



# Radio Control Special Events

2017-2018



RULES GOVERNING MODEL AVIATION COMPETITION IN THE UNITED STATES

# Amendment Listing

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Amendment Topic	Publication Date	Description
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## VINTAGE—(GAS) FOR EVENT 701

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A combined Free Flight and Radio Control Event. (Basically a Free Flight event with the option to use mechanical means or remote control to shut off the engine and/or to dethermalize.)

**1.**

Radio control is acceptable only during the engine run. The instant the engine is shut off, no RC is allowed until it is desired to dethermalize (RC is not to be used during the endurance portion of the flight). Use of remote control for any other reason terminates the flight.

**2.**

Dethermalizer by remote control or mechanical means is acceptable.

**3.**

All models must have been designed, kitted or published prior to December 31, 1942. Scaling up or down of original planes is unacceptable. Claims for prior design date shall be authenticated by submission of documentation (dated photos, affidavits, etc.) for approval by a three-person review board appointed by the AMA Technical Director. This will be an ad hoc board appointed when there is material to justify its existence.

**4.**

Fidelity of the model must be maintained, including such items as airfoil, external outlines, span, dihedral, polyhedral, etc. Substitute materials and internal structural changes are acceptable. Proof of authenticity is the responsibility of the contestant.

**5.**

Only two-stroke ignition engines and gasoline and oil mixture fuels may be used. Glow engines are prohibited.

**6.**

Minimum weight is eight (8) ounces per square foot of plan (not projected) wing area.

**7. Classes:**

**A.**

Engine displacement to 0.20 cubic inches.

**B.**

Engine displacement from 0.20 to 0.30 cubic inches.

## **C.**

Engine displacement from 0.30 to 0.65 cubic inches.

Cabin and pylon models may be combined or separated if desired. Pylon models are those with the wing mounted on a pedestal or cabane mount. All others are defined as cabin.

### **8. Limited Engine Runs: (Engine run is complete when its running sound ceases.)**

Original ignition engines manufactured prior to 1950: 20 seconds

Replicas of original engines: 17 seconds

Modern engines converted to ignition (cross scavenged only—no schnuerles): 14 seconds

## **9.**

A flight of less than 40 seconds is considered an attempt. Six (6) attempts are allowed to make three (3) official flights, the total of three (3) official flights constitutes the score. In case of a tie, the winner will be determined by a flyoff with the first round starting with the normal engine run. Should additional rounds be required, the engine run will be reduced by five (5) seconds each round until a winner is determined.

## **10.**

Maximum flight time will be determined by field conditions and announced by the contest director of the meet prior to any official flights.

## **RADIO CONTROL DURATION (OFFICIAL) FOR EVENT 702**

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### **1. General**

All AMA safety rules, all general rules for nonscale Radio Control events given in the AMA rule book and all local rules as outlined by the CD at individual events will be applicable to this event, provided the local rules do not conflict with AMA rules.

### **2. Objective**

To provide events for several classes of engine-powered models, with flight duration as the basis of competition, that can be flown in fields with small takeoff and landing areas through the use of radio control equipment and techniques to return the model to a designated recovery area after each flight.

### **3. Model Aircraft Specifications**

The design and/or configuration of models will not be limited except as specified below. All models will be inspected before the first flight and any deviation from

the criteria in these specifications will be grounds for disqualification of the model. The CD, at his discretion, may require a test flight for models of unconventional design or those featuring unconventional materials and/or construction techniques in order to demonstrate that the model can be flown safely.

### **3.1. Engines**

Models will be powered by a single reciprocating engine specifically designed and produced in quantities of 500 or more for model aircraft use and available through normal model equipment outlets.

The engine will be a Cox reed-valve engine with the standard eight (8) cubic centimeter fuel tank as furnished by the engine manufacturer with the Black Widow and Golden Bee engines. Engines can be any combination of standard, unmodified parts as manufactured by Cox, including standard Cox mufflers. The fuel pickup tube in the fuel tank may be repositioned and/or replaced with other tubing.

### **3.2. Propeller**

A single two-bladed wood, plastic, or reinforced composite propeller will be mounted directly on the engine crankshaft and will operate at engine speed. Folding or free-wheeling propellers will not be permitted. Propellers will not exceed seven (7) inches in diameter.

### **3.3. Minimum Weight**

The total weight of the model in ready-to-fly configuration but without fuel will be no less than eight (8) ounces per square foot of projected wing area. Horizontal stabilizer area in excess of 50 percent of wing area will be included in projected wing area for purposes of calculating minimum weight.

### **3.4. Maximum Span. ]**

Overall projected wingspan will not exceed 60 inches.

## **4. Flight Control System**

All models will be equipped with an FCC-approved radio system which operates on one (1) of the frequencies approved by the FCC for model airplane use. The radio system will have a minimum of one (1) function whereby the direction of flight can be continuously controlled by deflection of one (1) or more control surfaces. Any number of other RC functions or non-RC functions can be utilized. Rate of climb sensors, wing leveling devices, or other control and/or telemetry systems not controlled by direct manipulation of the main control transmitter will not be permitted.

#### **4.1. Engine Control System**

Models may be equipped with an engine control system. Engine control and/or shutoff can be accomplished by a radio control device or system that will provide positive engine shutoff at a predetermined time after the model is launched.

### **5. Contest Operational Procedures**

All flights will be launched from and returned to a designated launching and recovery area to be clearly marked and described to all contestants by the Contest Director. Flying will proceed in accordance with a frequency control system to be established and administered by the CD. Requests to fly on each frequency will be recorded and clearance to use each frequency will be granted in the order that requests are received. When clearance to fly has been granted, and others are waiting for the same frequency, the flight must be launched within a time limit to be established by the CD. If others are not waiting when clearance is granted, the contestant may delay launching the flight until another request for the same frequency is received. The time limit for launching will start at the time the new request is received and the CD will immediately notify the contestant holding the frequency clearance that the time limit for launching has commenced. Failure to launch within the time limit will result in the flight being moved to the end of the waiting list for that frequency. Other contest procedures such as transmitter impound and/or other restrictions needed for safety considerations can be established at the discretion of the CD, provided such restrictions or variations do not conflict with other AMA rules. Variations in maximum flight times needed to expedite the contest can be established by the CD in accordance with guidelines given in paragraph 6.1.

#### **5.1. Number of Models**

Each contestant shall be allowed two (2) models. Each model must satisfy all applicable AMA rules.

#### **5.2. Number of Flights**

Each contestant will be allowed a total of six (6) attempts to make three (3) official flights.

#### **5.3. Unofficial Flights**

An unofficial flight occurs:

- a. When the total flight time is less than 90 seconds unless the contestant elects to declare the flight official. The decision must be made immediately and cannot be reversed later.



b. When the model collides with another model during an official flight, the contestant may declare the flight to be unofficial. The decision must be made immediately and cannot be reversed later.

c. When model parts are dropped or the model is aided by the contestant during the official portion of the flight either directly or indirectly by any means other than normal control inputs.

## ***6. Timing of Flights***

Timing for each flight starts at the instant the model is launched by hand or released for ROG takeoff. Time for scoring purposes ends when the model touches the ground, strikes an obstruction which prevents further flight, passes from sight of the timer or when flight time exceeds the limit given in section 6.1. The timer will inform the contestant when the maximum flight time has ended. Timing will continue after time for scoring purposes has been completed and recorded until the model has landed and the additional time will be recorded as recovery time as outlined in section 6.2.below. Optical devices other than normal eye wear shall not be used to maintain visual contact with the model by either the flier or the timer.

### **6.1. Maximum Flight Time**

The maximum flight time will be 15 minutes unless a shorter or longer maximum flight time is established by the CD. The maximum flight time cannot be changed after any official flight has been made. No maximum engine run time will be imposed, other than that imposed by the limited volume of the fuel tank.

### **6.2. Recovery Time**

Contestants will be allowed an additional period of five (5) minutes after timing for score is completed to return the model to the designated recovery area and switch off the RC transmitter. Any overrun of the allowed recovery time will be deducted from the total score for the flight. If a deduction for overrun of the recovery time exceeds the official time, the flight will be scored as an official flight of 0 duration. The deduction for recovery time overrun will not be carried over to subsequent flights. The allowance for recovery time may be adjusted at the discretion of the CD and cannot be changed after any official flight is made. The CD may establish the recovery time at zero (0) seconds and any overrun of the maximum time will be deducted from the total score for the flight, as outlined in this section.

## ***7. Scoring of Flights***

Scoring time will be the total corrected elapsed time of three (3) official flights plus the total corrected time of the qualified flyoff flights. Flight time shall be scored in seconds, with all fractions of a second to be dropped. All individual

flights exceeding the maximum flight time shall be recorded as a maximum flight except as noted above. An attempt is scored as a zero (0).

### **8. Flyoffs**

If, after all contestants have recorded three (3) official flights or (6) six attempts or the CD has declared the contest to be over, two (2) or more contestants have identical scores, each of the contestants involved in the tie will be allowed one (1) attempt at a flyoff flight. Maximum flight time for flyoffs will be the same as an official flight. If frequency conflicts occur in flyoffs, clearance to use the frequency will be granted in the same order as that used in the final round of official flights preceding the flyoff.

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## **RC CLIMB AND GLIDE (OFFICIAL) FOR EVENT 703**

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### **1. General**

All general rules for radio-control events given in the AMA rule book will be applicable to this event.

### **2. Objective**

To provide an event for radio control, engine powered models with flight duration as the basis of competition.

### **3. Model Aircraft Specifications**

The design and/or configuration of models will not be limited except as specified below. All models will be subject to inspection before the first flight and any deviation from the criteria in these specifications will be grounds for disqualification of the airplane. The CD can, at his discretion, require a test flight for models of unconventional design or those featuring unconventional materials and/or construction techniques in order to demonstrate that the model can be flown safely.

#### **3.1. Aircraft Geometry**

Folding wings, flaps, or other systems that vary the planform geometry of the model, or the shape and/or size of the airfoil section in flight are not permitted.

#### **3.2. Minimum Weight**

The total weight of the model in ready to fly configuration, but without fuel, will be no less than eight (8) ounces per square foot of plan form wing area.

### **3.3. Engines**

Models will be powered by a single reciprocating, internal combustion engine produced in quantities of 500 or more for model aircraft use and available through normal model equipment outlets. Total displacement will not exceed 0.26 cubic inches for two-stroke engines or 0.41 cubic inches for four-stroke engines. Engines will be equipped with a radio controlled throttle system.

### **3.4. Propellers**

A single two-blade wood, plastic, or reinforced composite propeller will be mounted directly on the engine crankshaft and will operate at engine speed. Folding, feathering, or freewheeling propellers will not be permitted.

### **3.5. Mufflers**

All engines will have an effective muffler. The noise reduction efficiency of mufflers, tuned pipes, or other exhaust attachments serving as mufflers will be subject to approval by the Contest Director, in accordance with rules established by the AMA. Any special muffler requirements or sound measurement criteria in effect at individual fields will be explained in contest announcements and publicity.

## **4. Flight Control System**

All models will be equipped with an FCC-approved radio system which operates on one (1) of the frequencies approved by the FCC for model airplane use. The radio system will have a minimum of two (2) functions whereby the direction of flight can be continuously controlled by deflection of one (1) or more control surfaces, and the engine can be shut down at any time in the flight. Separate actuators will be required for each function. Any number of other RC functions or non-RC functions can be utilized. Rate-of-climb sensors, wing-leveling devices, or other control and/or telemetry systems not controlled by direct manipulation of the main control transmitter will not be permitted.

## **5. Contest Operational Procedures**

All flights will be launched from a designated launching area and landed in a designated recovery area. Each area will be clearly marked and described to all contestants by the CD. Flying will proceed in accordance with a frequency control system to be established and administered by the CD. The following system is suggested: The flight order shall be arranged in accordance with radio frequencies in use so as to permit as many flights simultaneously as possible, thereby equalizing the weather conditions for all competitors. Any contestant can request clearance to use any frequency that is not in use. Other contest procedures such as transmitter impound and/or other restrictions needed for safety considerations can

be established at the discretion of the CD, provided such restrictions or variations do not conflict with other AMA rules.

### **5.1. Number of Models**

Each contestant shall be allowed two (2) models. Both models must satisfy all applicable AMA rules and rules for this event.

### **5.2. Number of Flights**

Each contestant will be allowed a total of six (6) attempts to make five (5) official flights.

### **5.3. Unofficial Flights**

An unofficial flight occurs when the total flight time is less than 90 seconds unless the contestant elects to declare the flight official. A flight is also considered unofficial when the model collides with another model during an official flight. Either or both contestants may declare the flight to be unofficial. In both instances of unofficial flights, the decision must be made immediately and cannot be reversed later.

## ***6. Timing of Flights***

Timing for each flight starts at the instant the model is launched by hand or released for ROG takeoff. Time for scoring purposes ends when the model touches the ground, strikes an obstruction which prevents further flight, or passes from sight of the timer. The total flight time, to the nearest whole second (discard fractions), will be recorded on each contestant's score sheet by the timer. Optical devices other than normal eye wear shall not be used to maintain visual contact with the model by either the flier or the timer. The flier may elect to use other optical devices to track the model to avoid unnecessary loss of equipment. When such devices are used, the flight will be scored as an official flight of zero (0) duration.

### **6.1. Engine Run Time**

The engine run time for each flight will be a maximum of one minute (60 seconds). The last audible exhaust sound will indicate to the timer that the engine has been shut off. The timer will then ask the contestant to advance the throttle on his transmitter to demonstrate that the engine has been shut off. The timer's judgment will be final in the determination of when complete engine shut down occurs. An engine run of over one minute (60 seconds) will result in the flight being declared an official flight of zero (0) duration.

## **6.2. Maximum Flight Time**

The maximum flight time will be 15 minutes unless a shorter or longer maximum flight time is established by the CD. The maximum flight time cannot be changed after any official flight has been made. The timer will notify the flier when a maximum has been accomplished, and will give approximate times to the contestant when requested by the contestant.

## **7. Scoring of Flights**

Scoring time will be the total elapsed time of five (5) official flights plus the total time of the qualified flyoff flights. Flight time shall be scored in seconds with all fractions of a second to be dropped. All individual flights exceeding the maximum flight time shall be recorded as a maximum flight. An attempt is scored as a zero (0).

## **8. Landings Outside of the Designated Recovery Area**

Any flight in which the model or any part of the model touches the ground outside of the designated recovery area will be scored as an official flight of zero (0) duration.

## **9. Flyoffs**

If, after all contestants have recorded five (5) official flights or six (6) attempts, or the CD has declared the contest to be over, two (2) or more contestants have identical scores, each of the contestants involved in the tie will be allowed one (1) attempt at a flyoff flight. Maximum flight time for flyoffs will be the same as for previous official flights. If frequency conflicts occur in flyoffs, clearance to use the frequency will be granted in the same order as that used in the final round of official flights preceding the flyoffs.

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## **RADIO CONTROL COMPETITION FUN FLY FOR EVENT 705**

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### **1. Objective**

The purpose of these rules is to standardize tasks and rules for radio controlled competition fun fly contests. The requirements will challenge current aircraft design so as to promote innovation and originality in design improvements while staying within AMA safety and weight limits. Tasks will be timed or mission tasks with subjectivity by judges kept to a minimum.

### **2. General**

These rules provide flight tasks suitable for unlimited time events as well as traditional mission-oriented, fun-fly tasks. They provide a variety of tasks from which a Contest Director can choose to define a challenging contest tailored for a given location, expected weather conditions and expected skill level of attendees.

The builder-of-the-model rule will not apply.

### **3. Safety**

#### **3.1.**

A zero line shall be established between the flight area and judge/pit/spectator area. When possible a warning line should be established in front of the zero line. The zero line extends to infinity at both ends of the flight line. A flag or pole should mark the zero line at least 100 feet past the ends of the runway to improve visibility for the pilots and judges. A separate judge should have sole responsibility for indicating zero line violations. The aircraft must remain beyond the zero line at all times in the air and on the ground during the task. All personnel must remain behind the zero line unless specifically noted in the task description.

#### **3.2.**

All flying **MUST** be in a safe and controlled manner.

#### **3.3.**

At the discretion of the CD, a 97 dB noise limitation may be used if specified in pre-contest announcements. The noise shall be measured at 3 meters from the aircraft per the current RC Aerobatic guidelines.

#### **3.4.**

The CD or designee must conduct safety inspections prior to and during the contest.

#### **3.5.**

All pilots will have a helper during each flight and aircraft engines will be started in a safe area.

### **4. Task Categories**

There are two categories or styles of fun-fly tasks from which to choose. These categories set the tone of the contest. Either or both (separately) may be offered at a contest. If both categories are offered, each pilot may enter both categories.

#### **4.1.**

##### *Unlimited*

No limit is placed on design or equipment as long as it complies with AMA safety code. All tasks are selected from the timed tasks.

### *Fun Fly*

The fun-fly tasks are typically selected from mission tasks, but may also include timed tasks. Aircraft may be limited by minimum wing loading, radio features (i.e. no mixing), no tuned pipes, or by standard design limitations, or may remain unlimited. Wing area calculations for minimum wing loading may be simplified to span x maximum chord including ailerons. A common limited design approach that has proven successful is the following:

No stick/boom type aircraft may enter. Profile fuselage airplanes are allowed with the following limits:

The profile fuselage must be a minimum of 1/4-inch wide, 3-inches high at the back plate area of the engine, and 1-inch high at the leading edge of the horizontal stab. The vertical fin or sub-fin cannot be used in obtaining these dimensions. At some point between the engine mounting plate and the leading edge of the horizontal stab the fuselage must be 5-inches high. This dimension can be obtained with a cockpit outline or a gradual slope from 3-inches up to 5-inches and back down to 1-inch. A 3-inch-high fuselage with a 5-inch-high stick will not meet the intent of this rule.

The main landing gear must have two wheels mounted parallel to an imaginary line between the center of each wing tip. There will be a minimum of 6 inches between the inside edges and maximum of 20 inches to the outside edges of each wheel. Wing tip wheels will not be considered as main landing gear. Any airplane limitations shall be clearly stated in all contest literature.

## **5. Event Classes**

There are two classes of difficulty in each category. A pilot may only fly in one class of each category at a contest. Higher value prizes should be awarded to the masters class to encourage sportsman-class pilots to move up. If both task categories are offered, a pilot who flies in the Masters class in one category may fly in the Sportsman class in another category. The local mix of skill levels will normally determine the split between the two classes. The CD has final authority on entry classes.

### **5.1. Masters Class**

Top level of competition in the category

### **5.2. Sportsman Class**

Entry level competition in the category.

## **6. Flight Line Procedures**

### **6.1. Aircraft**

Each contestant may enter as many as he/she would like.

### **6.2. Sequence Options**

Several options are offered for proceeding through the selected tasks. The CD should use a procedure that fits with the pace and size of the contest and the format of events chosen. The CD should, if at all possible, choose tasks and a sequence option that allows at least four different tasks to figure the final score.

#### **6.2.1.**

Each pilot flies a given task once, visiting the flight line separately for each task. This approach may be suited to the slower-paced fun fly category.

#### **6.2.2.**

Each pilot flies a given task once, visiting the flight line separately for each task. After all tasks are flown, one or more (number predetermined) “makeup” rounds are flown, in which the pilot chooses to try to better his score in any prior task. If the original score is better, the pilot keeps the original score. If more than one makeup round is offered, the pilot may be limited to a single makeup attempt for any given task.

#### **6.2.3.**

Each pilot flies a given task twice in a single visit to the flight line. The better score is retained for a task score. This approach usually does not incorporate makeup rounds.

#### **6.2.4.**

Each pilot flies two different tasks in a single visit to the flightline. Both scores are independent and figure in the pilot’s total. This approach may be combined with makeup rounds as in method 6.2.2.

### **6.3. Official Flight**

#### **6.3.1.**

In timed tasks, the official flight time starts when the aircraft moves after the pilot and timers agree they are ready.

#### **6.3.2. *The official end of time is when all of the following occur:***

- a. The prescribed maneuver is complete.



b. The main wheel touches the ground and the aircraft can fly away under power.

**6.3.3.**

If any part of the airplane touches the ground at any time during the task prior to the completion of the task except when a touch is required, the flight scores a ZERO.

**6.4.**

If manpower permits, three timers will be used for timed flights, with the high and low times dropped.

**6.5.**

At his/her discretion, the CD may elect an official counter (loops, spins, etc.) who may also be a timer. If the CD does not elect a counter, the pilot may select his or her own.

**6.6.**

In the first round, pilots will fly in random order determined by the CD. Subsequent rounds will be flown in descending order based on each pilot's total score.

**6.7.**

A landing area shall be designated in which the aircraft must make all touchdowns, including the last one to stop the clock. The landing area may include an entire active runway, and should be clearly marked. The landing area should be at least 100 feet wide and 150 feet long if the runway size permits. If more than one flightline is utilized, the landing areas should be separated by at least 200 feet.

**7. Scoring**

**7.1.**

In the Unlimited category, normalized scoring will be used for each task. The score shall be calculated as  $100 \times (\text{best time}) / (\text{current pilot's time})$ .

**7.2.**

In the fun-fly category the score for each task is determined by placement in the tasks as follows:

<i>Place</i>	<i>Points</i>
1st	100

2nd	81
3rd	64
4th	49
5th	36
6th	25
7th	16
8th	9
9th	4
10th	1
Other	0

Placement in the task is determined by points earned in the task, with ties broken by the time taken to complete the task to discourage taking too much time. Alternatively, this approach (squared scores) may be extended to give all pilots completing the tasks points, normalizing may be used, or other approaches may be developed for awarding overall score totals.

### **7.3.**

If a tie exists for overall placement, an additional task (chosen by the CD) will be flown to break the tie.

### **7.4.**

There will be no maximum time limit for each task.

## **8. Event Tasks**

Maneuvers in brackets ( ) in the task descriptions indicate repetitions of that part of the task that must be completed before beginning the next part of the task. The number indicated in brackets is the typical number of repetitions flown. For example, Roops (5) would be flown as “Take off, roll, loop, roll, loop, roll, loop, roll, loop, roll, loop, and land.”

### **8.1.**

There will be a minimum of four (4) different tasks per contest.

## **8.2.**

Tasks may be announced prior to the contest or drawn at the contest. It is encouraged that a contest format has a variety of tasks. If the tasks are drawn at the contest, similar tasks (such as all looping tasks) should be placed together and drawn from once so that one type of task does not dominate the contest.

The CD may develop new tasks based on variations or combinations of the tasks below or using entirely new ideas for tasks. Unlimited tasks should be timed events, whereas Fun-Fly tasks are typically mission-oriented. Participant, official, and spectator safety should be considered when developing new tasks.

## **8.3.**

Timed Tasks:

### ***8.3.1. Loop Tasks***

- A. Inside Loops (10): Take off, (inside loop), touch down.
- B. Outside Loops (10): Take off, (outside loop), touch down.
- C. Outside (5) Inside (5): Take off, (outside loop), (inside loop), touch down.
- D. Split outside (5) Inside (5): Take off, (outside loop), touch-and-go, (inside loop), touch down.
- E. Loop Combo (5): Take off, (inside loop), (outside loop), (inside loop), touch down.
- F. Split Loop Combo (5): Take off, (inside loop), touch-and-go, (outside loop), touch and-go, (inside loop), touch down.

### ***8.3.2: Roll-Loop-Spin Task***

- A. Roops (5): Take off, (roll, loop), touch down.
- B. Split Roops (3): Take off, (roll, loop), touch-and-go, (roll, loop), touch down.
- C. Modified Dixie Death (2): Take off, (3 rolls, 3 loops, touch down.)
- D. Dixie Death (2): Take off, (3 rolls, 3 spins, 3 loops, touch down.)

E. Split Dixie Death: Take off, 3 rolls, touch down, 3 spins, touch down, 3 loops, touch down.

F. Outside Roops (5): Take off, (roll, outside loop), touch down.

G. Split Outside Roops (3): Take off, (roll, outside loop), touch-and-go, (roll, outside loop), touch down.

H. Triple Split Roops: Take off, (roll, loop), touch-and-go, (roll, loop), touch-and-go, (roll, loop), touchdown.

I. JLS Combo: Take off, 3 roll/loops, touch-and-go, 3 rolls, 3 inside loops, touch-and-go, 5 inside loops, touch-and-go, 5 loop touch-and- goes, touch down.

### **8.3.3: Touch and Go Tasks**

A. 180 Touch-and-Go (10): (Take off and touch down) with a minimum 180 degree heading change between each takeoff and touch.

B. 360 Touch-and-Go (10): (Take off and touch down) with a minimum 360 degree heading change between each take off and touch. The heading change may be vertical (loop), or horizontal (turn), or in between.

C. Roll Touch-and-Go (5): (Take off and touch down) with a roll between each takeoff.

D. Roop Touch-and-Go (5): (Take off and touch down) with a roop between each takeoff.

E. Roll Touch Loop Touch (5): (Take off, roll, touch-and-go, loop, touch)

F. Spot Touch-and-Go (5): (Take off, touch in defined area).

### **8.3.4: Limbo Tasks**

A ribbon is stretched between poles that are 50' apart and 5' high. Aircraft cannot touch the ground until all passes are completed. The pole closest to the zero line shall be at least 30 feet from the zero line. The pilot is permitted to stand in the area between the closest pole and the zero line, but not beyond the closest pole. No other persons may stand beyond the zero line.

A. Limbo (5): Take off away from the ribbon, (pass under ribbon x5) touch down.

B. Loop Limbo (5): Take off away from ribbon, (inside loop, pass under ribbon x5), touch down.

C. Roll Limbo (5): Take off away from ribbon, (roll, pass under ribbon x5) touch down.

D. Inverted Limbo (5): Take off away from ribbon, (pass under ribbon inverted x5), touch down.

### **8.4: Mission Tasks**

The CD may select target areas and scores for the following tasks as needed to reflect local skill levels.

#### ***8.4.1: Taxi***

A timed task for airplanes to complete a designated course on the runway. The course may be a straight line, oval around pylons, or zig zag through the gates, etc. The pilot may elect to remove the wing from the aircraft.

#### ***8.4.2: Climb and Glide***

Climb to altitude for preset time (20-30 seconds) shut off engine, time glide to landing on runway. Masters glide should be done inverted, with the time stopping at roll upright. Longest time wins.

#### ***8.4.3: Timed Flight***

Pilot must fly airplane for exactly 1, 2, or 3 minutes from liftoff to landing. Pilot may be required to perform specific maneuvers during the flight (such as rolls, loops, or spins). Score will be total seconds of flight if less than required time or total seconds minus (2x) seconds over required time if flight time exceeds required time. NO timing devices allowed near pilot.

#### ***8.4.4: Spot Landing***

Designate a target (circles, squares, random sizes or locations on the runway) and give the pilot three (3) passes to accumulate highest score. A variation can have five (5) boxes designated ace through jack and the best poker hand wins; or ten (10) boxes ace-10 and the best blackjack hand wins.

#### ***8.4.5: Table Landing***

The pilot makes 5 passes (or 2 minutes of passes) to perform a maximum of 3 touch-and-goes on a 4 x 8-foot platform above the ground. The platform can be wood or Styrofoam supported by cable spools, saw horses, or a table. At least one main wheel must touch the platform to count as a successful pass. Event is timed for fastest time from takeoff from ground to landing on ground after 3 touches. Fastest time with 3 touches places ahead of fastest time

with less than 3 touches. Sportsman Class fliers can have the platform placed closer to the ground or on the ground. The platform is placed at least 30 feet in front of zero line and pilot can stand anywhere between zero line and platform but not beyond the platform. No other person may stand beyond the zero line.

#### ***8.4.6: Bomb Drop***

The pilot will drop the bomb onto a target from a cup or dowel attached to the plane. Devices are provided (cup, dowel, washer, donut, egg, piece of hot dog, or other bomb. Any bomb chosen should not exceed one [1] ounce). No servo activated releases are permitted.

#### ***8.4.7: Balloon Burst***

A balloon is fastened to a balsa stick on the far side of the runway. The pilot gets three (3) passes parallel to the runway to break the balloon or the stick. Points are highest for the first pass to hit or break the balloon and lowest for the third pass hit or break.

#### ***8.4.8: Can Spot Landing***

A soda can is fastened to a 50' monofilament line and attached to the aircraft. The pilot is given three (3) passes to touch only the can onto target.

#### ***8.4.9: Progressive Limbo***

A 25' limbo ribbon is set at 6', 4', 2' for the pilot to pass under. The lower the ribbon the higher the score. Three (3) attempts per flight.

#### ***8.4.10***

Mission. Bomb Drop, Can-Can, or Balloon Burst and Sport Landing (8.4.6. and 8.4.8. or 8.4.7. and 8.4.4. rules) are combined. Multiple passes can be allowed. All scores are added together for a total flight score.

#### ***8.4.11: Spins***

During a 60-second period the pilot must take off, climb to altitude, and perform as many nose-down spins as possible. The pilot may climb up and spin down more than once during the 60-second period.

#### ***8.4.12: Carrier Landing***

A ribbon is placed 5' high across the end of a carrier target marked on the runway. The pilot must fly over the ribbon and land on the carrier as soon as possible. The airplane must not taxi off the side or off the end of the designated deck. The point of touch determines the score.

#### ***8.4.13: Climb and Glide***

Climb and Glide with spot climb to altitude for a preset time (20-30 seconds), shut off engine, time glide to landing on the runway. Masters may be required to glide inverted, with time stopping at roll upright. Bonus seconds are added for distance spinner nut ends up from a predetermined spot. Distance may be determined with a measuring tape or circles on the runway.