



# Academy of Model Aeronautics

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## EXHIBIT A RULES CHANGE PROPOSAL FORM

PROPOSAL NO. RCE 13-2-2 RECEIVED DATE 3-14-2012  
(To be inserted by Headquarters) (To be inserted by Headquarters)

REVISE DATE \_\_\_\_\_ VERSION NUMBER \_\_\_\_\_

### RULES CHANGE PROPOSAL FORM

Send to AMA Headquarters via email at [ruleschanges@modelaircraft.org](mailto:ruleschanges@modelaircraft.org). A copy will be forwarded to the appropriate Contest Board Chairman.

PROPOSAL TYPE (Check One):  Basic  Cross Indicate Original Proposal Number \_\_\_\_\_

Urgent/Safety/Emergency  Interpretation

General Section  Executive Council  Outdoor Free Flight  Indoor Free Flight  CL Speed

CL Racing  CL Navy Carrier  CL Aerobatics  CL Combat  CL Special Events  RC Aerobatics

RC Scale Aerobatics  RC Pylon Racing  RC Helicopter  RC Soaring  Scale  Electric

Special Events  RC Combat

#### Brief summary of the proposed change.

Introduce a new competitive event for Altitude Limited Electric Soaring (ALES). The intent of this task is to provide a Man-On-Man soaring experience using electric launch sailplanes which achieve approximately the same launch altitude at approximately the same time

Exact wording proposed for the rule book. (List paragraph numbers where applicable. Example: Change “quote present rule book wording” to “exact wording required”.

#### (X) Altitude Limited Electric Soaring (ALES)

The purpose of this category is to provide a Man-On-Man (MOM), electric launched, thermal duration soaring event with a consistent launch altitude for all competitors.

1. Any electric powered sailplane meeting the definition of an electric powered glider is permitted to fly in this event.

2. Launches will be accomplished by the competitor’s on-board electric power system and will begin within a starting launch window.

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

4. The designated launch altitude will be selected by the Contest Director and will be 200 meters (m), 150m or 100m.
5. The launch must be followed by pure gliding flight with no further motor assistance.

### **(X).1 General Specifications**

1. Maximum surface area 2335 sq.in. (150 dm. sq.)
2. Maximum weight 11 pounds (5 kilograms)
3. Maximum surface loading 24.59 oz. per sq.ft. (75 gr/dm sq.)
4. Maximum battery voltage 42 volts
5. Model aircraft with variable geometry or area must comply with these specifications when the surfaces are in maximum and minimum extended mode.
6. Mechanical or chemical modification of the individual cells of a battery (e.g. to reduce their weight) is not allowed, except that insulation sleeves of individual cells may be changed.
7. Any device, fixed or retractable, intended to arrest the model aircraft on the ground, or which does arrest the model aircraft on the ground, during landing is prohibited.
8. No wing tip launches are allowed (discus, side-arm, etc.).
9. All ballast must be carried internally and fastened securely within the airframe.

### **(X).2 Altitude Limiters**

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.

1. 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).
2. Models must include sufficient static venting to ensure that outside pressure is duplicated inside the model at the ALS location. In the event of a launch exceeding 10% of the designated launch altitude due to insufficient venting, the Contest Director may assign a score of zero to the violator for that round.
3. The Electronic Speed Control must always operate via its series connection to the ALS and not with direct connection to

the receiver.

4. 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 check altimeter will serve to verify Start Height while retaining the normal operation of the competitor's own installation.

5. 'Zooming' is defined as using kinetic energy (speed) stored in the plane during the launch to exceed the designated launch height by more than 10%. Zooming will be considered in violation of the intent of the altitude limiter rule and the Contest Director may assign a score of zero to the violator for that round.

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

### **(X).3 Task**

1. The task consists of a target time announced by the Contest Director (CD). 10 minutes is recommended. The CD may choose to change the target time based on local conditions. Target times ranging from 6 minutes up to 12 minutes are allowed for this event.

2. The flight is initiated with a 10 second launch buzzer. All pilots must launch their planes within the 10 second launch buzzer. A plane launched before or after the launch buzzer will receive 0 points for the round.

3. Launch direction will be determined by the CD or his/her designated Launch Supervisor. All pilots will launch in the direction specified. Pilots may re-direct 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 re-directing his flight path will result in 0 points for that pilot for that round.

4. 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 drive motor. The CD may allow a power-off launch for reasons of safety. However, the motor must be started within the launch window time.

5. The launching motor run must be a single continuous event. No motor re-starts are allowed at any time during the launch. A motor re-start will receive 0 points for the round.

6. 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 re-start will receive 0 points for the round.

7. Time will end when the model touches the ground or any ground-based object.

8. Landings will be scored as a maximum of 50 pts by any of the approved landing options noted in section (X).5.

**(X).4 Scoring**

1. Time will be recorded by the timekeeper/helper and will be truncated for scoring purposes.
2. Points are earned at the rate of +1 point/sec up to and including the target time and are reduced by -1 point/second beyond the target time (e.g. 600 possible points for a 10 minute target).
3. The flight scores will be normalized by taking the ratio of the contestants score to that of the highest score for that flight group and multiplying by 1000.
4. The contestant's final score will be the pilot's normalized score plus landing points.
5. No flight points will be awarded if the model touches anyone other than the pilot once an official flight has begun

**(X).5 Landing**

No landing points will be awarded if:

1. The model sustains significant damage during landing and, in the opinion of the contest director or his designate, is not safely flyable.
2. The model loses parts during landing
3. The model comes to rest in an inverted position.
4. The model touches the pilot.

OPTION 1 – Landing Circle

1. The landing circle will consist of a 10 meter tape marked in 1 meter increments.
2. The score will be graduated by 5 points per meter. Landing within 1 meter of the spot earns a score of 50 points. Landing beyond 10 meters from the spot earns a score of 0 points.
3. Landing points will be measured from the center of the landing circle to the nose of the aircraft.

OPTION 2 – Reduced Landing Circle

1. The landing circle will consist of a 5 meter tape marked in ½ meter increments.

2. The score will be graduated by 5 points per ½ meter. Landing within ½ meter of the spot earns a score of 50 points.

Landing beyond 5 meters from the spot earns a score of 0 points.

3. Landing points will be measured from the center of the landing circle to the nose of the aircraft

### OPTION 3 – Graduated Runway

1. The runway is defined by a center line 15 meters long and as closely aligned with the wind as practical and extends 2.5 meters either side of this center line.

2. A model which comes to rest with its nose beyond the ends of the center line or more than 2.5 meters to the side of the center line receives 0 points.

3. A model which comes to rest within the graduated runway will receive a maximum of 50 points, with a loss of 5 points per ¼ meter away from the center line as measured from the nose of the model to the centerline of the runway.

Recommendation: A 2.5 meter long piece of ½” or ¼” diameter plastic pipe (PVC) marked in 25 centimeter increments is a simple and effective method of obtaining landing scores with this option.

### **(X).6 General Requirements**

1. Field boundaries will be established by the CD consistent with local terrain and good safety practices. An aircraft landing beyond the field boundaries will receive 0 points for the round. Any part of the aircraft touching the field boundaries will be considered in-bounds except that parts shed from the aircraft and landing within the field boundaries will not qualify as in-bounds.

2. The CD may establish safety zones (pit area, spectator area, etc) over which a model may not be flown unless at a safe altitude as determined by local conditions. A first violation of the safety zone(s) will receive a warning. Subsequent violations will receive a zero score for that round.

3. The competitor may use up to three model aircraft in the contest. The competitor may combine the parts of the model aircraft during the contest, provided the resulting model aircraft conforms to the rules and the parts have been checked before the start of the contest.

4. Each pilot is allowed one timer/helper who may communicate with the pilot during the round. The timer/helper’s responsibilities are to assure the safety of the flight and to record the time of flight and the landing bonus. The timer/helper

may assist the pilot with launching, plane retrieval and advice (including time progression) that the pilot may request during the event.

5. Any device for the transmission of information from the model aircraft to the pilot or timer/helper which would assist the pilot in finding, locating or centering on thermal or slope lift is prohibited.

6. Any use of telecommunication devices in the field to communicate with competitors, their helpers or team managers while performing the competition task is prohibited.

7. Any device, other than the approved Altitude Limiter Switch, which is carried in or on the model and which enables total or partial independent control over the model, is prohibited.

**Logic behind proposed change, including alleged shortcomings of the present rules. State intent for future reference.**

This proposal formalizes and updates a preliminary set of rules published in Spring 2010 which has been the basis for ALES contests in the US - including 2 provisional events in Muncie as part of the AMA Nationals in 2010-2011. The rules have been kept intentionally simple to provide a format which can be used successfully by clubs and local sponsors with a minimum of overhead and administrative burden. The experience and feedback from contest directors around the US form the basis for the proposed rule set. A key to the success of this event has been the introduction of low cost and reliable altimeter switches from several suppliers (both domestic and imported). In practice, this contest format has proven to be simple to run at the club level but highly competitive at the national level. This proposal requests that AMA consider this task as a new official rules book event

**New event test data/information (new events only), please provide what testing of this new event has taken place to include number of participants and number of contests.**

A preliminary version of this rule set was published in Spring, 2010. Regional and National events flown to these rules include:

- 2010 and 2011 at the AMA Nationals in Muncie (provisional event – 18 to 20 entrants)

- 2010 and 2011 Polecat Challenge, Carlisle, PA. Approximately 18 contestants in 2010 and 34 in 2011.

- Minor variations of these rules have been used in 2010 and 2011 in Albuquerque for the F5J Worlds – also drawing approximately 20 contests both years.

- Dayton in Fall 2010, Spring and Fall 2011. Approximately 12-15 entrants for each event.

- Western Canada, 2011

- Davis, CA 2011 (SVSS club) with 28 entrants.

- Several club contests in Florida.

There were a number of other events in the US which have not been widely reported but used the AMA provisional rules to good effect. Additionally, the British Model Association (BMFA) has been using almost identical rules for 4 years.

The changes suggested from these events have been incorporated in the current proposal. These changes include safety considerations on launching, altimeter switch installation, new landing options patterned after an existing AMA landing option, and other updates for compliance with AMA safety requirements (lost parts rule, inverted landing rule, etc.).

Approximately 200 pilots around the US and Canada have flown this event over the past 2 years and the interest and number of participants appears to be rapidly increasing. Prior experience in the UK (BMFA) also suggests the format is well received and the rules, as presented here, have been very successful for contest administration and scoring

**Effect, if any, on current AMA records.**

None

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**Note: The Contest Board Chairman may, in coordination with the submitter of the proposal, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and to avoid ambiguity provided the proposal intent is not changed.**

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**Date of Signature** 3/15/2012