.2. General*

*8.2.2.1. Unless otherwise stated, pilots of RC combat sailplanes must comply with all applicable AMA and FCC regulations.*

#### *8.2.3. Safety*

*8.2.3.1. Consideration of safety for spectators, contest personnel, and contestants is of the utmost importance for this event. Any conduct by a contestant deemed by the contest director (CD) to be hazardous in nature will be cause for immediate disqualification from the event. All aircraft flown must be safety inspected by the CD, or an individual designated by the CD, prior to competition and may be re-inspected at any time during the event. The*

*judgment of the CD on safety matters cannot be protested. The site specifications and aircraft specifications listed are essential to the safe conduct of this event.*

#### **8.2.4. Site Specifications**

- 8.2.4.1. The CD is responsible for selecting a site suitable for the safe conduct of the event. The site will have topography capable of sustaining non-powered model flight relative to the prevailing wind (slope lift), provide an area suitable for the safe landing and retrieval of downed aircraft, and provide for the safety of any individuals or public domain in the immediate area of the flying site.*
- 8.2.4.2. The CD will establish a flight line parallel to the crest of the slope. Pilots and helpers will stand at this flight line during the competition.*
- 8.2.4.3. The CD will establish end lines, perpendicular to the flight line, at each lateral end of the flight area. The distance between end lines will be determined by the CD based on topography and spectator considerations.*
- 8.2.4.4. The CD will establish a safety zone, defined as a rectangle between the end lines, the flight line, and a line parallel to the flight line—a minimum of 100 feet downwind of the flight line. The only allowable people within the safety zone during competition rounds will be the pilots, their assistants, and contest officials. The safety zone must be clear of spectators, vehicles, buildings and public roadways. Any aircraft flying or landing downwind of the flight line and outside of the safety zone will be disqualified from the round with zero points awarded.*
- 8.2.4.5. The CD will select a site with a suitable upwind flying area. The area upwind of the flight line, within which the landing of an aircraft may be reasonably anticipated, must have terrain allowing for the safe and expeditious retrieval of downed aircraft and must not pose any hazard to spectators, the general public, buildings, or public roadways.*

#### **8.2.5. Aircraft Specifications**

- 8.2.5.1. *With the exception of control surfaces, covering, and structural reinforcements listed below, the aircraft must be constructed entirely of expanded bead, plastic foam material.*
- 8.2.5.2. *The maximum allowable wingspan shall be 49 inches.*
- 8.2.5.3. *The maximum allowable flying weight shall be 35 ounces.*
- 8.2.5.4. *Wings shall have a plastic foam leading edge at least 1 1/2 inches wide, measured chord wise, the entire span of the wing. The wing may be covered with film covering material, vinyl tape, fiber-reinforced vinyl tape or any combination of the three. Wood, metal, solid plastic, carbon fiber, Kevlar, or any resin impregnated fiber material on or in the wing leading edges are not permitted.*
- 8.2.5.5. *Wing spars of any non-metallic material are permitted; provided they do not violate the provisions of Section 5.4 (more than 1 1/2 inches away from leading edge at any point along the span). Maximum total cross-sectional area for spars shall not exceed 3/4 square inch. Moveable control surfaces at the wing trailing edge (ailerons) will not be considered a part of the total spar cross-section.*
- 8.2.5.6. *The fuselage of a Class B, Conventional Aircraft must have a plastic foam nose section at least 1 1/2 inches in length. The fuselage may have longerons of any nonmetallic material provided their total cross-sectional area does not exceed 1/2 square inch area, and that the longerons do not extend into the forward 1 1/2 inches of the nose. The fuselage may be covered with film covering material, vinyl tape, fiber-reinforced vinyl tape, or any combination of the three.*
- 8.2.5.7. *Any flight control surfaces may be constructed of wood or corrugated plastic/paper material. Metal, solid plastic, carbon fiber, Kevlar, or any resin impregnated fiber construction or covering material on the control surfaces is not permitted.*
- 8.2.5.8. *Any ballast added to an aircraft must be imbedded and secured internally within the aircraft structure and may not be attached externally to the aircraft structure.*

*8.2.5.9. No plane shall use any form of thrust power. Engines, electric motors, compressed gas, or chemical propellants are prohibited. Aircraft converted from electric power must have the motor, motor battery, propeller, and any hard surface hatches removed from the aircraft prior to competition.*

*8.2.6. There shall be no limitation on the number of controls. The Builder-of-the-Model rule does not apply for this event.*

*8.2.7. Competition Classes:*

The CD may select from the following classes.

*8.2.7.1. Class SA, Flying Wings:*

Open to any aircraft, which does not have a horizontal stabilizer surface separate from the wing planform (i.e. “tailless” aircraft).

*8.2.7.2. Class SB, Conventional Aircraft*

Open to any aircraft which uses conventional tail control surfaces, separate from the wing, and attached by a fuselage structure.

*8.2.7.3. Class SC, Unlimited*

Open to any aircraft complying with the requirements of Section 5 (i.e. combined flying of class A and B aircraft).

*8.2.8. Contest Structure*

*8.2.8.1. The CD will define flight groups for each round. The number of aircraft flown per group will be at the discretion of the CD based on the total number of entrants, the availability of non-conflicting radio frequencies, the desired number of rounds to be flown in the time available, and the size of the slope flying area. Typically, there will be five to 15 aircraft per group. The size of the groups flown in a round will be equalized to the greatest extent possible. After each pilot has had the opportunity to compete in at least two non-elimination rounds, the scores will be totaled, with a number of the highest scoring contestants, determined by the CD, advancing to the final round. The top scores of the final round are the winner and runners-up of the contest.*

*8.2.8.2. In the case of a point tie in the final round, the total points of the qualifying rounds will be used to*

*determine the winner of the tie. If this also results in a tie, the tied pilots will compete in a round to determine the winner (flyoff). At the discretion of the CD, additional non-scored aircraft may be allowed to participate in the flyoff to increase the likelihood of points being scored.*

#### **8.2.9. Launching**

Aircraft must be launched by hand. Dollies, wheels, or catapults are prohibited. Every contestant is allowed the use of one helper to assist in launching the aircraft.

#### **8.2.10. Round Duration**

The CD will determine and announce the duration of each round. If a contestant crashes at any time during the round, an unlimited number of relaunches are allowed within the duration of the round, provided the aircraft is down in an area which allows its safe retrieval. No repairs may be made until after the conclusion of the round.

#### **8.2.11. Change of Aircraft**

During a round, no change of aircraft is allowed for any reason. In between rounds, the contestant may freely choose from any aircraft available.

#### **8.2.12. Inter-round Safety Inspection**

The CD may re-inspect and remove any aircraft that may have been made unsafe for flight during an earlier round. The pilot of the aircraft, so removed, may make field repairs and resubmit the aircraft to the CD for inspection.

#### **8.2.13. Contest Officials**

##### **8.2.13.1. Judges**

There will be one judge for each aircraft flown. Fellow pilots or helpers may act as judges. Each aircraft's judge will validate and register points gained by the aircraft and rule upon round disqualification for crossing safety lines defined in Section 4.3. The judge will report the pilot's score to contest officials at the end of the round.

##### **8.2.13.2. Contest director**

The CD will be responsible for all duties listed in other sections and will provide for tallying the scores of each aircraft in the competition.

#### **8.2.14. Scoring**

8.2.14.1. *Points are scored by causing an opponent's plane to strike the ground and cease flight after a midair contact. No matter who initiates the engagement, the plane that remains flying after such an event and demonstrates flight control by performing a verification maneuver, shall gain one point.*

8.2.14.2. *Midair contact that does not result in a single aircraft striking the ground and ceasing to continue flight, and in the remaining aircraft being able to demonstrate flight control, will net no score for either pilot.*

8.2.14.3. *Points shall be verified in one of two ways by the victorious pilot of an engagement:*

8.2.14.3.1. *Execute a single, 360° roll and return to fully controlled straight and normal flight.*

8.2.14.3.2. *Execute a single 360° loop and return to fully controlled straight and normal flight.*

8.2.14.4. *The point verification maneuver must be performed prior to re-engaging in combat with another aircraft.*

8.2.14.5. *If an aircraft crashes as a result of attempting to complete the point verification maneuver, no points will be awarded for the engagement. The judge for a given aircraft will determine if the verification maneuver was successfully completed and that straight and normal flight control was demonstrated.*

#### 8.2.15. *Multiple collisions*

8.2.15.1. *If an aircraft collides with multiple aircraft in the pursuit of a single engagement. Points will only be awarded for the last such collision unless a point verification maneuver was successfully performed prior to each individual collision.*

8.2.15.2. *At the discretion of the CD, one bonus point will be awarded if a pilot can fly an entire round without the aircraft coming to rest on the ground.*

## **NATIONAL RC SAILPLANE RECORDS**

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As AMA National Records are not considered competition, the only rules that directly pertain to RC Soaring records are within this section of the Competition Regulations.

### **1. Procedure**

Obtain from AMA HQ an application for an RC Soaring Sanction. This, when completed and signed by an AMA contest director, is returned to AMA HQ with the sanction fee.

### **2. Classifications**

For each of the AMA age classifications (Junior, Senior, and Adult) and each of the Sailplane classifications (Class A – projected wingspan limited to one and one half (1.5) meters or less, Class B – A projected span limited to two (2) meters or less but greater than 1.5 meters, Class C – wingspan greater than 2 meters and up to and including 100”, Class D- wingspan greater than 100”) and for the two categories of “sailplane” or “electric-powered sailplane”, the following records shall be:

1. Duration
2. Thermal Duration
3. Declared Distance
4. Open Distance
5. Closed Course Distance
6. Altitude
7. Speed
8. Goal and Return Distance

### **3. General Rules**

All record claims must be made by US citizens who are members of the Academy of Model Aeronautics. An AMA sanction is required for all attempts.

Multiple records for any one class with a single flight may be attempted, provided sanctions are obtained for each task. A minimum of two officials must witness the record attempt. Both officials must be AMA members and at least one of the two must be a current AMA contest director. Initial record claims will have no starting minimums. After initial records are established, all subsequent records must simply better the existing records. All previous records shall stand as established prior to January 1, 1997. Records can only apply to Sailplane Classes A, B, C, and D as defined solely in this national record section of the RC Soaring competition regulations. These classes are historical to RC soaring and may differ from class descriptions elsewhere in the RC Soaring competition regulations for standard competitions having nothing to do with national records. Multiple entries are not permitted; i.e. Class A cannot be flown for Class B, C, or D record attempts.

Team effort is permitted for all record attempts. However, only one (1) pilot will be permitted.

The model must meet the following specifications: Maximum surface area (combined wing and horizontal stab projected areas)—150 square decimeters (2,325 square inches), maximum flying weight—5.00 kilograms (11 pounds, 0.368 ounces), surface loading—from 12 to 75 grams/decimeters (3.95 to 24.57 ounces/square feet). The model may be hand-launched or launched by means of a line (hand tow, hi-start, or winch) with a maximum launch length of 300 meters (984.25 feet). Hi-start can be any combination of elastic and line, but stretched length for launching cannot exceed 300 meters (984.25 feet). The towline must have a pennant or parachute of suitable size and color to enable officials to determine when towline release occurs. No other type or form of launch is permitted with the exception of electric-powered sailplanes (see section 4.6 below). The launch equipment must be ground based. Once released from launch, no other propulsion of the model is permitted.

## **4. Special Rules**

### **4.1. Duration**

Timing of the flight starts at release of the model from the launch device and stops when the model touches the ground (or solid ground-based object) and stops or disappears from the timekeeper's sight for more than five minutes. The point of landing must be within 300 meters (984.25 feet) of the launch point. The time is taken by two timekeepers. The registered times must be within 1% of each other with the lowest reading considered official. In Thermal Duration, the flight shall be sustained on thermal lift only, over essentially flat ground, and at no time shall the model fly in slope lift. The loss of height between the starting and landing points, for both Duration and Thermal Duration, cannot exceed 100 meters (328 feet, 1 inch).

### **4.2. Declared, Open, and Goal + Return Distance**

The distance claimed shall be that on a straight line between launch and landing points, as measured on a map with a scale of at least 1:100,000 for distance up to 50 kilometers (31 miles, 364 feet, 3.84 inches) and 1:200,000 over 50 kilometers. The point of landing is where the model first touches the ground.

For Declared Distance, the pilot must indicate in writing before the flight the place where the model will land. The actual point of landing must be within a radius of 300 meters (984.25 feet) of the point indicated. The record for this task shall be the longest straight line distance between the starting and finishing locations and shall be irrespective of where those locations are. For Open Distance, no

declared goal is required. For Goal and Return Distance, the pilot must specify in writing before the flight the turn point to be used as a goal and the place where the model will land. The record for this task shall be the sum of the longest straight-line distance between the launch and goal positions summed together with the longest straight-line distance between the goal and landing positions. For goal and return, the point of landing must be within 300 meters (984.25 feet) of the launch point.

#### **4.3. Closed Course Distance**

The distance claimed shall be that resulting from adding the completed passes over a straight base of 100 meters (328 feet, 1 inch) during a continuous flight. Distance traveled outside this course is not considered and fractions of a circuit will not be included.

#### **4.4. Altitude**

The maximum height of the model above the ground at the launch point may be measured by barograph carried either in the model or in an aircraft following but never rising above the model, or by theodolites from the ground. An official observer must be present in the aircraft following the model. A full description of the methods and equipment used must be submitted with the claim containing sufficient proof of accuracy of the equipment and competence of the operators. The landing point of the model must be within 300 meters (984.25 feet) of the launch point.

#### **4.5. Speed**

The Speed measurement course shall be along a straight line of 150 meters (492 feet). The start/finish line (Base A) shall be an imaginary vertical plane perpendicular to the course. A similar imaginary vertical plane (Base B) shall exist at the opposite end of the course. Suitable sighting devices defining the imaginary vertical planes at both Base A and B shall be erected. The imaginary line directly between the sighting devices is defined as the course centerline. For safety purposes, all flying will be done only on one side of the course centerline. The side to be used shall be the side farthest from any spectator areas. Any crossing of the course centerline during the flight shall void the flight.

During a continuous flight and after released from the launch line, the model must first make at least one 180° turn before entering the course by crossing Base A while flying in the direction of Base B. It must cross Base B, turn around, cross Base A, turn around again,

cross Base B, turn around again, and then leave the course by again crossing Base A. Officials acting as flagmen shall observe and signal the model's crossing of Base A and Base B each time it occurs. The pilot must remain at Base A and may stand beneath the sighting device. Official recorded time starts when the model enters the course and stops when it leaves the course. All timing must be done by electronic timing devices capable of direct readings to at least 1/10 second. The average of the two (2) readings closest to each other will be used as the official recorded time. A full description of the methods and equipment used must be submitted with the record claim containing sufficient proof of accuracy of the course, sighting and timing equipment, and competence of the operators.

Any launch will be permitted that meets current FAI rules, except that the maximum launch line length shall be limited to the AMA maximum of 300 meters (984 feet). The flier will have two (2) minutes to complete the task from release from the launch line and ending with the completion of the speed run. A fourth timer will ensure that this time is not exceeded.

#### **4.6. Electric-Powered Sailplanes**

For electric-powered sailplane records in Classes A, B, C, D, all launch methods must conform to the requirements of section 3.2.5.2 regarding altitude limit switches, specifically with the maximum altitude set at 200 meters and with a maximum initial motor run of 30 seconds. No other type or form of launch is permitted and no other type of propulsion of the model is permitted throughout the remainder of the flight after launch.

## **APPENDIX**

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### **A. Examples of building an AMA Sanction for a Soaring Contest**

From the table in section 1.2 we can build a couple of examples for the elements of a specific contest, if these elements are spelled out in the application for an AMA Sanction all the contestants will have complete knowledge of the competition.

#### **A.1. Example 1 – Thermal Duration AMA Event 444**

<b><u>Topography</u></b>	Flat Land – Single Task
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<b><u>Specific Event</u></b>	Thermal Duration (Section 7.1)
<b><u>Class of Plane</u></b>	C- Unlimited (Section 3.1.3)
<b><u>Specific Task</u></b>	T1- Thermal Duration (Section 7.1)
<b><u>Scoring</u></b>	SMOM (Section 6.4.2.2)
<b><u>Launching</u></b>	Winch (Section 2.9.1)
<b><u>Landing Task</u></b>	Tape (Section 6.2.2, 6.6.3)

**A.2. Example 2- FAI Event F3B or AMA Event 445**

<b><u>Topography</u></b>	Flat Land – Multitask
<b><u>Specific Event</u></b>	F3B – FAI Rule Book Section 5.3
<b><u>Class of Plane</u></b>	FAI Rule Book Section 5.3.1.3
<b><u>Specific Task</u></b>	Speed, Distance, and Duration
<b><u>Scoring</u></b>	FAI Rule Book Section (Multiple Sections)
<b><u>Launching</u></b>	FAI Rule Book Section 5.3.2.2
<b><u>Landing Task</u></b>	FAI Rule Book Section (Multiple Sections)

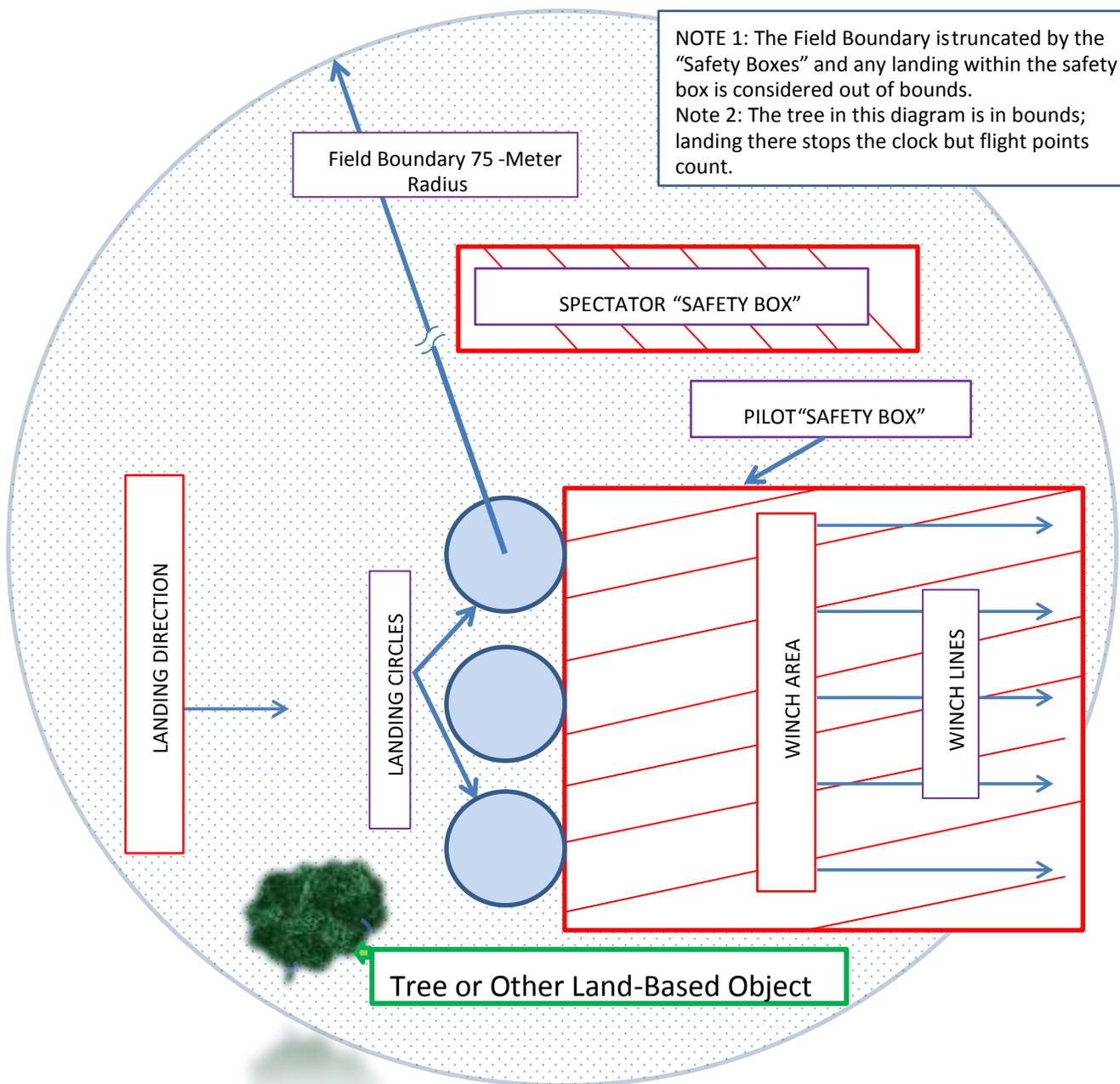
**A.3. Example 3 – AMA Slope Combat**

<b><u>Topography</u></b>	Slope – Single Task Site Specifications – AMA Rule Book Section 8.2.4
<b><u>Specific Event</u></b>	AMA Rule Book Section 8.2
<b><u>Class of Plane</u></b>	AMA Rule Book Section 8.2.5
<b><u>Specific Task</u></b>	Combat

<b><u>Scoring</u></b>	AMA Rule Book Section 8.2.14
<b><u>Launching</u></b>	AMA Rule Book Section 8.2.9
<b><u>Landing Task</u></b>	NA

## B. EXAMPLES OF A FIELD LAYOUT

### WINCH LAUNCHED SAILPLANE FIELD LAYOUT



**SELF -LAUNCHED  
SAILPLANE FIELD  
LAYOUT**

NOTE 1: The Field Boundary is truncated by the "Safety Boxes" and any landing within the safety box is considered out of bounds.  
Note 2: The tree in this diagram is in bounds; landing there stops the clock but flight points count.

