

Retreads and Refreshers



Photo by Berl Brechner.

There's more to
reinstating your CFI
than just taking
a checkride

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■ ■ "Power controls airspeed and elevator controls altitude," boomed Arch Lloyd from the podium. "How many agree?" he added. Half his audience did. "How many say that power controls altitude and elevator controls airspeed?" brought out the other half.

A class of student pilots? No—a roomful of about 150 flight instructors attending a Flight Instructor Refresher Course jointly sponsored by AOPA, the FAA and the South Carolina Aeronautics Commission at Columbia, S.C.

The "aviation evangelist" at the microphone was promoting a different approach to attitude flying from that ingrained in many of us "retreads" in the audience who had been indoctrinated in the Air Force concept that long ago had stamped "power-altitude, elevator-airspeed" on our memories.

Lloyd's attention-getting tactic was not just a gimmick. He was promoting

an approach that the FAA wants to see standardized as part of "today's way of doing things" and was delivering his message—not directly to the many general aviation pilots he ultimately wanted to reach but indirectly—through the flight instructors.

And what better medium to gain a flight instructor's attention than this refresher course, a popular means for certificate renewal.

Current rules require the flight instructor to renew his instruction privileges every two years—24 calendar months in the official language. He can do this in one of several ways. As stated in FAR 61.197, he can pass a practical test for the flight instructor certificate and whatever ratings are involved. An alternate method that applies mostly to the full-time, or the regularly instructing part-time, instructor includes a record of instruction that shows he is

a competent instructor (easy if you are doing it all the time).

The pilot who may be a company check pilot, a chief flight instructor, a pilot-in-command of an aircraft operated under airline transport regulations (FAR Part 121) can show a satisfactory record and pass an oral test that may include whatever the examiner deems necessary. But for those of us who instruct infrequently if at all, renewal involves successful completion of an approved flight instructor refresher course that consists of "not less than 24 hours of ground or flight instruction, or both."

Well, we needed any help we could get. We had an expired certificate that had never been converted to the newer class ratings (broken into categories like single- and multi-engine for the airplane class). While the regs said all we had to do to reinstate our expired certificate was to pass "an appropriate flight instructor practical test," we knew it would take more than brushing up on a few flight maneuvers to get through whatever the flight examiner considered an "appropriate" test.

Sure, we remembered the basics—pull back to go up; pull back all the way to go down. Right? The only trouble was that the pulling and the pushing were expected to be at a level of smoothness and accuracy that would indicate the proficiency level of a flight instructor—not a ham-fisted "haven't flown much since the big war" roughness. Hence the need for some dual—and then some plain, old solo practice.

We first had to get a current medical certificate and bring our commercial ticket back to the legal state by taking the biennial flight check. This proved a good way to start getting in shape for the flight instructor checkride that was our ultimate goal.

Flying is only part of the problem. While the term "practical test" implies flight test to most of us, we sometimes need a reminder that the flight examiner is going to have a little chat with us before he gets up his nerve to actually get into an airplane with us. This is known as an oral exam and is just as much a factor in passing or failing as is the flight portion.

What can you do to prepare for the oral? Hit the books, right? Well, not exactly. Sure, you can get a pile (literally) of refresher texts, the FARs, flight instructor manuals, the AIM, drag out the yellowed plotter, warped E6B and assorted memorabilia and give yourself a ground school refresher course. You can do that if you want to really get boggled—and if you get boggled enough at this stage of the game, you will most probably say the heck with it and return

your back-to-flying project to the maybe-next-year file to which it has been relegated for so many years.

Take heart. We discourage as easily as anyone, and we needed both an organized way to go about the study refresher and some outside force to sit on us and literally force us to stick with it. We found the perfect solution in the Flight Instructor Refresher Course.

So far as we could read the regs, this course is not specifically required for a certificate reinstatement.

The course is designed primarily for the currently valid flight instructor who is renewing his certificate, which must be done anyway. It fulfills one of the methods for renewal—that of providing a course of 24 hours of ground and/or flight instruction. The major portion of the lectures are given by a specially trained flight instructor refresher team from the FAA Academy at Oklahoma City, with inputs from other experts in specific areas of aviation.

We were to find it a high-powered program. You have to do more than just sit there and survive for three days—that's three days of eight (count 'em, eight) hours of instruction each day. Some call it an accelerated course, some say it's a cram course, but however you name it, it is a fast paced learning environment.

The first morning got started with registration at 7:30 a.m. A hand-raising survey at the beginning gave us some idea of what the rest of the people were here for. While most were "unexpired" flight instructors merely renewing their active certificates, there were a good many of us retreads among the 40% of those attending the course for the first time.

There were only about 10 full-time instructors there. Of the rest, 85% actively flew in some capacity, not necessarily as flight instructors.

Briefings on regulations—primarily Parts 61 and 91 of the FARs—were among the priority items covered, especially those revisions that have been incorporated over the past few years. One that applied most directly to us was the conversion of the previous breakdown by category of CFI ratings from airplane, rotorcraft, instrument and glider into airplane-single-engine, airplane-multi-engine, rotorcraft-helicopter, rotorcraft-gyroplane, instrument-airplane, instrument-helicopter and glider.

Before the first day finally ended, we had gotten the pitch on attitude flying from Arch Lloyd, a review of effective teaching technique from George Williams, two hours on medical factors from Josh Mann and more on regulations from Chuck Steuben. The FAA team had put in a full day—and so had we.

The 'New'

The FAA offers the following tips on teaching their present concept of attitude flying:

Elevator and Throttle (pitch and power control). There are only two basic power conditions for flight: *variable* (adjustable) and *fixed* (by choice or by accident).

When power is variable and available for the purpose of controlling speed, then power controls speed and elevator controls altitude or rate (vertical velocity). In level flight, power controls speed and elevator controls altitude. During rate climbs and descents (constant vertical speed and airspeed), power controls speed and elevator controls vertical velocity. During ILS approaches, power controls speed and elevator controls vertical velocity.

The next two days, as full as the first, continued with reviews of basics, such as the teaching-learning process, flying techniques (groundtrack maneuvers, landings and takeoffs, preflight precision maneuvers, multi-engine operations and flight at critically low airspeeds), weather, aircraft systems and a lively session on collision avoidance, presented by the Air Force, which surely encouraged a more cautious approach to low-level military training routes among many of us.

There was a lot of material thrown at us, some more interesting than the rest, but we could have spent much more time—and wasted most of it—had we opted to refresh without the benefit of this structured course. While we felt that some of the time spent on subjects such as medical factors could be better applied to precision flying techniques, the course definitely rounded out preparations for reinstatement as a flight instructor.

Like others who were slated for flight checks, we were wondering what maneuvers our rusty reflexes would be asked to accomplish when we went up with the flight examiner. And like some of them, we dashed off to the airport after the first day's ground school class

Attitude Flying

The conditions under which power is *not* variable or available to control speed are when the power is fixed or when it is in transit. When the throttle is closed or the engine fails, elevator controls speed and power is fixed (constant airspeed descent). When using full throttle on takeoff, elevator controls speed and power is fixed (constant airspeed climb). The power is in transit when transitioning from one specific maneuver to another, such as when initially intercepting the glidescope.

Bank Control. The bank attitude of the aircraft is controlled by use of the ailerons. Yawing and slipping are prevented by the rudder. Assuming coordinated flight, heading is controlled with the ailerons during straight flight; during turn entries

and recoveries, bank is increased or decreased to the desired angle with ailerons; and during an established turn, rate of turn and angle of bank are controlled with ailerons.

The pilot should know the approximate attitude for control of the aircraft by using either or both inside or outside references, and he should also know the approximate power settings needed for the desired performance. For instance, to establish a rate descent, the pilot who is familiar with his airplane can set up a configuration, a power setting, an attitude and an appropriate trim setting—then make fine adjustments after the rate instruments settle down. This greatly reduces distraction inside the cockpit and allows more time to fly the airplane.

to get in a little last-minute cramming in the air. It helped a little, but of the seven or eight specific maneuvers we practiced, only about two would be asked of us a couple of days later. We felt later that it would have been better to remove the rust before arriving at one of these clinics; the ground classes are very intensive and require enough of your available concentration so that you are too saturated mentally to get much benefit out of an hour or so of flying at the end of the day.

"Checkitis" has always been one of our strong points—and it came through this time, too. The facade of composure we put on when we met our check pilot, Frank G. Kelley, an accident prevention specialist at the local GADO, was destroyed by the clammy handshake he got from us.

Kelley proved an old hand at soothing tense nerves though and had us calmed down to a low state of panic by the time we got to preflighting N1588 Sierra, a Beech Debonair we had brought to Columbia.

What we were asked to demonstrate in the air was up to Kelley's imagination and his personal evaluation of what was needed. His options ran the gamut of flight maneuvers we would be expected

to teach, depending on what flight instructor ratings we were after.

A good preparation guide to the maneuvers and the acceptable performance guidelines can be gained from one or more of the pocket-size Flight Test Guides, produced by FAA/DOT and available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. The one on flight instructors does not list specific maneuvers, but can be used in conjunction with the one for commercial pilot that describes maneuvers and acceptable performance limits applicable also to flight instructors. The available pamphlets and their prices are as follows:

AC 61-54A Flight Test Guide—	
Private Pilot, Airplane	\$1.35
AC 61-55A Flight Test Guide—	
Commercial Pilot, Airplane	\$1.10
AC 61-56 Flight Test Guide—	
Instrument Pilot, Airplane	.65
AC 61-57A Flight Test Guide—	
Type Rating, Airplane	.70
AC 61-58 Practical Test Guide—	
Flight Instructor	.50

We found then that merely going up solo and brushing up on maneuvers we

knew—or thought we remembered—had not been enough preparation for this flight check. The FAA-recommended techniques for flying and teaching stalls and chandelles, for instance, seem to go through cyclical variations over the years. Kelley explained, as he "retaught" us to use less than the steep "military" bank in the chandelle we had just muffed, that this ride was as much to standardize our techniques with current criteria as it was to see if our level of flying proficiency was up to that expected of a flight instructor.

We were asked to demonstrate steep 720° turns, a number of different stalls, a lazy eight we really needed more work on, an emergency descent that would have come off better if we knew the airplane well enough to drop full flaps and hold the airspeed to about 80 (another thing we learned the hard way—get to know more about the airplane you're going to use for the checkride than a few airspeeds) and some subtle orientation evaluation. ("Do you know where the airport is?")

Dropping down for some ground-reference work, we had just about decided to throw in the towel if we were so much as asked to do an on-pylon eight. But when Kelley asked us to do S-turns along a road, we were so relieved we did them passably.

A few forced-landing calls got the palms moist again, but by the time we got on final for Columbia Metropolitan, we were calmed down enough to be showing our interested flight examiner how the angle-of-attack indicator worked—and got absorbed enough in this other not-so-familiar aspect of our borrowed airplane so that we expertly rounded out about three feet above the runway.

Kelley's teeth were apparently glued in well enough, for our not-so-delicate arrival didn't deter him from filling out our temporary flight instructor certificate after we had somehow found our way back to the ramp we had left an hour and a half earlier.

So we had finally gone through with it and gotten our CFI current again. Was the trouble worth it for a retread? We think so. While we would caution the rusty pilot not to show up for a revalidation check without a good ground course and more than a few hours of brushing up in the air, we certainly would encourage him (or her) to jump back in. The water's as fine as it used to be.

Oh yes, how was the attitude flying controversy settled? It wasn't, but it sure got a lot of us thinking back to basics. And maybe that's what this retread experience was all about—an "attitude refresher" that reminded us that a flight instructor's certificate really is a license to keep learning and improving. □