



short final to Andover-Aeroflex, NJ, in case you were wondering

Budd Davisson, EAA/Sport Aviation, January, 1995

Making the Time Count

35 hours a year. That's the number the FAA recently released as the average amount of time flown annually by homebuilts. But that comes as no surprise to any flight instructor whom has been in the business for any length of time. In the course of giving BFRs and other training, it has always been assumed 35 hours is the number most single engine pilots fly, homebuilt or otherwise. Sure there are lots of pilots who do more than that, but 35 hours seems to be the magic number for most.

That raises an interesting question: How can a pilot possibly remain proficient on only 35 hours a year?

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but it takes some thinking and it takes some work.**

The normal answer assumed to that question is he or she can't maintain proficiency on that small amount of time. It has always been assumed the small amount of flying time done by the majority of pilots is barely enough to keep them remotely safe, much less proficient. At least that's the way the accepted thought pattern goes.

But, that doesn't necessarily have to be the case. It is entirely possible to remain proficient on 35 hours, but it takes some thinking and it takes some work.

However, people often confuse currency with proficiency and think because they've flown once a week (35 hours is about 40 minutes a week), they are current AND proficient. That is not necessarily true.

Currency just means having flown recently. Proficiency means being able to fly well. There's a gigantic difference and the time flown has little or nothing to do with proficiency.

We all know pilots who only show up at the airport once or twice a month, but every time they fly they look like pros. They never make mistakes and their proficiency is right at the top of the scale. We also know pilots who fly professionally and log several hours a day, but are continually embarrassing themselves in the pattern. Their proficiency, their ability to actually fly, is suspect, to say the least. They may be able to IFR their way across the nation and not miss a trick, but their stick and rudder skills leave a lot to be desired.

So, what's the difference? How can a 35 hours a year pilot have more proficiency, more basic stick and rudder skill, than one who flies 500 hours a year? The difference is a combination of the type of time flown and the pilot's attitude while he's in the cockpit.

Cross-country time doesn't count when it comes to proficiency. It may do a lot for padding the old log book and it may be the only way to hone navigational skills, but it does practically nothing for basic stick and rudder understanding. It has often been said a cross-country is the same hour flown over and over and the primary skill learned (hairly IFR work notwithstanding) is how to find a comfortable seating position.

Landings are the only things that really count. It is in the act of taking off and landing that the airplane and pilot go through their entire range of movement and knowledge. Every single aspect of the airplane and the skill to fly it are exercised to the max during an approach. So the more approaches and landings flown, the more the skills are worked and the better they develop.

But, that's not the entire story: It is quite possible to fly endless approaches and improve only marginally. If the pilot makes no effort to correct his mistakes, then bad technique just perpetuates itself.

It is in the act of taking off and landing that the airplane and pilot go through their entire range of movement and knowledge.

Attitude is far more important than flying time and that is the crux of staying proficient on only 35 hours a year. Proper attitude. If those 35 hours are flown with the right attitude, there is no reason a pilot can't walk tall every time he straps in. Without that attitude, it makes almost no difference how much a pilot flies. The skill level will stagnate and he'll never improve.

Think about it: Just how do you approach your flying? Why do you fly in the first place? Do you want to get out there and concentrate primarily on the pleasures of the experience? Do you want to watch the sunsets and three-dimensional vistas with an absolute minimum of hassle? Do you want to get off the ground in the easiest possible way and back down without having to think about it?

In other words, would you rather not have each flight be a challenge to your skills? If that's the case, you've probably already homed-in on airplanes that simplify your life by reducing the hardware challenge to the minimum. Tricycle gear makes directional control an afterthought and gentle handling characteristics make getting up and down a simple process of pushing and pulling at the appropriate times.

If that's the way you feel about flying, that's okay. We're all seeking different kinds of rewards and not everybody needs a challenge to make them feel alive. But don't fool yourself. Whether you are looking for a challenge or not, simply being off the ground in an airplane puts you in an environment that can be challenging whether you seek it or not.

If you are avoiding the challenge of improving your skills, someday the very nature of flight will put you in a challenging situation, regardless of the type of airplane, and you may not be ready for it.

That's the real danger of logging only 35 hours a year: It's not the number of hours. It is how they were flown and whether they prepare you for that unknown challenge laying out there in wait.

Even if you are limited to flying an hour every other week for only 25 hours a year, it is absolutely possible for you to remain, and actually improve, your proficiency. But you have to approach each hour with the right attitude and fill them with the right kind of challenges.

The proper attitude can be summed up by saying there is no such thing as good enough. Each and every takeoff, landing and approach will be an effort to make it better than the last one. You will be watching yourself fly as if you are an outside observer whose only job is to spot and correct weaknesses in your technique.

You are going to be very critical of yourself and will hold yourself to very precise standards



First, if you are going to fly right, you have to know what "right" is. That may mean taking an hour with a CFI to have him re-set the parameters for you, but generally that's not necessary. You know how to fly; you have just gotten a little lazy is all.

Put together a checklist in your mind of every phase of flight including, takeoff, climb-out, pattern legs and landing. It isn't necessary you write it down, but keep your mind working so you know where you are supposed to be and what the airplane is supposed to be doing. Look up the right speeds for your airplane, the most important being the Best Rate of Climb and the Best Glide. Review the operating manual so you know flap and gear speeds as well as stall speeds in different configurations and weights.

One of the cheapest parts of proficiency is cockpit familiarization drill. You can sit in the airplane on the ramp and run through takeoffs and landings in your mind without ever having to put the key in the switch. By spending a little time reviewing on the ground, you'll spend less time searching for the right instrument or switch in flight. This can't be over emphasized: Spend some time before each flight in the cockpit getting yourself back into pilot-mode. Don't just jump in expecting your brain to change gears the second you hit the master. It doesn't happen that way and the last thing you want is to have your brain trying to catch up while your hand is pushing the throttle forward.

You should actually start thinking about the cockpit and flying before you get into your car to go to the airport. Think airplane during the drive out and things will go much smoother once you get there.

Once you're strapped in and ready to crank, think about the pattern for a second. Visualize where the various legs will be placed, what kind of speeds you'll be running in each and when and where you'll make configuration changes. Get the pattern firmly visualized in your mind. Then all you have to do is go out and fly it.

It would be easy to say your quest for proficiency starts when you're lined up on the centerline and bringing the power up. But that is wrong. Proficiency training starts the second you fire up and begin taxiing. Taxiing precisely is just another part of handling the airplane.

When you begin to move and start making turns notice whether you are thinking far enough ahead that you are leading the turns, rather than getting too deep into them and need to really pull it around hard. As with the pattern, visualize the path you want the airplane to take on the pavement and make it take that path. Don't wait until you're at the corner before planning for the turn.

While running through the checklist, look at yourself. Are you comfortable and quick in making your moves or do you have to think about each. Do you find your hand reaching for something but you aren't sure what or why? This is a common problem for someone who doesn't spend enough time in the cockpit and is easily cured by spending cockpit time on the ramp.

As you roll out on to the runway, make certain you're exactly straddling the centerline. Precision is the result of striving for perfection and it starts with centering the airplane before takeoff.

Notice how smoothly you bring the power up. Are you aware of what the airplane is doing while the power is going in or do you find yourself first concentrating on the throttle and then switching to what's happening

outside? You can't do that. Nothing in the cockpit is of any consequence until off the ground. Until then, you're head stays outside directing traffic.

The objective of each takeoff is to learn to do them as smoothly and intuitively as possible. That means on a nose wheel airplane gradually building back pressure on the yoke, lightening the nosewheel until it just begins to come off the ground. Then, the second it lifts off, you memorize that shallow nose attitude and keep releasing backpressure to hold it. This way instead of lifting the airplane off, you are letting it fly off. It will leave the ground at a speed far enough over stall it won't have any tendency to settle back on.

If you just go racing down the centerline and yank it off at some higher than stall speed, you are asking it to fly when it may or may not be ready to. Also, some aircraft which are pitch sensitive (Yankees come to mind) become more so as the speed increases. By rotating forcibly at a higher speed, it leaps off the ground and you have to immediately get the nose back down. This can produce a PIO that exists only because of the excess speed on rotation. This type of takeoff has lead many to think some airplanes are difficult to fly and must be yanked off the ground, which is usually not the case. This system won't work on a few airplanes, but very few.

On a tailwheel airplane a similar system is used, but the tail is raised to get the shallow angle of attack. The airplane is running on the mains with the tail slightly down and the effect is the same as on the nose wheel birds.

Once off the ground you'll be looking for the attitude that yields that magic best rate of climb number. We're not talking something *close* to that number. We're talking *exactly* that number. There is no margin for error in this exercise. If you don't make every effort to hold exactly the attitude that gives exactly the airspeed, then you are missing the entire point.

By punching the right mental attitude button before we head for the airport, we can make every minute count and have a good time doing it.

To fly precisely means deliberate overkill. If you try to hold exactly the number, chances are you'll only be a mile or two off. But, if you're satisfied being a couple miles off, then you'll actually be off even further. You'll be approximating the speed and you won't have learned a thing.

As you're climbing out look ahead and visualize where you're going to place crosswind and downwind. Don't just wait until the altimeter has 500 feet to begin thinking about it. Look ahead. Then, when you do turn, look back over your shoulder at the runway. Did you drift right or left? Next time resolve to stay on the extended centerline.

Picture your path on the ground and what a precisely 90-degree turn onto crosswind will look like. It will probably take less than 90 degrees to fly a right angle course to the runway with the wind correction angle dialed in. Don't forget and let the wind push you wide ways.

Always be looking ahead and thinking about where you need to go and what it takes to make that happen. If you want to improve, you have to keep compensating for those things that would make your pattern anything but perfectly rectangular.

Downwind sets the tone for the rest of the approach. It has to be much more than simply parallel to the runway. It must culminate at the Initial Point directly opposite the end of the runway where you'll make your initial power reduction. That point and how you arrive at it will determine the rest of the pattern.

Your goal is to arrive at the point going the same speed, at the same altitude, the same distance from the runway every single time. Consistency is everything. If you let any of the parameters change, you'll be guessing the rest of the way.

Also, don't fly a bomber pattern unless you're flying a bomber. Never fly further away from the airport than necessary. Always try to stay close enough you can make it with a dead engine. This is only good common sense. Beside, huge patterns accomplish nothing more than screwing up the folks in the pattern behind you.

If you insist on making power-on approaches, at least keep them to a logical size. Even a power-on approach can be made much tighter and safer than most pilots believe.

When reducing the power at the IP watch how you do it. Were you smooth? Did you already know what you were going to do with the nose, or did you simply jerk the throttle and let the nose meander around before nailing it on a good glide attitude? Watch yourself. Observe how you do things.

Look ahead and visualize where you're going to put base. When you make the turn see if you are where you visualized yourself. Did you slide one way or the other? Make a mental note to correct that on the next pattern.

Everything you are doing from the IP on down is aimed at putting the airplane on the first 300-500 feet of the runway, regardless of how long it is. We're trying to build proficiency and precision, so simply making a decent landing "somewhere" on the runway doesn't qualify. Precision, remember.

Try to be perfect, knowing for a fact you'll be off a little. But if you don't shoot for perfect, you won't even come close.

The landing in a nosewheel airplane is just the reverse of takeoff. We want to gently kiss it on the mains and hold the nose off until it is ready to come down. We're looking for finesse, for a degree of gentility, rather than simply plopping unceremoniously on the runway. Again, you may not get it every time, but it is the effort that makes you better, not necessarily the accomplishing.

On a tailwheel airplane obviously you're looking for the illusive perfect three-pointer. But, in the interest of widening your proficiency, mix the three-pointers up with an occasional wheel landing just to keep you sharp.

On either airplane notice carefully whether you touched down going perfectly straight. If you felt that tell-tale tug on the seat of the pants indicating you were moving sideways as the wheels touched, again resolve to correct that next time.

And were you in the middle of the runway or did you just approximate the middle? Next time...!

35 hours a year isn't much time to maintain a skill as illusive as flying, but it can be done. It can also be done even if every hour isn't spent in the pattern. A lot of our flying is more in the vein of sight seeing which is okay, but why not sight see over to another airport. Shoot two landings then move on to the next one. Repeat that at two or three airports and it will have an amazing effect on your proficiency. Different airports make you develop different references and do a lot for encouraging a pilot to use his head. Besides, it's fun.

We all wish we could strap our airplane on at least once a day, but not many of us can do that. Most of us fall in the 30-50 hour category and are happy when we get that. But none of us wants to think our skills are eroding through misuse. And they don't have to. By punching the right mental attitude button before we head for the airport, we can make every minute count and have a good time doing it.

There's no better feeling than knowing we really are aviators and it doesn't take 500 hours a year to get that feeling.