

# Phase 2

# Orientation and the Traffic Pattern

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



# Phase 2

## Orientation and the Traffic Pattern

- Trim for level flight
- L-R Wing Rock Flying Towards Pilot
- Level Turns, High Oval Pattern
- Climbing Turns (by adding power)
- Descending Turns (by reducing power)
- Rectangular Pattern
- Figure 8's (introduction)

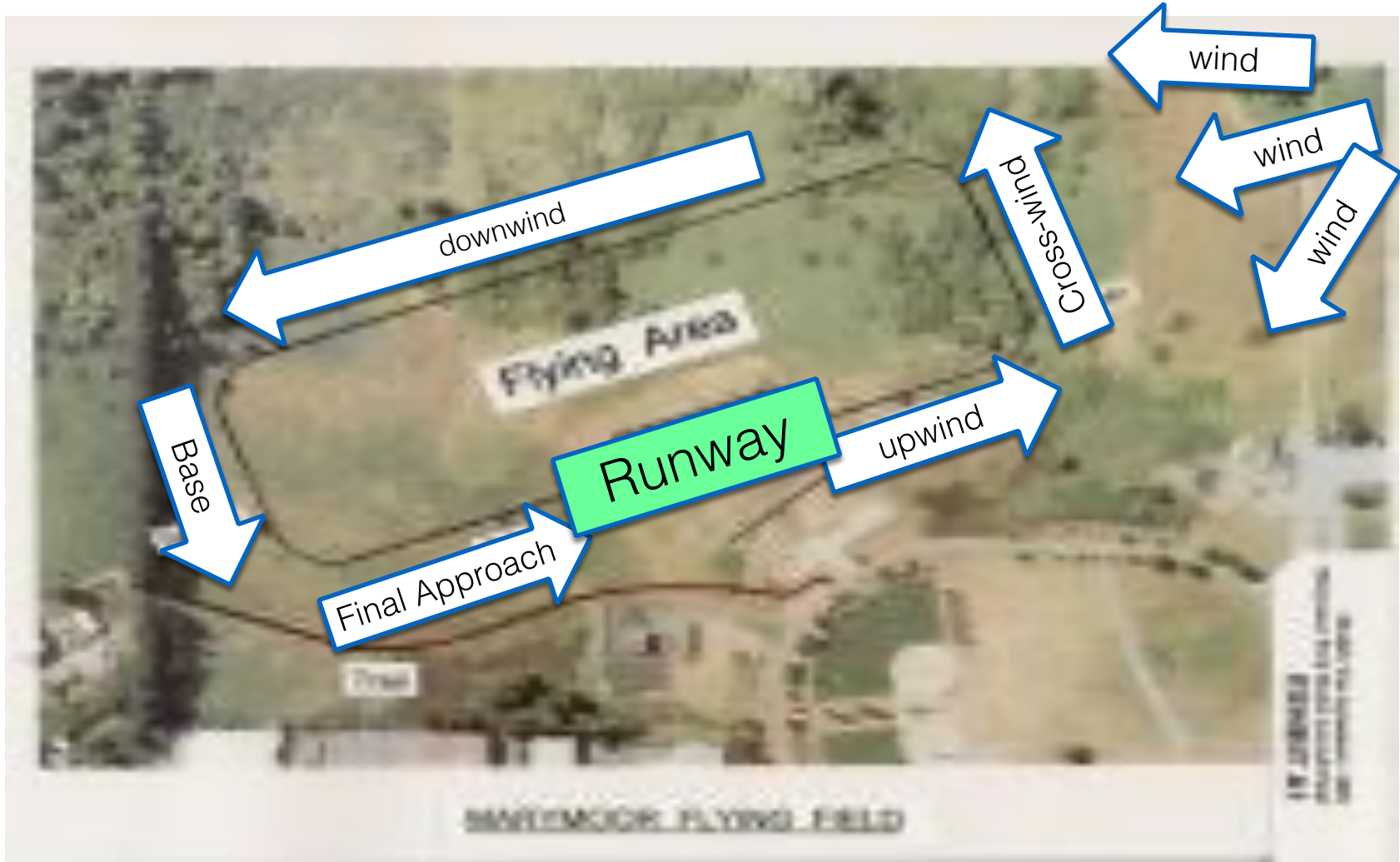
# Trimming

- On your first flight, you and your instructor will *trim* your plane in level flight by adjusting the trim controls until the airplane flies straight hands off
- This makes the airplane MUCH easier to fly.
- Airplane should be trimmed at about 1/3 to 1/2 throttle for a relaxed pace, longer flight, and consistent handling during approach and landing.

# Orientation

- Left and Right will seem reversed when the airplane is coming toward you
- What can you do to learn to deal with this?
  - Turn your back to the plane and look over your shoulder
  - Wiggle the wings Left and Right with aileron when the plane is flying toward you on the upwind leg
  - Talk while you fly, i.e. “I’m now turning LEFT, I’m now rolling RIGHT to stop the turn”, etc.
  - Always fly with intention:
    - Know what you are doing now
    - Know where you want the plane to be 10 seconds from now
    - Don’t fly around randomly recovering from the last mistake
  - Keep the airplane well out in front of you; never directly over your head and never behind you
  - Plan ahead so you don’t fly through the sun

# The Traffic Pattern



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# Level Turns

- On your first flights, you will work on flying the pattern, with four 90° turns, or two 180° turns
- An airplane does NOT turn like a boat or car. Holding the ailerons too long will result in the plane rolling over onto it's back
- To initiate a turn, “poke” in some aileron for less than a second (think “one potato”) to establish a 30-45 degree bank angle, then return the ailerons to neutral.
- As soon as the bank angle is established and ailerons are at neutral:
  - Ease back on the stick (up elevator) to compensate for altitude loss that will result from the bank angle.
  - A good trainer will hold the bank angle, and pulling on the stick will feel like the airplane “carves” a nice, level flight turn.
- When the airplane has turned enough, you must stop the turn by applying opposite aileron (with a “one potato” poke) to level the wings. Remember to stop the elevator input too.

# Climbing and Descending Turns

- Climb by adding some power. The airplane will climb in a controlled way
- Descend by reducing power. The airplane will descend without gaining a lot of speed.
- Try descending using NO power. Be a glider.
- Using only elevator to do climbs and descents will result in big changes to speed, which will in turn cause changes in the pitch *trim*

# Figure 8's

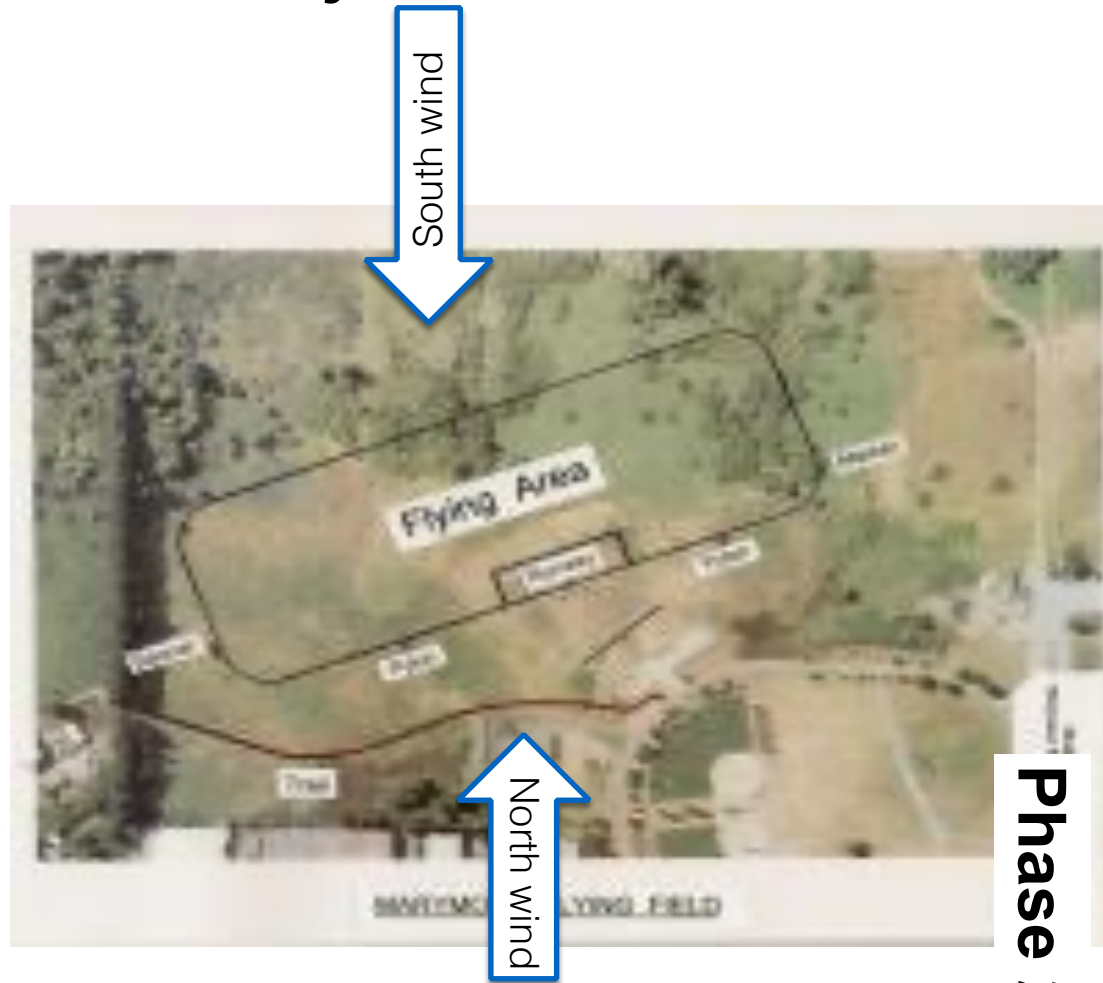
- Fly in a gentle circle in front of you, focusing on altitude control.
- When the airplane is pointed at you, reverse your roll angle to enter the other circle, and so on.
- This maneuver improves your skills best if the cross-over is done with the airplane pointed at you





# Wind at Marymoor

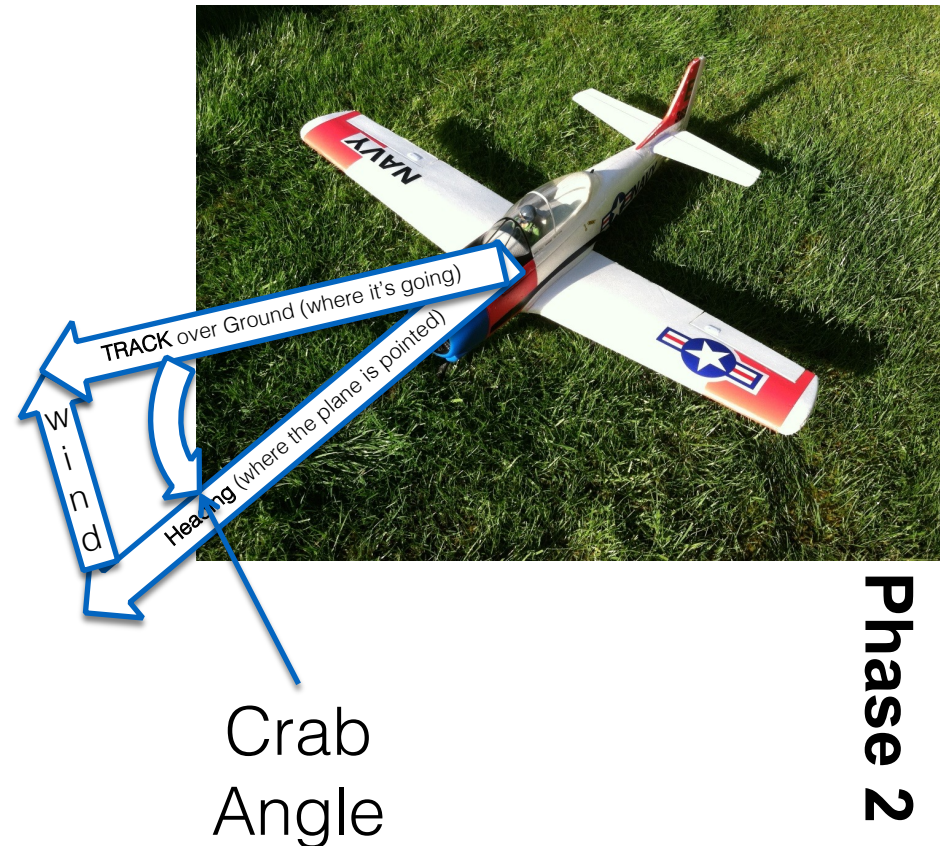
- Usually on nice days the wind is from the right (West)
- But we can have crosswinds, coming from behind us (north winds) in fair weather. If the weather is poor or changing to poor, we often have south winds, resulting in crosswind coming toward us.
- Check out our weather station! (link on the website)



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# Crab Angle

- In wind, where the airplane is *pointed* is not where the airplane is *going*.
- The pilot does not need to hold rudder to maintain a crab angle.
- Simply make a turn to adjust the *heading* that results in the desired *track* over the ground.
- The airplane does not “feel” the wind. It is simply flying in a body of air that is moving with respect to the ground.



# Flying the Pattern in Wind

- Judge the start of your turns. The legs of the pattern last longer or shorter depending on wind direction.
- Judge the end of your turns. Turn a little farther, or a little less far to anticipate the crab angle for the leg you are flying into
- While flying the longer upwind or downwind legs, watch to see if the airplane is drifting off course. If so, make a gentle turn to increase or decrease your crab angle.
- Crosswind and base legs might become very short when the wind is behind the airplane.

# 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