



# **Competition Regulations**

## **2011-2012**

### **Rules Governing Model Aviation Competition in the United States**

## **Electric**

#### **Amendment Listing, changes are shaded**

Original Issue	1/1/2011	Publication of Competition Regulations
Class B Speed 607	5/23/11	70' lines and 28G pull

# Electric

## ELECTRIC

*For events 604 through 630.*

**Purpose:** The purpose of this document is to present in a single place a unified set of rules for electric model airplane competition.

**1. Definition:** Electric powered model airplanes are model airplanes which are propelled only by electric motors which receive their power from onboard battery packs. No electrical connection to the ground is permitted during flight. In events other than record performances that specifically preclude on board battery chargers, except as specifically allowed by the contest director for competition purposes, no on board battery charges (such as, for example, solar cells) shall be allowed.

### 1.1: General Characteristics:

Maximum surface area	2335 sq. in. (150 dm. sq.)
Maximum weight	11 pounds (5 kilograms)
Maximum surface loading	24.59 oz. per sq.ft. (75 gr/dm sq.)
Minimum surface loading	3.93 ounces per sq. ft.* (12 gr/dm sq.)
Maximum battery voltage	42 volts

\*Except for event 627 and 629 (Indoor RC). (Individual battery cells can be of any commercially available chemistry type, and must be a rechargeable type).

## 2. Free Flight:

**2.1: General Specifications.** The use of gear boxes, folding propellers, and multiple motors are permitted. The propulsion system must be equipped with a means to cause the propeller to stop turning when the power is turned off. Free-wheeling propellers are not permitted. (This is to assure that the model is no longer under power.) The use of radio control is not permitted.

## 3. Control Line:

**3.1: General Specifications.** The use of gear boxes and multiple motors is permitted. Folding props are not permitted. No electrical power may be transmitted through the control lines. The use of radio control is not permitted. All applicable sections of Control Line General and Control Line Speed shall govern model and line construction and the timing of flights. There

shall be no loading requirements for Electric Speed models.

### 3.2: Class A Control Line Speed

*For event 606.*

Any motor(s) allowed but the battery pack is limited to a maximum of 8.4 volts nominal of any battery type.

The model must successfully pass a 25G pull test prior to flight.

The flight speed will be calculated based on the eight (8) laps of the circuit following two complete laps in the pylon.

Two (2) control lines, solid steel, shall be used and they shall be 52'6" feet long. Multi strand lines are not permitted. The minimum diameter of each line shall be .014 inches. Maximum model weight shall be 30 oz.

The CD will determine whether hand launches are permitted.

### 3.3: Class B Control Line Speed

*For event 607.*

Any motor(s) allowed with the battery pack limited to a maximum of 42 volts nominal of any battery type.

The model must successfully pass a 28G pull test prior to flight.

The pair of solid steel control lines must be at least .020 inches in diameter and not shorter than 70 feet in length. Multi strand lines are not permitted. Maximum weight shall be 60 oz.

Flight speed will be calculated based on seven (6) laps of the circuit following three (3) complete laps in the pylon.

The CD will determine whether hand launches are permitted.

## 4. Electric Radio Control:

**4.1: General Specifications.** The use of gear boxes, folding propellers, and multiple motors is permitted. The operator must demonstrate the ability to start and stop the motor(s) by radio command. For limited motor run events, the prop must come to a full stop to assure that the model is no longer under power. The Contest Director may specify that the motor cannot be run in the last minute of a flight. An optional landing task may be included at the discretion of the CD, and it shall account for no more than 25 additional points per flight. In the case of ties, a fly off will be defined by the CD.

At the discretion of the CD, Battery Allotment and Limited Motor Run events may

be flown “Man-on-Man.” Here, the best score in each flight group will be awarded 1,000 points, and all other scores in the flight group will be awarded a proportional part of the 1,000 points. (For example, a score of 74 percent as high as the best score in the flight will be awarded 740 points. The procedure is to take the score of the winner of the flight group and divide it into each of the scores of the other fliers, and then multiply the results by 1,000. This will give each contestant’s score normalized to the score of the winner of the flight group.) When an event is to be run “Man-on-Man,” all members of a flight group should be launched simultaneously. With Limited Motor Run (LMR) events, the motor run should not be included in the flight time. Rather, a launch master should time the motor run, and the flight timers should start flight timing at the signal, by the launch master, of “motor off.” The minimum number of fliers per group should be four (4). If a landing is opted for by the CD in a “Man-on-Man” format, he may consider awarding up to 100 additional landing points rather than a standard 25; however, a separate landing circle must be provided for each member of a “Man-on-Man” flight group.

**4.2.1 Radio Control Class 1/2A  
Sailplane Limited Motor Run (LMR):  
For event 604.**

Any speed 400 motor of any voltage rating with non-replaceable brushes. The motor may not be modified except for timing. The battery pack is limited to 8.4 volts nominal of any battery type.

The motor run is limited to 90 seconds but may be made shorter at the discretion of the CD. The motor run time shall begin at launch. The prop must come to a full stop to assure the model is no longer under power.

The flight task is an eight (8) to twelve (12) minute duration (or less at the discretion of the CD) with a precision landing time requirement. At the discretion of the CD, the timing will begin either at launch or when the motor is turned off and will stop when the model first contacts the ground or any ground based object.

Three (3) or more flights will be performed (exact number will be at the discretion of the Contest Director) with battery charging between flights. Scoring will be based on the sum of all the flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.2: Radio Control Class A  
Sailplane/Battery Allotment  
For event 609.**

Any motor(s) allowed but the battery pack is limited to a maximum 8.4 volts nominal of any battery type.

The flight task is eight (8) minute duration (at the discretion of the CD) with a precision landing time requirement. The eight (8) minutes duration shall include the motor run, which shall be, with the exception noted above, at the discretion of the contestant. Timing will begin at launch and will stop when the model first contacts the ground or any ground based object.

Three (3) to five (5) flights will be performed (the exact number will be the discretion of the Contest Director) with no battery charging between flights. Scoring will be based on the sum of the three (3) flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.3: Radio Control Class A Sailplane  
Limited Motor Run (LMR)  
For event 610.**

Any motor(s) allowed but the battery pack is limited to a maximum 8.4 volts nominal of any battery type.

The motor run is limited to 45 seconds or less of a single continuous motor run, but may be shorter at the discretion of the CD. The motor run time shall begin at launch. The prop must come to a full stop to assure the model is no longer under power.

The flight task is an eight (8) minute duration (at the discretion of the CD) with a precision landing time requirement. At the discretion of the CD, the timing will begin either at launch or when the motor is turned off and will stop when the model first contacts the ground or any ground based object.

Three (3) or more flights will be performed (the exact number will be the discretion of the Contest Director) with battery charging between flights. Scoring will be based on the sum of the three (3) flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.4: Radio Control Class B  
Sailplane/Battery Allotment  
For event 611.**

Any motor(s) allowed but the battery pack is limited to a maximum 42 volts nominal of any battery type.

The flight task is eight (8) minute duration (or less at the discretion of the CD) with a precision landing time requirement. The eight (8) minute duration shall include the motor run, which shall be at the discretion of the contestant. Timing will begin at launch and will stop when the model first contacts the ground or any ground based object.

Three (3) to five (5) flights will be performed (the exact number will be the discretion of the Contest Director) with no battery charging between flights. At the discretion of the CD, the models may be impounded between flights. Scoring will be based on the sum of all flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

The “Builder-of-the-Model” rule will not apply to this event.

**4.5: Radio Control Class B Sailplane Limited Motor Run (LMR)**  
*For event 612.*

Any motor(s) allowed but the battery pack is limited to a maximum 42 volts nominal of any battery type.

The motor run is limited to 30 seconds or less of a single continuous motor run, but may be shorter at the discretion of the CD.

The flight task is an eight (8) minute duration (at the discretion of the CD) with a precision landing time requirement. At the discretion of the CD, the timing for flight points will start either when the model is launched or when the motor is turned off and will stop when the model first contacts the ground or any ground based object.

Three (3) or more flights will be performed (the exact number will be the discretion of the Contest Director) with battery charging between flights. Scoring will be based on the sum all flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

The “Builder-of-the-Model” rule will not apply to this event.

**4.6: Radio Control Class B Sailplane, Endurance**  
*For event 613.*

Any motor(s) allowed but the battery pack is limited to a maximum of 42 volts nominal of any battery type.

The motor run is unlimited and the motor may be turned on and off at the discretion of the pilot.

The flight task is a single flight of 25 minutes duration (or less as established by the CD) including the motor run with a precision landing time requirement. Timing will start when the model is launched and will stop when the model first contacts the ground or any ground based object. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

The “Builder-of-the-Model” rule will not apply to this event.

**4.7: National RC Electric-Powered Sailplane Records**

**Procedure.** Obtain from AMAHQ an application for RC Electric-powered Soaring sanction. This, when completed and signed by an AMA Contest Director, is returned to AMAHQ with the sanction fee. Record attempts may also be made at AMA sanctioned events with the Contest Director’s permission.

**Classifications.** For each the AMA age classifications (Junior, Senior, and Open) and Class A Sailplane, and Class B Sailplane, records shall be recognized for Unlimited Motor Run Duration, and Limited Motor Run Duration; Unlimited Motor Run Distance, and Limited Motor Run Distance.

**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 may be attempted with a single flight provided sanctions are obtained for each task. A minimum of two (2) officials must witness the record attempt, both officials must be AMA members and at least one (1) of the two (2) must be a current AMA Contest Director. The Definition and General Characteristics of electric-powered model airplanes shall apply to all record attempts.

Initial record claims will have no starting minimums. After initial records are established all subsequent records must simply better the existing records.

Timing of the duration record attempts will start at the release of the model and stop when the model touches the ground (or solid ground-based object) and stops, or disappears from the timekeeper’s sight for more than five (5) 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 on (1) percent of each other with the lowest reading considered official. The duration flight shall be sustained on thermal lift

only, over essentially flat ground, and at no time shall the model fly in slope lift.

For LMR records, the motor run time shall be the same as the maximum allowed for event 610 for Class A Sailplane; and the maximum allowed for event 612 for Class B Sailplane. For Unlimited motor run records the motor run time will be at the discretion of the pilot.

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, 8.84 inches) and 1:200,000 over 50 kilometers, or Global Positioning System (GPS) coordinates for starting point and ending point of flight and straight line distance traveled, will be acceptable. 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 turnpoint 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 added 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

Altitude – The maximum height of the model above the ground at the launch point may be measured by a 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.

#### **4.8: Radio Control Class A Pylon**

##### **Racing**

###### ***For event 614.***

Any motor(s) allowed but the battery pack is limited to a maximum of 8.4 volts nominal of any battery type. The complete model, ready to fly, must not weigh more than five and one-half (5-1/2) pounds (two and one-half (21/2) kilograms).

A maximum of four (4) models will be flown in each heat.

The Contest Director will determine whether ROG and/or hand launching are permitted.

Each race will consist of 10 complete laps of the race course. If one (1) pylon is cut, the contestant will receive a 10% penalty added to his flight time for that heat. If two (2) pylons are cut the contestant will receive no score for that heat, and will pull up and out of the race until that heat is over.

All laps will be flown in a counterclockwise direction, with all turns being to the left.

The race course will be triangular with a distance of 300 feet between pylon one and pylon two, 60 feet between pylon two and pylon three, and 300 feet between pylon three and pylon one.

**Scoring:** The winner is selected on the basis of the fastest times recorded for each 10-lap round. The raw score on each round will be the time in seconds required to complete 10 laps. The net score on each round will be 200 minus the raw score. The final score will be the sum of the net scores from each round. A minimum of two (2) rounds must be flown, but if more than two (2) rounds are flown, each contestant may discard his worst score. The winner will be that contestant with the highest final score. In case of ties, the winner will be the contestant with the fastest single round.

#### **4.9: Radio Control Class B Pylon**

##### **Racing**

###### ***For event 615.***

Any motor(s) allowed but the battery pack is limited to a maximum of 42 volts nominal of any battery type. The complete model, ready to fly, must not weigh more than five-and-one-half (51/2) pounds (two-and-one-half (21/2) kilograms).

A maximum of four (4) models will be flown in each heat.

Model may be hand launched.

Each race will consist of 10 complete laps of the race course.

If a pylon is cut, the contestant will receive a 10% penalty added to his flight time for that heat. If two (2) pylons are cut the contestant will receive no score for that heat, and will pull up and out of the race until that heat is over.

All laps will be flown in a counterclockwise direction, with all turns being to the left.

The race course will be triangular with a distance of 478 feet (180 meters) between pylon one and pylon two, 100 feet (40 meters) between pylon two and pylon three, and 478 feet (180 meters) between pylon three and pylon one.

**Scoring:** The winner is selected on the basis of the fastest times recorded for each 10 lap round. The raw score on each round will be the time in seconds required to complete 10 laps. The net score on each round will be 200 minus the raw score. The final score will be the sum of the net scores from each round. A minimum of two (2) rounds must be flown, but if more than two (2) rounds are flown, each contestant may discard his worst score. The winner will be that contestant with the highest final score. In case of ties, the winner will be the contestant with the fastest single round.

#### **4.10: Radio Control Old Timer**

##### **Texaco (Pre-1943)**

###### ***For event 616.***

Any motor(s) allowed but the battery pack is limited to a maximum of 42 volts nominal of any battery type.

The model must be a replica of a model airplane designed and published and/or kitted before 1943.

The motor run is unlimited and the motor may be turned on and off at any time at the discretion of the contestant.

The flight task is a single flight with the objective of a 25-minute duration (or less as established by the CD) with a precision landing time requirement. Timing will start when the model is launched (or when it leaves the ground in the case where ROG is required) and will stop when the model first contacts the ground or any ground based object. Scoring will be one (1) point per second with a penalty of one (1) point per second overtime.

#### **4.11: Radio Control Class A Old Timer Battery Allotment**

##### ***For event 617.***

All models must have been designed, kitted, or published prior to December 31, 1942. Any motor(s) allowed but the battery pack is limited to a maximum of 8.4 volts nominal of any battery type.

The flight task is eight (8) minute duration (or less at the discretion of the CD) with a precision landing time requirement. The eight (8) minute duration shall include the motor run, which shall be at the discretion of the contestant. Timing will start when the model is launched (or when it leaves the ground in the case where ROG is required) and will stop when the model first contacts the ground or any ground-based object.

Three (3) flights will be performed with no battery charging between flights. At the discretion of the CD, models may be impounded between flights. Each second of flight time will be recorded as one (1) point. Each second in excess of the "target time" will result in one (1) penalty point.

#### **4.12: Radio Control Class A Old Timer, Limited Motor Run (LMR)**

##### ***For event 618.***

All models must have been designed, kitted, or published prior to December 31, 1942. Any motor(s) allowed but the battery pack is limited to a maximum 8.4 volts nominal of any battery type.

The motor run is limited to 60 seconds but may be made shorter at the discretion of the CD. Run time shall begin at launch (or when the model leaves the ground if ROG is required).

The flight task is an eight (8) minute duration (at the discretion of the CD) with a precision landing time requirement. At the discretion of the CD, the timing for flight points will begin either at launch (or when the model leaves the ground in the case where ROG is required) or when the motor is turned off and will stop when the model first contacts the ground or any ground based object.

Three (3) or more flights will be performed (the exact number will be the discretion of the Contest Director) with battery charging between flights. Scoring will be based on the sum of the three (3) flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the "target time" will result in one (1) penalty point.

#### **4.13: Radio Control Class B Old Timer/Battery Allotment**

##### ***For event 619.***

All models must have been designed, kitted, or published prior to December 31, 1942. Any motor(s) allowed but the battery pack is limited to a maximum of 42 volts nominal of any battery type.

The flight task is eight (8) minute duration (or less at the discretion of the CD) with a precision landing time requirement. The eight

(8) minute duration shall include the motor run, which shall be at the discretion of the contestant. Timing will start when the model is launched (or when it leaves the ground in the case where ROG is required) and will stop when the model first contacts the ground or any ground based object.

Three (3) flights will be performed with no battery charging between flights. At the discretion of the Contest Director, the models may be impounded between flights. Scoring will be based on the sum of the three (3) flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.14: Radio Control Class B Old Timer Limited Motor Run (LMR)**

***For event 620.***

All models must have been designed, kitted, or published prior to December 31, 1942. Any motor(s) allowed but the battery pack is limited to a maximum 42 volts nominal of any battery type.

The motor run is 45 seconds but may be made shorter at the discretion of the CD.

Motor run timing will start at launch (or when the model leaves the ground in the case ROG is required).

The flight task is an eight (8) minute duration (at the discretion of the CD) with a precision landing time requirement. At the discretion of the CD, timing will start either at launch (or when the model leaves the ground in the case where ROG is required) or when the motor is turned off and will stop when the model first contacts the ground or any ground based object.

Three (3) or more flights will be performed (the exact number will be the discretion of the Contest Director) with battery charging between flights. Scoring will be based on the sum of the three (3) flights. Each second of flight time will be recorded as one (1) flight point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.15: Radio Control “Oldie” (pre-1960) “Texaco”**  
***For event 621.***

Any motor(s) allowed but the battery pack is limited to a maximum of 42 volts nominal of any battery type.

The model must be a replica of a model airplane designed and published and/or kitted before 1960.

The motor run is unlimited and the motor may be turned on and off at any time at the discretion of the contestant.

The flight task is a single flight with the objective of a 25-minute duration (or less as established by the CD) with a precision landing time requirement. Timing will start when a model is launched (or when the model leaves the ground if ROG is required) and will stop when the model first contacts the ground or any ground based object. Scoring will be one (1) point per second with a penalty of one (1) point per second overtime.

**4.16: Radio Control Class A “Oldie” (pre- 1960) Battery Allotment**

***For event 622.***

Any motor(s) allowed but the battery pack is limited to a maximum of 8.4 volts nominal of any battery type.

The flight task is eight (8) minute duration (or less as established at the discretion of the CD) with a precision landing time requirement.

The eight (8) minute duration shall include the motor run, which shall be at the discretion of the contestant. Timing will start when the model is launched (or when it leaves the ground in the case where ROG is required) and will stop when the model first contacts the ground or any ground based object.

Three (3) flights will be performed with no battery charging between flights. At the discretion of the CD, models may be impounded between flights. Each second of flight time will be recorded as one (1) point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.17: Radio Control Class A “Oldie” (pre-1960) Limited Motor Run (LMR)**

***For event 623.***

Any motor(s) allowed but the battery pack is limited to a maximum of 4.8 volts nominal of any battery type.

The motor run is limited to 60 seconds but may be made shorter at the discretion of the CD.

The flight task is an eight (8) minute duration (or less established by the CD) with a precision landing time requirement. At the discretion of the CD, timing will start either at launch (or when the model leaves the ground in the case where ROG is required) or when the motor is turned off and will stop when the model first contacts the ground or any ground based object.

Three (3) flights will be performed with battery charging between flights. Scoring will be based on the sum of three (3) flights. Each second of flight time will be recorded as one (1)

point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.18: Radio Control Class B “Oldie” (pre-1960) Battery Allotment**  
*For event 624.*

Any motor(s) allowed but the battery pack is limited to a maximum of 42 volts nominal of any battery type.

The flight task is an eight (8) minute duration (or less established by the CD) with a precision landing time requirement. The eight (8) minute duration shall include the motor run, at the discretion of the contestant. Timing will start when the model is launched (or when the model leaves the ground in the case where ROG is required) and will stop when the model first contacts the ground or any ground based object.

Three (3) flights will be performed with no battery charging between flights. At the discretion of the CD, models may be impounded between flights. Scoring will be based on the sum of three (3) flights. Each second of flight time will be recorded as one (1) point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.19: Radio Control Class B “Oldie” (pre-1960) Limited Motor Run (LMR)**  
*For event 625.*

Any motor(s) allowed but the battery pack is limited to a maximum of 42 volts nominal of any battery type.

The motor run is 45 seconds but may be made shorter at the discretion of the CD.

The flight task is eight (8) minute duration (or less at the discretion of the CD) with a precision landing time requirement. At the discretion of the CD, timing for points will start either at launch (or when the model leaves the ground in the case where ROG is required) or when the motor is turned off and will stop when the model first contacts the ground or any ground based object.

Three (3) flights will be performed with battery charging between flights permitted. Scoring will be based on the sum of three (3) flights. Each second of flight time will be recorded as one (1) point. Each second in excess of the “target time” will result in one (1) penalty point.

**4.20: Radio Control Precision Aerobatics**

*For event 626.*

Any motor(s) allowed but battery pack is limited to a maximum of 42 volts nominal of any battery type.

The flight task will be the 11 FAI turnaround aerobatic maneuvers listed below. No points will be given for takeoff and landing. Hand launching is permitted. Landing gear is not required and the model may be landed on its belly without penalty.

**Flight Schedule.**

1. One Inside Loop.
2. Reverse Cuban Eight.
3. Slow Roll.
4. Stall Turn.
5. Square Loop.
6. Immelmann Turn.
7. Outside Loop.
8. Split S.
9. Top Hat.
10. Stall Turn with two (2) Half Rolls (one (1) before and one (1) after.
11. Two-Point Roll.

Scoring will be based on the basis of 10 possible points for each maneuver. Any maneuver not completed will be scored zero (0). A panel of three (3) judges will be used and the total score for each round will be the sum of the three (3) scores from the three (3) judges. At least two (2) rounds will be flown, and the winner will be based on the sum of the scores for each round.

**4.21: Indoor Electric Duration (RC)**  
*For event 627.*

Airplane shall not exceed two ounces flying weight. Maximum wing loading shall not exceed three and one-half (3 1/2) ounces/square feet. Battery size shall be one (1) 20 MAH Lithium Polymer battery. The airplane shall fly a circular or oval or figure-eight course as specified by the judges. Either ROG or hand launch is permitted. Total points will be the duration time in seconds. Contest Director will determine number of attempts allowed.

**4.22: Electric ROW RC Seaplane**  
*For event 628.*

**Taxi Slalom.**

1. Entry must be able to fly the other events (Touch and Go, Two (2) Minute Timed Flight, Loop the Loop) as entered in this event. Nothing may be added or deleted on the plane for other events.

2. One (1) time around course.
3. Must pass through gate to start time and to stop time.
4. If floats leave water at any time, the attempt will be disqualified.
5. If pylon is missed, the airplane must go back and start the course over.

### Touch-and-Go.

1. Must complete three (3) touch-and-gos.
2. Plane must make a 360-degree turn between each pair of touch-and-gos.
3. Time will be measured from when floats leave the water on takeoff to when floats leave the water on the third touch-and-go.

### Two (2) Minute Timed Flight.

1. Must execute one (1) loop and one (1) roll during flight.
2. Must call out each maneuver to judges before executing maneuver.
3. Time will start from when floats leave the water until when the airplane has landed.
4. Contestant must do self timing without the aid of mechanical or electronic devices.
5. Total flight time is to be as close as possible to two (2) minutes.

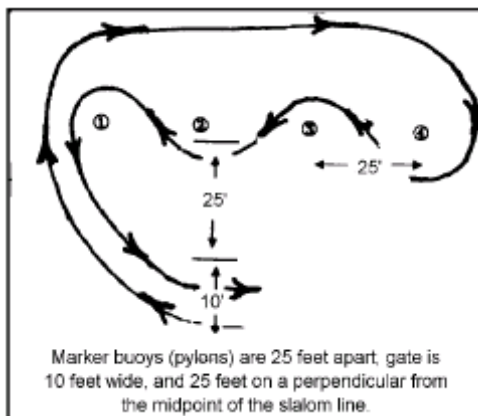
### Loop the Loop.

1. Must take off, complete three (3) loops, and land.
2. Time will be measured from the time the floats leave the water until the maneuvers are complete and the airplane has landed.
3. Judges will notify contestant if a loop was not completed; contestant will then do that one (1) loop over again.

The contestant's standing in the contest will be based on the sum of the event times in seconds, except for the two (2) minute timed flight, in which seconds over or under two (2) minutes will be added to the total as a penalty. The lowest total wins. The CD will determine number of attempts allowed.

**Example:** The contestant flies the Taxi Slalom in 90 seconds, the Touch-and-Go in 80 seconds, the Two (2) Minute Flight in 150 seconds, and the Loop the Loop in 50 seconds. The total score is then  $90 + 80 + (150 - 120) + 50 = 250$ . A score of 225 would win over this score, a score of 275 would lose.

### 4.23: Open Class Electric Indoor RC



### Duration

#### For event 629.

Airplane shall not exceed 21 ounces flying weight. Maximum wing loading shall not exceed three-and-one-half (3 1/2) ounces/square feet. Battery size is limited to any combination of cells designated by the manufacturer as rechargeable. The airplane shall fly a circular or oval or figure-eight course as specified by the judges. Either ROG or hand launch is permitted. Total points will be the duration time in seconds. The Contest Director will determine number of attempts allowed.

#### 4.24: Elexaco

#### For event 630.

#### Summary of Elexaco Competition Rules:

(Old-Timer or Open) The investment flying electric using a 400 motor is nominal as an existing radio with at least three channels is all that is needed. What makes it real interesting is that the performance of a seven-cell battery pack with a direct 400 motor system is outstanding.

Using alkaline battery cells in the transmitter makes the model always available for flight when stored in the trunk of your car. Because of the small size, it is stored assembled. In traveling where a field is sited (a football field will do) simply stop, charge the flight battery for motor and receiver power by BEC (Battery Eliminator Circuitry) and fly because the alkalines for the transmitter are always ready.

Now to add interest, a simple endurance competitive event was designed that can be decided at the flying field. All that is required is a stopwatch.

To establish equity, the Elexaco event is offered making it easy as it defines specifically the hardware required. It is designed as an electric version of the ever-popular 1/2A Glo-Powered Texaco event and can be restricted to Old-Timer if desired by option.

#### Elexaco Event Rules

1. Any model with an aspect wing ratio of less than seven (7) qualifies (wingspan divided by center chord).
2. Any rated 400 Electric ferrite motor (not brushless or cobalt and not geared) qualifies.
3. A seven-cell 250- to 350-mAh, 8.4 volt nominal power pack of any battery type must be used.
4. Any motor shut-off device is acceptable.

#### Flight Rules

Timed from either take-off or hand launch, motor is allowed to run for two minutes and shut off by radio—if motor is shut off prior to two

minutes, it is not to be turned back on—if turned back on score is 0. Flight is continued and timed toward maximum flight time of 15 minutes to land at designated field. Score one (1) point per second (maximum 900 points). Exceeding maximum results in penalty of one (1) point per second.