

Trainer Banger

Flying Competition

A photograph showing a person sitting on the grass, working on a red and white model airplane. The airplane is a high-wing trainer, and the person is focused on adjusting a component on the fuselage. The background is a grassy field.

INTRODUCTION

The Trainer Banger Flying Competition was designed by P.J. Ash of Lexington Kentucky to allow pilots of all “shapes and sizes” enjoy competition. After competing for several years, he wanted to open this fun sport to as many as he could. The idea behind using trainers was two fold. One, most every rc pilot either has or can get his or her hands on a trainer relatively inexpensive. Two, with everyone flying the same type of aircraft, all the pilots are now competing on the same platform being judged on only flying ability. The main focus is to try to hinder any aircraft advantage by using the same style aircraft and flying the same style maneuvers.

The purpose of this rule book is to educate you on how the maneuvers are supposed to be performed and how those maneuvers will be judged. It is very important to perform all maneuvers within the guidelines of this rule book. This is the same guideline the judges will be judging on. The maneuvers were picked to simulate how a full scale high wing aircraft (Cessna type) would perform. All the maneuvers are set up to eliminate any type of advantage an aircraft would have such as larger engine, elliptical wing, etc. Your main focus is to simulate your aircraft as close to how the full scale counterpart would fly.

BASIC RULE SETUP

- General
 - Anyone can compete as long as they meet the requirements of this section (Basic Rule Setup).
 - Entries and Entry Fees must be accepted before the final cutoff date.
 - More information concerning applications are at www.lmacky.org
 - A pilot can only enter once, however he/she can fly more than one trainer during the competition.
 - This allows him/her to compete if they were to crash, aircraft was unable to fly, etc.
 - All AMA approved radios and radio frequencies are approved.
- Aircraft
 - Aircraft must be a high wing “trainer-style” platform. Tail draggers and “scale” planes are allowed, but this will put the pilot at a disadvantage. No low wing or “sport” planes allowed.
 - Almost Ready To Fly (ARF), Kits, Scratch Built are all approved.
 - Gas, Nitro, and Electric are approved
 - Size Requirement – 20 inch wingspan minimum. No maximum wingspan.
 - Aircraft does NOT need to be in a scale scheme.
 - Aircraft must meet ALL the safety requirements by the AMA, LFUCG, and LMAC safety codes.
- Pilot
 - Must be able to read, speak, and understand the English language.
 - Must hold a current AMA card (or proof of AMA coverage)
 - Must have a “spotter” with him/her during flight rounds
- General Flying
 - Judging will be on a total of 3 rounds, scoring only the 2 highest rounds.
 - Each pilot is allowed one “Scratch” round during the WHOLE competition. He/She will be moved to the bottom of the list during that round.
 - Each round is given 10 minutes to perform all maneuvers.
 - Any maneuver not accomplished within 10 min will be given a score of “0”.
 - Aircraft should be staged and ready within two pilots in front of you.
 - All maneuvers will be performed within the current traffic pattern unless otherwise stated.
 - All landings and takeoffs must be approved by the “Pitt Boss”.
- Judging
 - There are 10 maneuvers that will be judged during a flight round.
 - Judging will be given from 1 being the lowest to 10 being the highest.
 - A “0” will be given if the maneuver is not performed.

- Points can be broken into quarters (ex. 9.25, 9.5, 9.75, 10)
 - Judging only occurs during the time between “Maneuver Begin” and “Maneuver End”
 - Pilots MUST state both clearly or the judges will have to judge based on their preference.
 - Each flight round will be judged by two judges.
 - Pilots CANNOT discuss scores with judges until after the flight round is completed by all pilots.
 - Score sheets will be kept out of view until the total flight round by each pilot is complete.
 - Each pilot will be judged at least once by each judge.
 - Each judge may have a different opinion on point spread. This makes it fair for each pilot.
 - Points are awarded and/or subtracted based on judge’s perspective of the maneuver and any deviation from the maneuvers procedures in this rule book.
- Maneuvers
 - All maneuvers are required to be flown in order to be judged.
 - No deviation can be made from the maneuver order.
 - The maneuver order is:
 - Take-Off
 - High Speed Fly-By
 - Low Speed Fly-By
 - Figure 8
 - Descending 360
 - Missed Approach
 - Power Off Stall
 - Touch and Go
 - Realism in Flight
 - Landing
 - Pilots may take time between each maneuver. The order cannot be deviated, but a pilot can fly in the pattern in order to get into position, give himself/herself time, etc.
- Rounds
 - Each pilot (unless otherwise noted) will complete a total of 3 flight rounds.
 - The first two rounds will usually be completed on the first day with the 3rd completed on the 2nd day.
 - CD obtains the right to alter this at his/her discretion.
 - If for any reason the flight rounds cannot be completed due to outside forces, only the flight rounds that all pilots completed will be scored. In this case, the lowest flight round will not be dropped.
- Awards
 - Awards will be given for first, second, and third place.
 - Special awards will be given with notice from the CD.

MANEUVERS EXPANDED

This section is designed to explain each maneuver as it will be judged. The first section of each maneuver will be an explanation on how the maneuver should be performed. The second section is based on how the judges will judge each maneuver. The last section is common errors that have been experienced during past competitions.

Practice each maneuver as it is stated in this section. Everyone has a different opinion on how maneuvers are to be completed. This book is designed to eliminate the "opinion" and get everyone on the same "page".

TAKEOFF

This maneuver consists of the aircraft taxiing into position preferably the centerline of the runway and stopping. After the aircraft is ready, the pilot will call out "Maneuver Begin" and will apply power gradually until full power is achieved. Aircraft will maintain the centerline of the runway until liftoff is achieved. Liftoff should consist of the airplane pitching up with the nose wheel leaving the runway first followed by the main gear. A constant rate of climb (between 20 and 30 degrees) is achieved until approximately 60 feet when the pilot will call "Maneuver Complete".

What the Judges are looking for:

- Aircraft taxis out in a scale like manner
- Maneuvers into position on the runway centerline
- Stops aircraft, calls "Maneuver Begin"
- Applies throttle smoothly
- Maintains centerline of the runway
- Smooth rotation
- Constant climb out
- Maintains directional control (no heading change)
- Calls "Maneuver Complete" after approximately 60 feet

Common errors:

- Erratic taxi
- Forget to call "Maneuver Begin" and/or "Maneuver Complete"
- Erratic throttle control
- Doesn't maintain centerline
- Rotates too soon or too late (aircraft balloons)
- Changes in climb-out angle and/or heading
- Calls "Maneuver Complete" too soon (under 60 feet)

HIGH SPEED FLY BY

This maneuver is performed as a straight and level flyby at full power from one end of the flightline to the other end of the flightline. This maneuver should be performed at an altitude between 10 and 30 feet and at a distance no closer than 30 feet but no further than 100 feet from the judges at show center. The pilot will start from the far end of the flightline and establish heading, and altitude. Once this occurs, pilot will then state "Maneuver begin". Once the maneuver has begun, a high speed fly by should have no heading change nor any altitude change. Once the plane has passed the judges, pilot will state, "Maneuver complete".

****Note:** Using the centerline of the runway, or runway edge is a good way to help maintain heading.

What the Judges are looking for:

- Clear established heading and altitude so the plane flies exactly perpendicular to the judges at show center.
- No change in heading or altitude during the maneuver
- Max power, no power changes.
- Calls, "Maneuver begin" and "Maneuver end" at appropriate time.
- Immediate correction for wind/thermal changes.

Common Errors:

- Heading or altitude never established.
- Heading and or altitude changes with no correction.
- Pilot fails to correctly call his/her maneuvers
- Power Changes.
- Altitude too high or too low, or aircraft too close or too far from judges.

LOW SPEED FLY BY

This maneuver is performed as a straight and level flyby at slow airspeed from one end of the flightline to the other end of the flightline. This maneuver should be performed at an altitude between 10 and 30 feet and at a distance no closer than 30 feet but no further than 100 feet from the judges at show center. The pilot will start from the far end of the flightline and establish heading, and altitude. Once this occurs, pilot will then state "Maneuver begin". Once the maneuver has begun, a high speed fly by should have no heading change nor any altitude change. Once the plane has passed the judges, pilot will state, "Maneuver complete".

*****Note:**

Pilot must demonstrate controllability at low airspeed or "slow flight" and must use power changes to correct altitude and speed if need be. Once "slow flight" speed is established, pilot must demonstrate he/she can maintain that speed, heading, and altitude.

What the Judges are looking for:

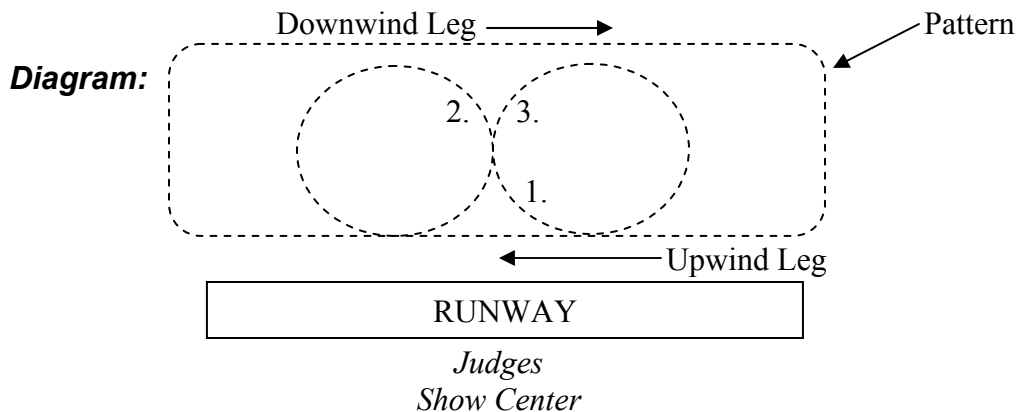
- Clear established heading and altitude so the plane flies exactly perpendicular to the judges at show center.
- No change in heading or altitude during the maneuver
- Slow airspeed, pitch up angle of attack.
- Calls, "Maneuver begin" and "Maneuver end" at appropriate time.
- Immediate correction for wind/thermal changes.

Common Errors:

- Heading or altitude never established.
- Heading and or altitude changes with no correction.
- Pilot fails to correctly call his/her maneuvers
- Pilot gets the plane too slow or not slow enough.
- Pilot does not keep constant speed throughout the maneuver.
- Altitude too high or too low, or aircraft too close or too far from judges.

FIGURE 8

During this maneuver, the aircraft makes a horizontal “8” over the field. Pilot must demonstrate ability to maintain speed, altitude, and consistency in the turns. This maneuver should start between 50 and 150 feet and should be entered at cruising speed. The aircraft should enter this maneuver as he/she is flying the regular pattern. Before the first turn, the pilot will call, “Maneuver Begin” once altitude and airspeed is established. (1) The first turn should be on the “upwind leg” and the aircraft should turn so it is pointing away from the judges at centerline. (2) The second turn should be gradual and the pilot will perform a perfect circle not changing altitude, airspeed, or radius of circle. Once the aircraft has completed the first circle, (3) the pilot will begin the second part by turning the opposite direction and repeating the circle the second time. Once the pilot is aligned with the runway the same direction (upwind leg), he/she entered the maneuver, pilot will call, “Maneuver Complete”.



What the Judges are looking for:

- Establish and hold altitude and airspeed during maneuver.
- No change in radius of each circle.
- Pilot enters both circles of the “8” at the same place (show center)
- Enters and exits on the upwind leg.
- Pilot calls, “Maneuver Begin” and “Maneuver Complete” at appropriate times.

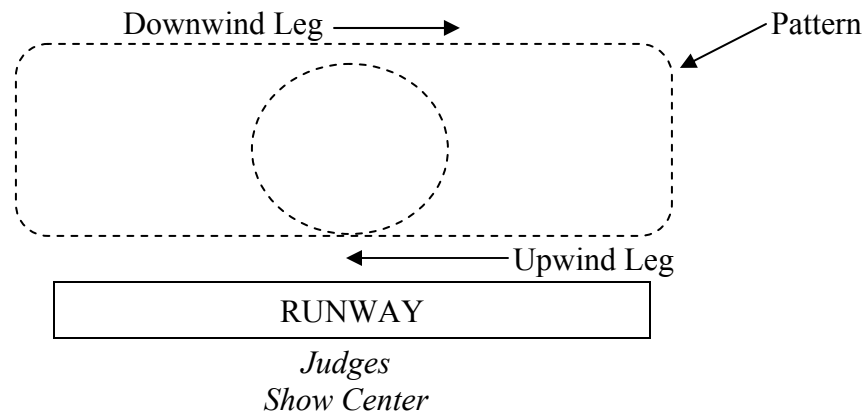
Common Errors:

- Pilot forgets to call, “Maneuver Begin” and “Maneuver Complete” at appropriate times.
- Altitude, airspeed, and radius changes.
- Maneuver airspeed too fast.

DESCENDING 360

During this maneuver, the aircraft makes a shallow 360 degree turn while maintaining a descent. The pilot may establish his/her preferred altitude to enter. Once altitude is established, the pilot will call, "Maneuver Begin". He/she will then reduce power and establish his/her turn and descent rate. Both the radius of turn and descent rate will be maintained and unaltered until the aircraft is in the same direction and point it began the maneuver. The aircraft should be at the exact same location, just at a lower altitude. Pilot will then increase throttle and exit straight out calling, "Maneuver Complete".

Diagram:



What the Judges are looking for:

- Pilot enters and exits at show center.
- Radius, airspeed and descent maintain constant until maneuver complete.
- Pilot calls, "Maneuver Begin" and "Maneuver Complete" at appropriate times.

Common Errors:

- Maneuver not performed at show center.
- Pilot exits at a different point then when he/she entered.
- Radius, airspeed, and/or descent changes during maneuver.
- Pilot forgets to call, "Maneuver Begin" and "Maneuver Complete" at appropriate times.

MISSED APPROACH

In this maneuver, the aircraft is set up for landing and must abort for any reason. The pilot must demonstrate controllability through out the approach and climb out. The pilot will set up for a landing with the centerline of the runway and call, "Maneuver Begin". Just before landing (approx. within 5 feet), he/she will declare "Missed Approach" and gradually increase power to full and establish a normal climb angle and climb out while maintaining runway centerline. Once pilot has established a safe altitude, he/she will call, "Maneuver Complete".

What the Judges are looking for:

- Pilot establishes correct glide path to landing.
- Pilot calls missed approach within 5 feet of touchdown.
- Smooth power transition and climb angle.
- Maintain centerline of the runway.
- Pilot calls, "Maneuver Begin" and "Maneuver Complete" at appropriate times.

Common Errors:

- Pilot approaches too fast.
- Aircraft missed approach too hi, or aircraft actually touches down.
- Erratic power changes and climb angle
- Pilot forgets to call, "Maneuver Begin" and "Maneuver Complete" at appropriate times

POWER OFF STALL

This maneuver is designed to test the pilot's skills leading up to a full power off stall and recovery. This maneuver will be performed at show center within the established pattern at an altitude that gives the ability for a safe recovery, however not so high the judges have trouble seeing the maneuver. The aircraft should enter this maneuver on the upwind leg with the Pilot stating, "Maneuver Begin". Before show center, the pilot will reduce the power to idle and maintain altitude and heading. Once the stall occurs, the pilot will regain control by leveling the wings, increasing power and re-establish original altitude and heading. Once complete, pilot will state, "Maneuver Complete".

*****Note:**

We understand that in some airframes, one wing will drop and the heading could change during the stall. Points will not be subtracted for an initial heading change, however the pilot, once the aircraft is on positive control, should immediately regain the original heading.

What the Judges are looking for:

- Safe initial altitude.
- Full power off stall, (power reduced to idle, noticeable drop in angle of attack).
- Immediate control of the aircraft and restore altitude and heading.
- Pilot calls, "Maneuver Begin" and "Maneuver Complete" at appropriate times.

Common Errors:

- Altitude too high or too low.
- Full stall is not performed.
- Does not regain control safely
- Deviation from original altitude and heading once stall is recovered.
- Pilot forgets to call, "Maneuver Begin" and "Maneuver Complete" at appropriate times

TOUCH AND GO

In this maneuver, the aircraft will perform a full landing followed by an immediate takeoff. The pilot will set up for a landing with the centerline of the runway and call, "Maneuver Begin". This should begin just after the turn from the base leg to final approach. A smooth and gradual descent should be performed. This maneuver should be a smooth landing on the centerline of the runway with power cut off at touch down. The aircraft will then roll for approximately 10 feet (on the centerline of the runway) and power will then gradually be applied. Liftoff should consist of the airplane pitching up with the nose wheel leaving the runway first followed by the main gear. A constant rate of climb (between 20 and 30 degrees) is achieved until approximately 60 feet when the pilot will call "Maneuver Complete".

What the Judges are looking for:

- Pilot Calls "Maneuver Begin" and "Maneuver Complete" at appropriate times.
- Aircraft maintains constant descent angle to touchdown.
- Good flair with main wheels touching down, no bouncing.
- Aircraft maintains centerline of the runway.
- Applies throttle smoothly
- Smooth rotation
- Constant climb out
- Maintains directional control (no heading change)
- Calls "Maneuver Complete" after approximately 60 feet

Common Errors:

- Pilot forgets to call "Maneuver Begin" and "Maneuver Complete" at appropriate times.
- Aircraft deviates from descent
- Aircraft makes a rough touchdown and/or bounces
- Aircraft deviates from centerline after touchdown
- Erratic throttle control
- Doesn't maintain centerline
- Rotates too soon or too late (aircraft balloons)
- Changes in climb-out angle and/or heading

LANDING

This maneuver should be a smooth landing on the centerline of the runway with power cut off at touch down. Pilot will align the aircraft in a landing configuration and call "Maneuver Begin" at around 30 feet altitude. A gradual approach to touchdown should be made with the main wheels touching down first followed by the nose wheel. The aircraft should touch down at the centerline and rollout on the centerline with no deviation. Once the aircraft has slowed down to "taxi" speed, the pilot calls, "Maneuver Complete".

What the Judges are looking for:

- Pilot Calls "Maneuver Begin" and "Maneuver Complete" at appropriate times.
- Aircraft maintains constant descent angle to touchdown.
- Good flair with main wheels touching down, no bouncing.
- Aircraft maintains centerline of the runway.

Common Errors:

- Pilot forgets to call "Maneuver Begin" and "Maneuver Complete" at appropriate times.
- Aircraft deviates from descent
- Aircraft makes a rough touchdown and/or bounces
- Aircraft deviates from centerline after touchdown

REALISM IN FLIGHT

This is not actually a maneuver per say, but an overall appearance the aircraft makes during the entire flight. The pilot must maintain a scale flight from taxi out for takeoff to taxi in from landing. The judges will watch all turns, speeds, etc. even during times that actual maneuvers are not being judged. This is very important that you keep your plane flying scale. Many placements have been made based on the scores in this section!