



Rich Stowell, MCFI-A

You read the success stories of six typical pilots in the first part of this miniseries. Duly inspired, you've been perfecting the turn, spin, loop, and slow roll detailed in the previous two installments. Now it's time to test yourself, to see where you are in your growth as an aerobatic pilot. It's time to fly before an International Aerobatic Club (IAC) judge!



Scoring a maneuver.

A little nervousness at this stage is not at all uncommon. Realize, however, that the tone of the Achievement Awards program is one of encouragement. Realize, too, that others are rooting for you—your aerobatic instructor wants you to succeed; the judge wants you to succeed; IAC wants you to succeed. Although the maneuvers are graded to competition standards, you are not in a competitive environment here. The minimum score to qualify for the Smooth Award is a five out of a possible 10 on each maneuver. The scores will tell you where you stand and where you can improve, yet the items of recognition you receive—certificate, pin, decal, patch—look and feel no different from anyone else's. You also have a fair amount of control over the process. For example, you can complete the requirements on one flight, or spread the maneuvers out over multiple flights if necessary.

Strategy

It's never too early to strategize in aerobatics. And strategy begins during preflight planning. You can choose the order in which you'll fly the maneuvers, for instance, so go ahead and rearrange the list from least difficult to most difficult. In this case, start with the 270-degree turn: It's relatively simple to execute, it's a great way to dissipate any jitters or excess adrenaline before tackling the other three maneuvers, and it's a quick way to get that first qualifying score on paper. These attributes will give you a nice boost of confidence heading into the remaining maneuvers.

The order you come up with might look something like this: turn, spin, roll, loop. Perform the maneuvers indi-

Award Flight Checklist

Before meeting with the judge:
 Prepare application paperwork
 Check weather and wind
 Preflight airplane and parachute(s)

Coordinate with the judge:
 Airspace
 Altitudes (and altimeter setting)
 Radio frequencies
 Order and direction of maneuvers
 Traffic/emergency breaks

Post-flight:
 Review judge's critique
 Complete application paperwork
 Photocopy application for your records
 Mail original application & check to IAC
 Celebrate responsibly

“Judge-Speak”

In addition to scoring your maneuvers, many judges will also provide a critique of what they saw. The language used, however, may take some getting used to.

Spinning:

Forced entry—The spin was initiated prior to the nose-down stall break; consequently, the nose of the airplane pitched up when rudder and elevator inputs were applied.

Positive down—The downline after the spin was short of the vertical.

Negative down—The downline after the spin was beyond the vertical.

Looping:

Pinched—Insufficient float across the apex of the loop.

Out high or e-shaped—The exit altitude was higher than the entry altitude, typically caused by rushing through the second half of the loop (i.e., too much pull too soon).

Segmented—Pitch changes made during the loop were too sudden; consequently, the smooth arc of the loop was interrupted with straight segments or hesitations.

Slow Rolling:

Barreled—The corrective elevator and rudder inputs applied during the roll were out of whack: either too strong, too weak, or mistimed. As a result, the airplane deviated noticeably from the horizontal line it was tracking. Barreling is easy to spot from the ground by watching the motion of the tail of the airplane during the roll.

Dished out—In the second half of the roll, the airplane (sometimes suddenly) lost altitude and came off heading. Pulling the elevator control aft is the culprit.

vidually, not as a sequence. Reposition yourself heading- and altitude-wise between each maneuver. This gives you a chance to receive feedback from the judge and/or your instructor, and to clear your head before continuing.

You can also choose the direction of the spin and the slow roll. You may also have control over the direction of flight, so position yourself to take full advantage of the wind and prominent ground references whenever you can. If you consistently perform better spins in one direction versus the other, or if the airplane itself enters cleaner spins one way compared to the other, position yourself to execute the spin accordingly. Similarly, pinching the top of the loop is a frequent error. When it's time, position yourself to enter the loop heading into the wind. The resulting tail wind across the top will help you round out the apex.

You might have to modify your plans once airborne; nevertheless, map out as many of the above elements as you can before climbing into the cockpit. Make notes on your sequence card if that helps. Once airborne, it's important to pace yourself. If you earn a qualifying score on a particular maneuver, but you or the judge think it can be performed better with a few minor adjustments, then go ahead and repeat it another time or two. But if you get

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hung up on a maneuver with no improvement after a couple of tries, shelve that maneuver for the time being and move on to something else. Your first objective is to earn a qualifying score on as many of the maneuvers on the list as possible. After that you can go back and fix any problem maneuvers or try for higher scores. Regardless, try to limit the judged sorties to 30 to 45 minutes each.

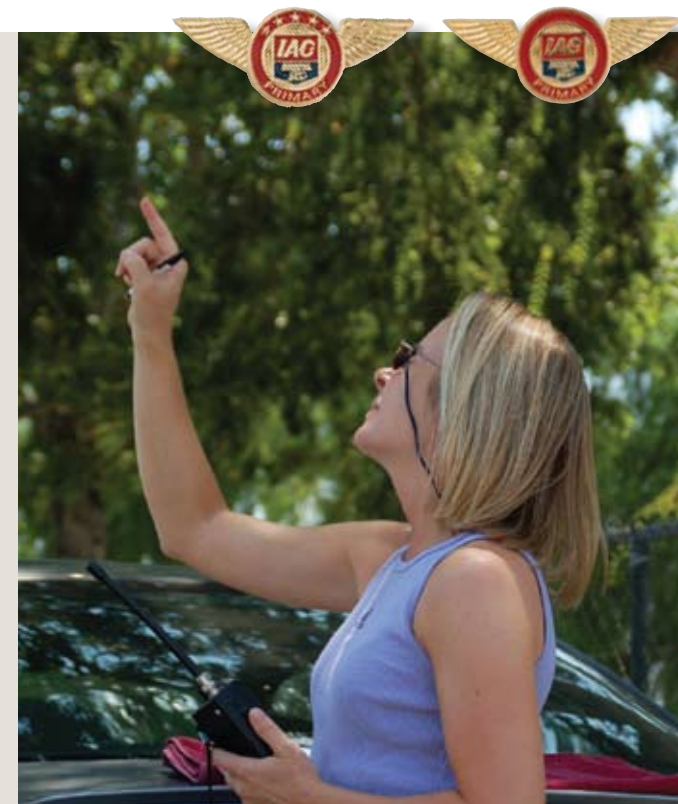
Maneuvers often overlap between the various levels of Achievement Awards, too. Another clever bit of strategy, therefore, is to look one category ahead. In the case of the Primary and Sportsman Smooth Awards, the spin, loop, and slow roll are required for both. So why not give the judge application forms for both the Primary *and* Sportsman Smooth Awards? Once you've qualified on the Primary side and if time permits, go ahead and repeat the spin, loop, and roll. You just might come away with a Primary Award as well as three of the eight Sportsman maneuvers checked off the list in as little as one judged flight. This is an efficient way to maximize your flight time, not to mention a way to give you some momentum for the next rung of the awards ladder.

Meeting the Judge

Sitting down with the judge before your flight is not so much a checkride as it is a chance to meet and to

The Difference Between Smooth and Stars Awards

Smooth Awards are about hitting a qualifying mark once for each required maneuver. From that point of view, Smooth Awards represent still shots of aerobatic competency—that flight, that maneuver, that judge. Stars Awards, on the other hand, recognize consistency over the course of a sanctioned aerobatic contest—sequences of maneuvers, multiple flights, multiple judges. Stars Awards introduce additional layers of complexity and challenge, such as energy management and aerobatic box awareness/management. For the pilot who has earned a Primary Smooth Award, the next step might include working on the maneuvers for a Sportsman Smooth Award and/or training for a Primary Stars Award for an upcoming contest near you.



Spotting a loop with a judge's critical eye.

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Picking an Instructor

Cary B., one of the six pilots introduced back in the first installment in our Primary Smooth Award series, offers some important insight into the training process: "Pick an instructor that you're compatible with. A good personality match is key. There's enough pressure on you when performing aerobatics as it is, and you don't need or want the added stress of someone you cannot communicate well with in the cockpit. Even if the guy's the hottest aero pilot in the state, you can't learn anything if there isn't a connection there. My recommendations: Learn at your own pace. Don't be in a big hurry or compare your progress to the progress of anyone else. Fly only when you're in a good state of mind and well-rested. But most important of all, *enjoy the moment!* After all, that's why you are doing aerobatics!"



coordinate various aspects of the flight. Take this opportunity to discuss any questions you might have with the judge. Have your application paperwork ready to hand over. It's also a good idea to provide a few sheets of blank paper in case the judge cares to write down any comments. If you have a handheld radio, offer it as a backup. Make sure everyone involved is clear on the radio frequencies to be used, where the judge will be located, the area in which you'll be flying, and the proposed order, direction, and starting altitudes of the maneuvers. Be sure to coordinate the altimeter setting prior to takeoff, too.

Even though you'll be focused on flying the maneuvers to the best of your ability, it is still your responsibility to see and avoid other air traffic. The judge will keep an eye out for traffic as well, as will the instructor/safety pilot who may be with you in the airplane. The ultimate responsibility, however, remains yours.

It's also up to you to earn the Achievement Award. The instructor/safety pilot is not there to coach or assist you while you execute the various maneuvers. That individual is on board primarily to intervene should a safety-of-flight issue arise. But like the judge, the instructor/safety pilot can and probably will provide feedback and suggestions in between the maneuvers. And if at any point you're not comfortable with how the flight is proceeding, or you want to stop before all of the requirements are met, just advise the judge. Don't be shy at all about communicating with those who are there to help you.

Be disciplined and systematic in your approach to the award flight. And remember: Don't reveal your mistakes to the judge (i.e., don't fix heading or bank angle errors once they've occurred). You are an artist whose purpose is to create the illusion of perfection. The airplane is your brush; the sky, your canvas. Open up your maneuvers and present them in all their glory. Show the judge what you have learned, what you can do. Have fun, be safe, and be proud of your accomplishment. 🇺🇸

Rich Stowell is a NAFI Master Instructor of Aerobatics and author of the book *The Light Airplane Pilot's Guide to Stall/Spin Awareness*. You can hear his biweekly "Flying Tips" on Gold Seal Live Aviation Radio, www.GoldSealLive.com.