

# Phase 4 Takeoff

Marymoor R/C Club, Redmond, WA  
AMA Charter 1610



# Phase 4 - Takeoff

- Straight line on takeoff roll
- Controlled rotation and liftoff
- Straight ahead climb
- Takeoff in crosswind

# Notes for Instructors

- Experience shows we used to have the most training accidents and damaged airplanes doing takeoffs
- Takeoff is best taught *after* the student has practiced go-arounds in Phase 3.
- If the student over-rotates, or rotates while steering with a rudder input, the plane might not have enough power and the instructor may not have enough time to save the plane.
- Teaching go-arounds first ensures that the student knows how to smoothly pitch up, and fly a straight-ahead climb in wind
- Teach the student to fly intentionally – to force the plane straight along runway heading. Teach not letting the plane turn left doing what it wants to do, but instead what the pilot wants to do.

# Straight Takeoff Roll

- Get lined up. Use the middle of the runway
- Hold about 1/3 UP elevator
- Smoothly advance power to  $\frac{1}{2}$  or more
- Steer straight with the rudder – think ahead, and be smooth. The plane will turn left due to propeller effects, or it may try to turn into the wind.
- If the airplane steers badly, ABORT the takeoff (throttle immediately to idle).
  
- Never hastily pull the airplane into the air.
- Never pull into the air with a large rudder input present. The immediate snap roll will ruin your day!

# Takeoff Rotation

- The airplane will rise when it's ready, with enough speed, if you are holding some UP elevator. If it doesn't add a little more.
- When the plane lifts off, smoothly relax the UP elevator and set a shallow climb to build speed
- The airplane will want to turn left. Don't let it!
  - With a crosswind, this can become a downwind turn and stall close to the ground. Force it to fly straight, just like full scale pilots do.
- Climb out straight and steady. Build speed. When settled, start your turn to the crosswind leg

# Taking off in Wind

- Take off into the wind! If others are not, make your callouts clear and loud.
- Steer with rudder, but be ready for the plane to weathercock into the wind during the takeoff roll
- For crosswinds, hold some aileron into the wind during your takeoff roll.
- Be ready for the wind to “pick up” your upwind wing, and correct for it.
- After liftoff, ease out the aileron, but gently make a small turn into the wind until you achieve a crab angle so that the airplane flies the runway centerline.
- ***NEVER lift off with a large rudder deflection. This will likely cause an immediate snap roll.***
- ***If it doesn't look good and straight on the ground, abort the takeoff roll.***

# Disclaimers

MAR/C provides advice. After you gain solo flight privileges, *only you* are responsible for your model aircraft readiness, your actions, and abilities

Any instructions provided by the manufacturers of equipment such as but not limited to aircraft, radio controls, batteries, motors or engines and anything installed in your airplane have precedence over any advice provided by instructors, this document, or the mar-c website..

Flying and teaching techniques vary widely in our hobby, and vary from one instructor to another.

The goal of this document is to encourage some standardization and provide a practical minimum amount of knowledge.

# Version Information

| Version | Author      | Date       | Description  |
|---------|-------------|------------|--|
| 1.5     | Brian Kelly | April 2017 | Aligned Flight Training Syllabus with new flight log. Misc corrections and refinements         |
| 1.6     | Brian Kelly | 4/19/2017  | Misc edits, repaired links, to prepare for website update                                      |
| 1.7     | Brian Kelly | 4/26/2017  | Corrections and misc edits   |
| 1.8     | Brian Kelly | 9/28/2017  | Updated Proficiency Check and misc edits   |
| 2.0     | Brian Kelly | Nov 2018   | Broken into separate standalone chapters for quicker access on the website.                    |
| 3.0     | Brian Kelly | April 2023 | Updated to reflect club-owned fleet of electric training planes and miscellaneous improvements |