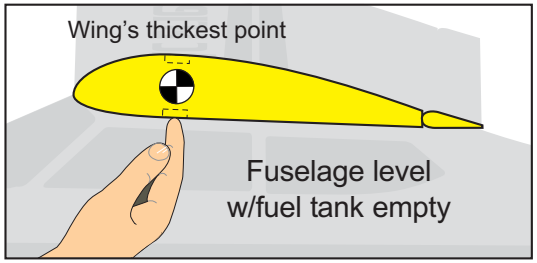
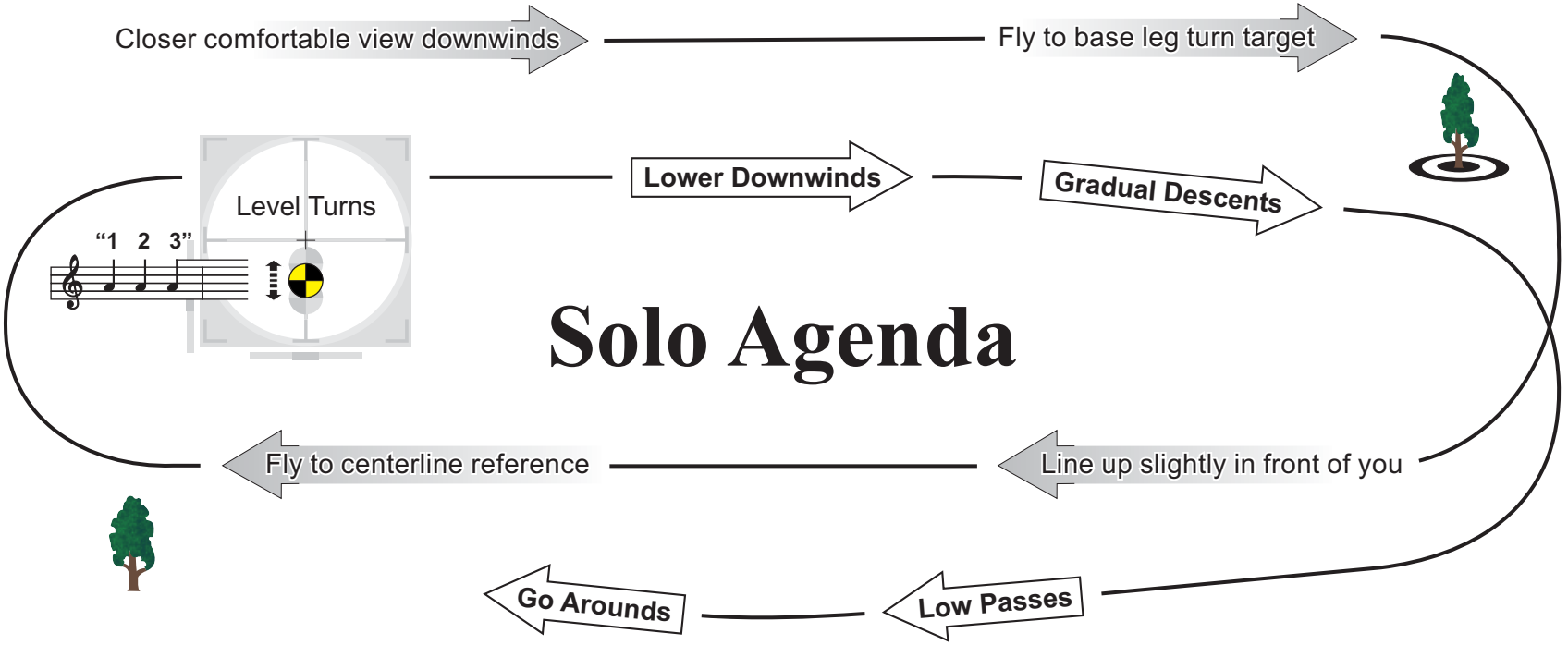


Solo

Preparations and Considerations



DAS
PRIMARY

Solo Preparations and Considerations

As with most things, confidence entering your first solo is strengthened by having a plan. Start with knowing that your model is properly balanced and the batteries have been checked and are strong (don't assume). The model has passed a thorough pre-flight inspection with the wing, tail, control surfaces and hookups, engine, and landing gear all proving secure. Finally, confirm good engine performance while putting the model to a taxi test to see that it tracks straight and nothing shakes loose. Having alleviated all equipment concerns, now you can devote all your attention to flying.

As you've been learning, a solo is made up entirely of turns and lines. So ask yourself, "Can I perform turns and bumps without holding in the aileron for one flight?" If you answer yes, all you have to do to realize solo success is essentially stay in the moment of each turn and line. Too frequently a soloing pilot will take off and feel he's flying too fast, too slow, too high, or too low, and become so distracted by the throttle that the plane departs the pattern and orientation and control is lost! Similarly, planning to "get it up, fly for awhile, and then try a landing" is actually no plan at all (and does nothing to strengthen one's confidence). To perform at your best, you need to plan for the major phases of the solo beforehand, especially the takeoff that sets up everything else. Therefore, when you do fly, you will be less concerned with what to do, and be able to devote more attention doing everything really well.

Once established in the pattern, the most dependable way to get the plane back on the ground is to spend the flight gradually lowering the pattern and practicing low passes, until one looks good, idle and land. 1st U.S. R/C Flight School instructs its solo students to plan to spend the whole flight practicing low passes. By delaying thoughts about the landing, P.O.W.T. and stress are minimized, and thus they turn and position so well that it usually doesn't take too many passes before one looks good and they decide to land.

Finally, with a mind to have everything going your way, choose to solo on a day with a light breeze blowing right down the runway. Lighter winds will mean needing fewer corrections, so things will seem like they're happening slower, and the slight headwind will slow down your landing approach and reduce the likelihood of overshoots.

KPTR: Greater confidence entering your first solo is strengthened by having a planned agenda beforehand.

Solo Agenda: Takeoff

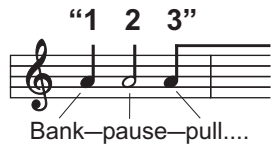
Everyone settles down after a turn or two. To ensure getting to that point, plan each step of the takeoff beforehand—especially maintaining the centerline climbing out and reducing power and leveling the wings before the first turn. Turn "1-2-3" and adjust the elevator to keep the turn level (regardless of the throttle position). And know where you're going to fly afterward. Note: Failure to reestablish the runway centerline during the climb out will void any chance to enter the familiar landing pattern right away and will significantly increase your workload!

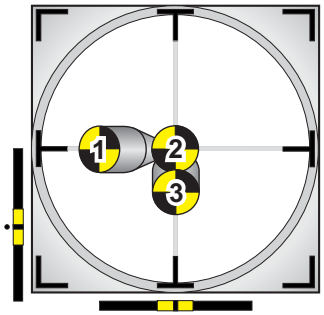
Success tips: 1. Survey your flying environment beforehand. With consideration for wind, pick an initial base leg turn target and anticipate how close the plane will have to be flown in reference to yourself when practicing runway lineups.

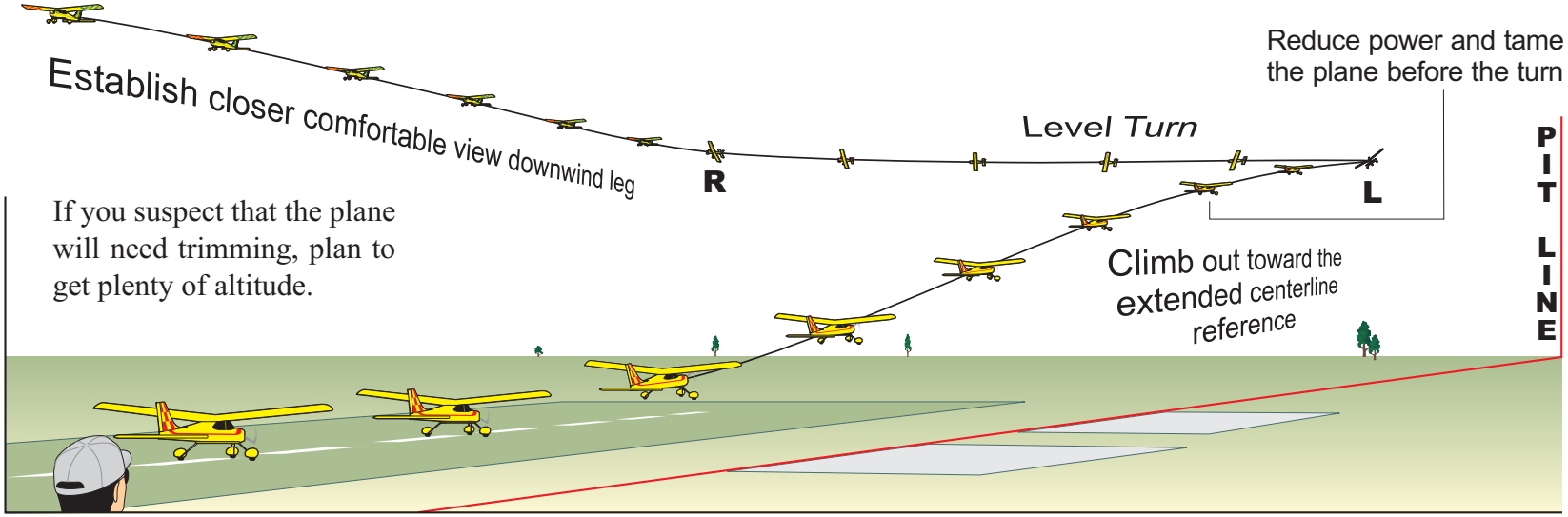
2. Glance at the throttle before the first turn to see that it is close to where you want it and to minimize the throttle as a distraction.

3. Consider initially safeguarding your turn(s) using the *neutral solution* (pausing at neutral after inputting the bank) to make sure that you're not holding in any aileron. You may also want to set an easier tone for the flight by starting the first turn with a smaller bank input.

Safeguarding the turn:
The Neutral Solution







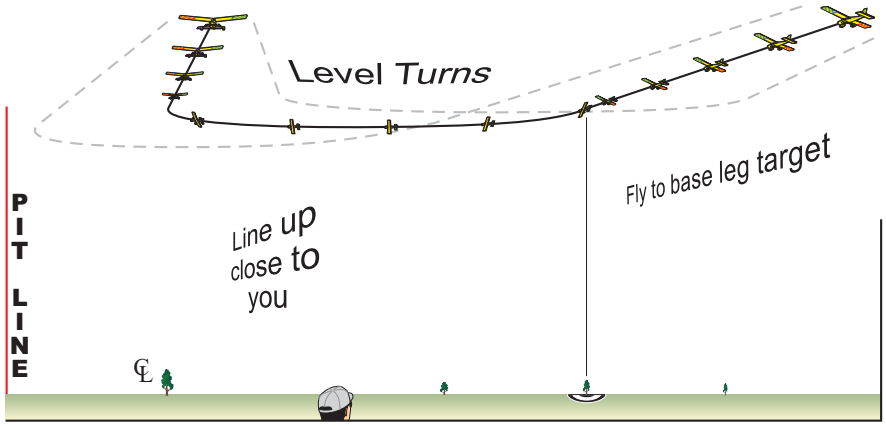
KPTR: You will feel more comfortable after a few turns. A focus on the right stick and the inputs you apply should get you to that point!

Solo Agenda: Pattern Warmup

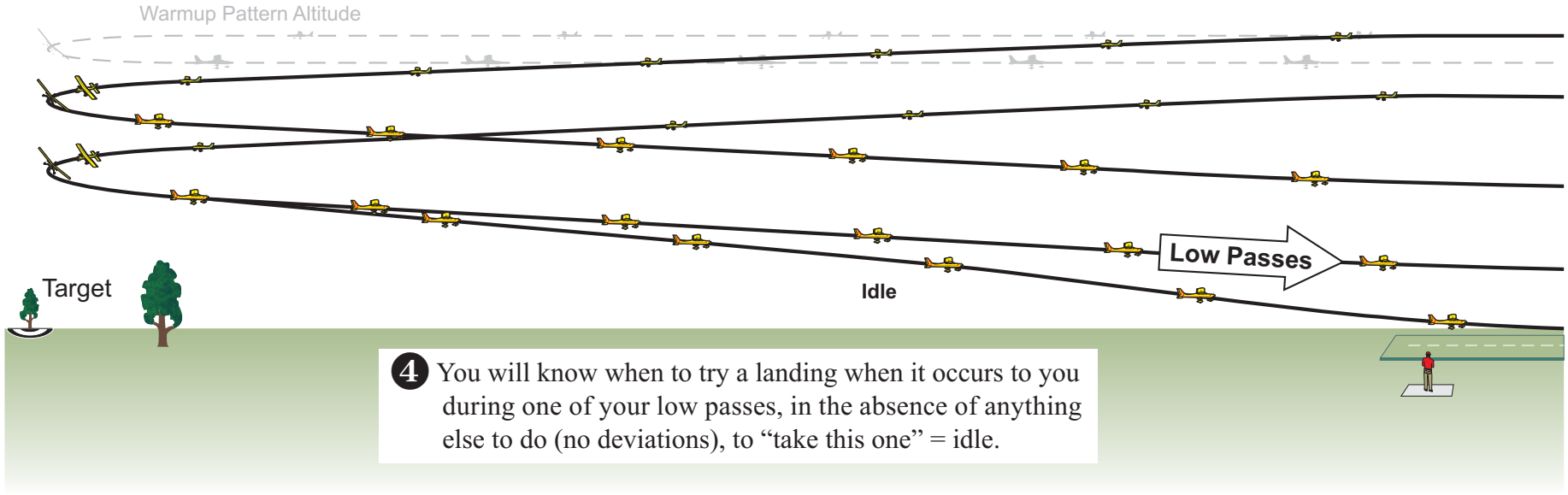
Left-hand Pattern

1 Establish the Pattern and Trim: Fly the plane up to a safe altitude in comfortable view. Determine to make great turns and bumps and establish a level landing pattern. When the opportunity presents itself, quickly make any obvious trim adjustments, and get back to flying the pattern. I.e., stay on the stick and fly the airplane first; trim, as well well as make throttle adjustments, second.

Make your foremost positioning objectives to fly a closer downwind leg, to establish your planned base leg turn target, and to line up in reference to yourself. Based on the results, fine tune your target to effect a better easier lineup. *Next page....*



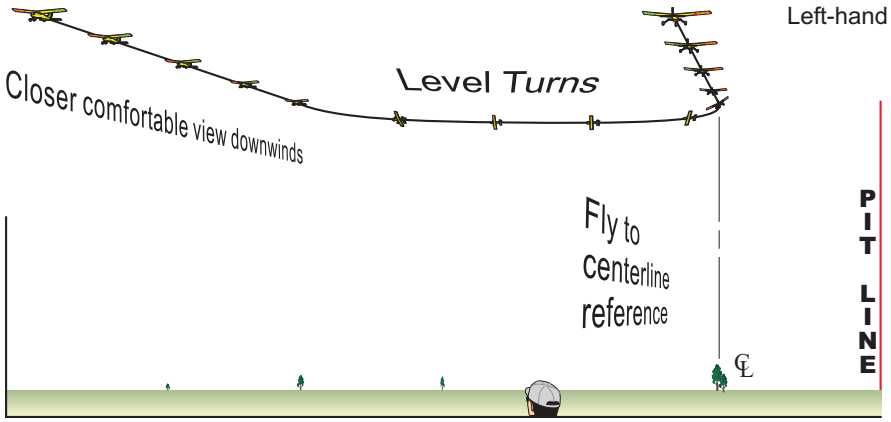
3 Low Passes: Reduce the throttle slightly on the downwind legs to effect gradual descents while continuing to practice good pattern positioning and level turns.



4 You will know when to try a landing when it occurs to you during one of your low passes, in the absence of anything else to do (no deviations), to "take this one" = idle.

KPTR: The more you focus on establishing the pattern, the earlier the opportunity will present itself to go beyond.

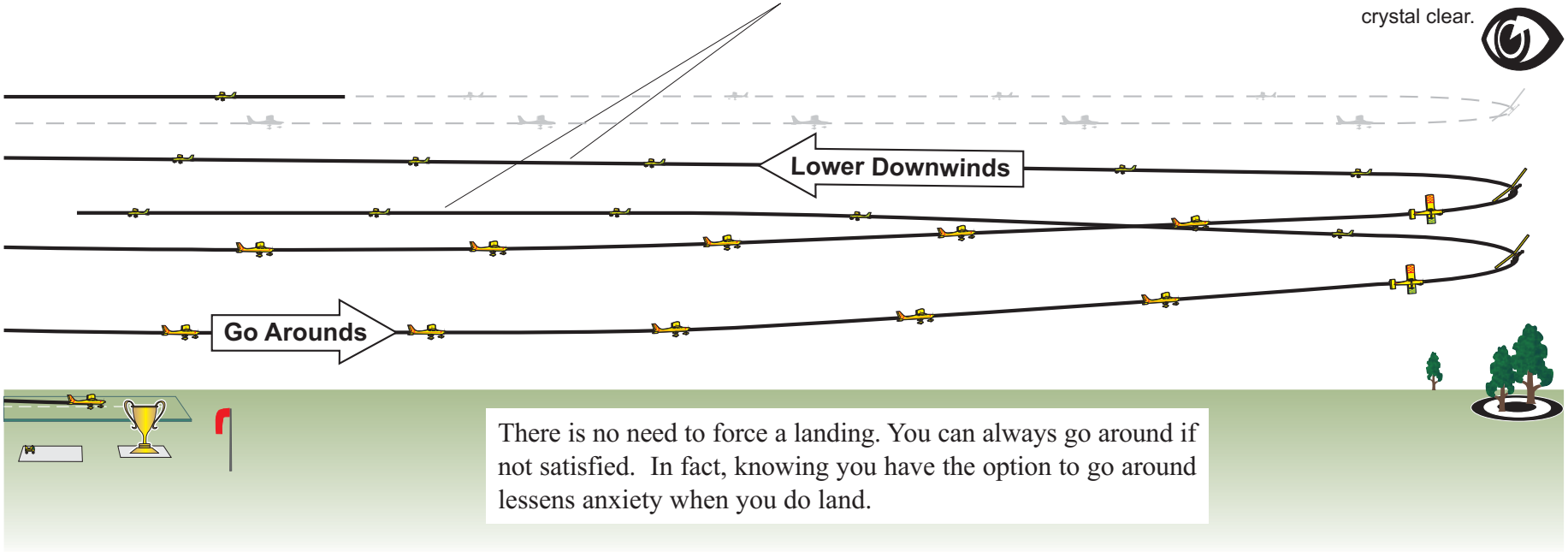
Solo Agenda: Gradually Lower the Landing Pattern



NOTE: If, as you get lower to the ground, the urge to start pulling elevator right away at the start of the turn causes you to overlook holding in some aileron, your recourse will be the trusty *neutral solution* pause at neutral between the bank and elevator inputs—and accepting the loss of a few feet at the start of the remaining turns to make sure that you don't enter a spiral turn prior to landing.

View this 2-page graphic from one end to make the warmup principle of crawl-walk-run crystal clear.

❷ Lower the Entire Pattern: Start establishing lower downwind legs to set the stage for low passes.

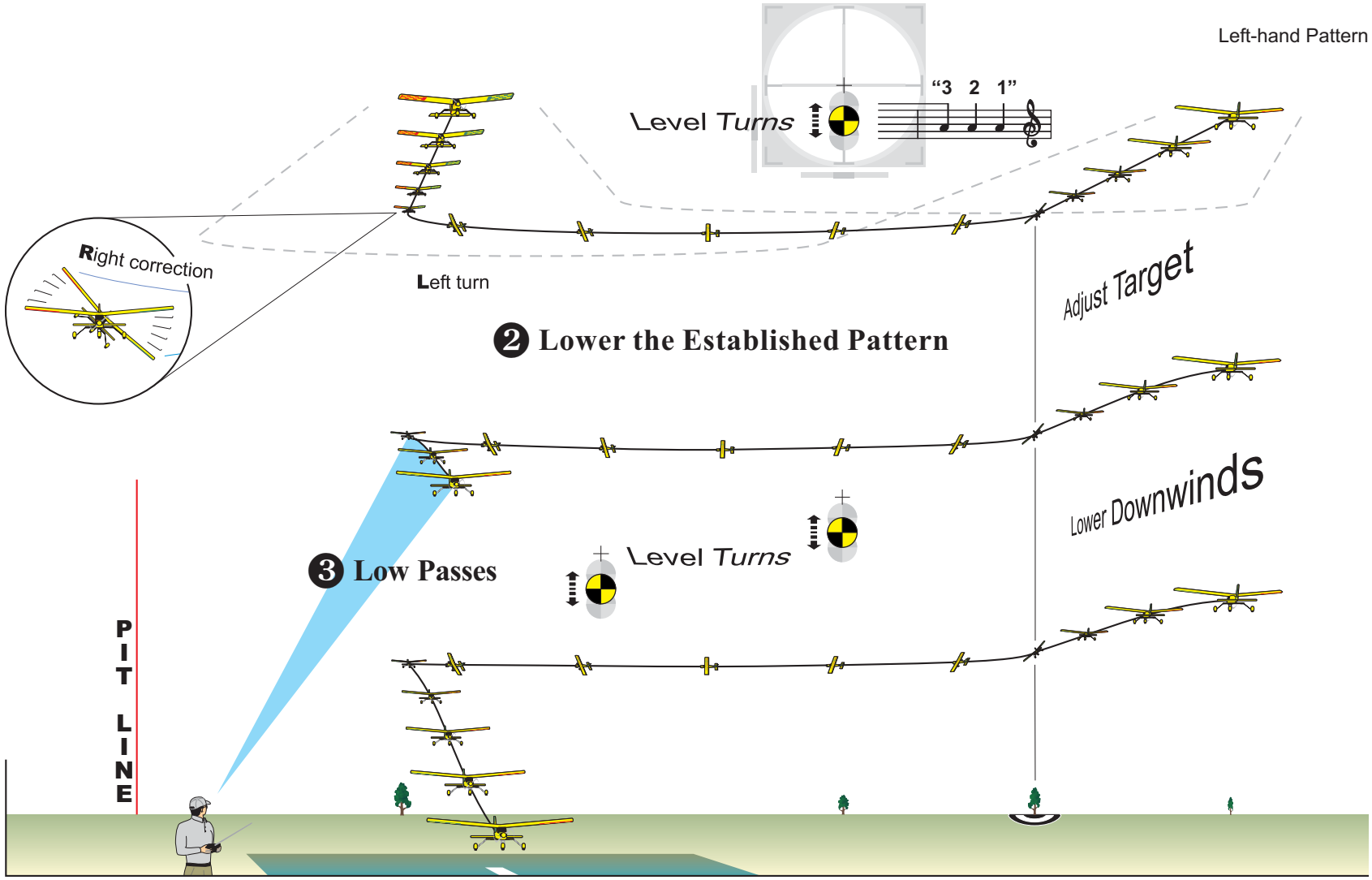


There is no need to force a landing. You can always go around if not satisfied. In fact, knowing you have the option to go around lessens anxiety when you do land.

KPTR: Gradually lowering the pattern, not intending to land, paces your flight so pressure is kept to a minimum leading up to landing.

Solo Agenda: ❶ Establish a Left-hand Landing Pattern

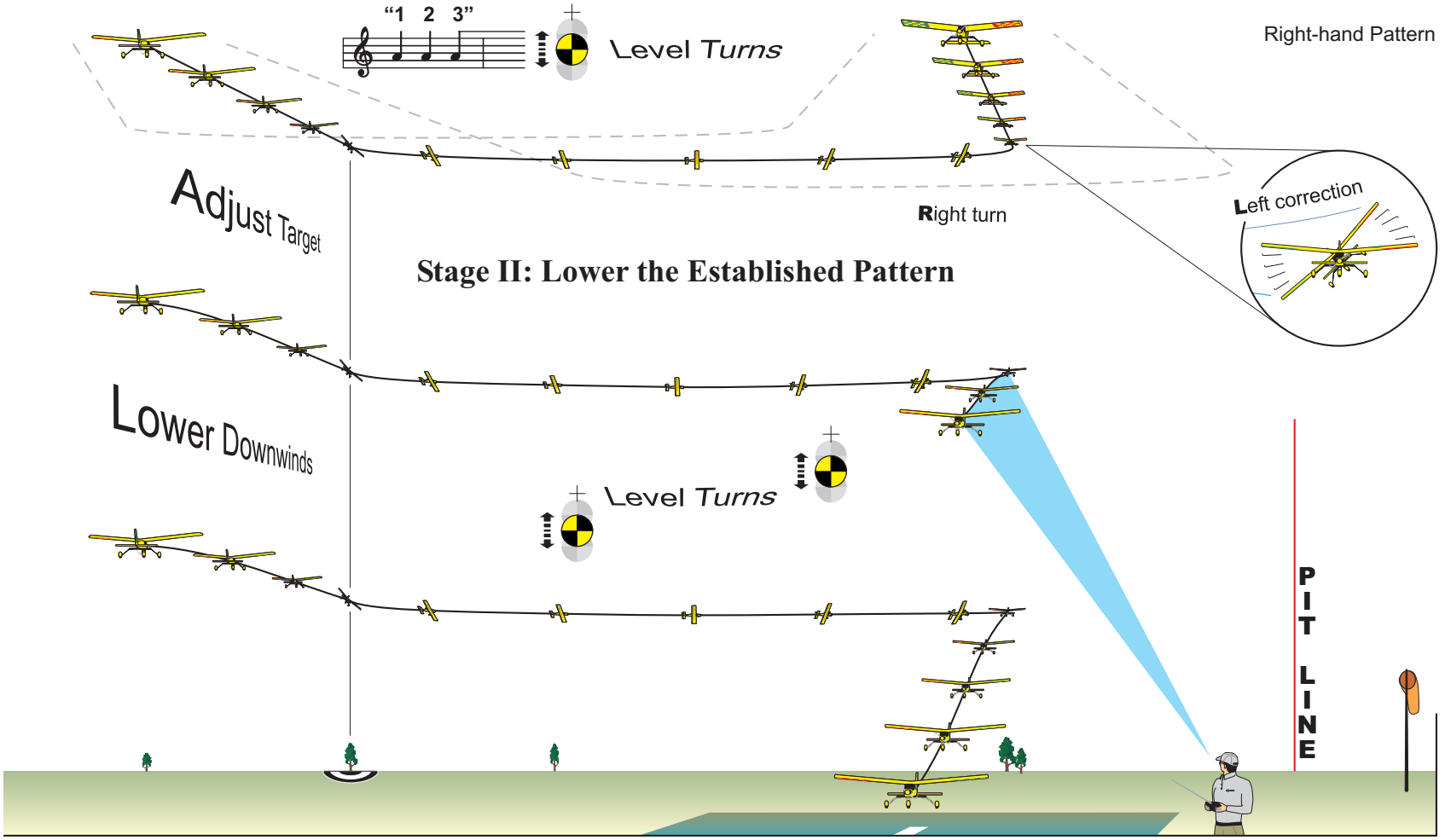
DAS System II: Proficient flyers who fly with greater ease reflect on the results of their first turns, bumps, and target, to obtain all their answers (adjustments) for the remainder.



KPTR: A level base leg turn influences how easy the landing will be. Small bumps, one at a time, and not held in, determine how successful your landing will be!

Stage I: Establish a Right-hand Landing Pattern

Proficient flyers don't endeavor to make better corrections, proficient flyers pro-actively position and apply inputs that minimize the need for corrections altogether! Half your battle will already be won by locating a good target and coming out of the base leg turn already lined up with the runway.



KPTR: A successful solo landing result is accomplished with most ease through a singular focus on landing setups!

Solo Checklist and DAS System Conclusion

DAS PRIMARY

- ☐ Pre-flight the airplane.
- ☐ Survey the flying environment and determine the extended centerline references.
- ☐ With consideration for wind, choose a base leg turn target, and
- ☐ anticipate how close the plane will have to be flown in reference to me to overfly the runway.

Takeoff. I plan to:

- ☐ Fly the airplane no matter what and never hold in the aileron.
- ☐ Smoothly neutralize the elevator and level the wings after lifting off.
- ☐ Maintain or reestablish the centerline climbing out.
- ☐ Reduce power and glance at the throttle before turning.
- ☐ Trust "1-2-3," and then adjust the elevator to keep the turn level.
- ☐ Consider safeguarding the first turn(s) and initially using a smaller bank input.
- ☐ Fully correct the turn and establish my downwind leg in comfortable view before attempting anything else.
- ☐ Trim only when there is the opportunity to do so.

Stage I: Establish the Landing Pattern. I plan to:

- ☐ Keep the downwind legs in closer to make the target easier to get to.
- ☐ Fly to the base leg turn target.
- ☐ Compliment my later landing by lining up in reference to myself and overflying the runway right away.
- ☐ Fly to the extended runway centerline reference.
- ☐ Start my turns "1-2-3," and adjust the elevator to keep each and every one of my turns level.
- ☐ Anticipate the direction to correct the turns before it's time to correct.
- ☐ Fully correct the turns.
- ☐ Adjust my base leg turn target to effect better lineups.

Stage II: Lower the Landing Pattern. I plan to:

- ☐ Initiate gradual descents when there are opportunities to do so.
- ☐ Practice low pass lineups and go arounds.
- ☐ Consider safeguarding and using a smaller bank input to start low level turns.
- ☐ Make smaller less frequent aileron bumps lower to the ground.
- ☐ Idle the engine only after establishing a great lineup.
- ☐ Go around if not satisfied with the approach.
- ☐ Avert the pressure to land after an overshoot by only planning to set up a lower low pass, not to land!

When I think of students of the 1st U.S. R/C Flight School DAS System, I think of a statement made by a past AMA President that went like this:

"80% of the average R/C flyers spend 70% of their average flight bringing the airplane back from somewhere they hadn't intended it to be!"

Your foundation of knowing what, how, and why you do what you do, establishes you as unique/elite in the R/C community.

Whether you are in this sport as a hobby, for fun, or for the satisfaction, you are a cut above. Enjoy!

Instructor