

AIRCRAFT SIMULATOR TRAINING PIREP

by Jon Gibson, TTCF Member



We all know that loss of an engine in any piston twin is a significant emergency. The issue is most pronounced at rotation, so proper training is critical. For that reason I'm excited to share with you the best loss-of-engine training I've experienced in 8,500 hours of flying time: Aircraft Simulator Training (AST) in Santa Rosa, CA.

But first let me introduce myself and explain how my flying experiences led me to the Cessna 414A I currently own. I've often done things the hard way. For example, as a high school student my Dad ran the largest flying club in the Air Force. When he offered to get me my pilot's license at a low cost I turned him down. Instead I waited until after completing my undergraduate degree and had to dig deep into my own pocket for my private rating. Better late than never because that expense turned out to be one of the best investments of my life.

Less than a year later, I enlisted in the Air Force and was accepted into pilot training. The first day of training we were ushered into an auditorium. The instructor told us: "Look at the man on your left, and the one on your right. One of them will be gone within four months." He was right. Roughly one third of the class was washed out within a few months. I'm certain some of those guys would have made it if they

had at least a few hours of flying time under their belt before entering pilot training. For those of us who completed the course, we considered it the most challenging and rewarding year of our lives.



Aircraft Simulator Training's full motion Twin Cessna sim.

Flying a C141 in and out of Vietnam, and a variety of other destinations all over the world, taught me the critical importance of knowing my aircraft and how to deal with emergencies. Frequent simulator training allowed me to practice emergencies that would be too dangerous to practice in the aircraft.

When I returned to civilian life my passion for aviation grew. My business allowed our family to operate a variety of single and twin-engine aircraft. After operating a Twin Comanche, an Aztec, a Navajo, and an Aerostar, I moved up to a Cheyenne IIXL. I loved the aircraft. I especially appreciated the fact that loss of an engine in a turboprop at rotation was much less of an issue than in a piston twin. But the maintenance and operating costs were exponentially higher than operating a piston twin.

As I explored piston twin options it became obvious that the 300 and 400 series Cessnas were in a class of their own. Nothing else could offer the same advantages. Over 3,000 hours of time in a 340A proved to be a wonderful experience. The aircraft allowed me to fly the same missions as in the turbo prop. Yes, I flew a bit slower. On rare

occasions I had to make an extra fuel stop. Yet several advantages made up for the slower speeds. Maintenance costs were a fraction of what I spent to fly the turboprop. Both capital cost and operating cost are also dramatically lower.

My company headquarters are in Northern California. Our own airplane allows me to be at our location in Western Washington or Idaho in three hours. The same trips would take nine hours if I traveled via commercial airlines.

In 2016 I assessed the options of buying a larger cabin aircraft to haul more people, and considered a Cessna 425. But once again I decided the speed advantages were outweighed by costs. Soon the opportunity to acquire a Cessna 414A (Chancellor) presented itself, and I bought the aircraft. I believe it's one of the finest aircraft ever built.

I have the same cabin and baggage capacity as the 425. My family and my employees absolutely love the aircraft. We've already put over 300 hours on it, and have flown it from the West Coast to the East Coast many times. The pressurization allows me to operate at the same altitudes as a turboprop when weather or winds make it advantageous to climb to the higher altitudes.

Yet the same challenge remains: loss of an engine at rotation, or anytime at a low altitude. My desire to stay proficient for this emergency led me to Aircraft Simulator Training (AST) in Santa Rosa, CA, after receiving a post card from them. I wasn't familiar with AST, but I decided to take the plunge and see what they had to offer. They are located not far from me at the Santa Rosa, CA, (KSTS) airport. AST only teaches sim training even though the instructors are high time, "gray hair" pilots with extensive general aviation, corporate, and airline backgrounds. Their motto is: "We teach for the innocent parties who are passengers in the aircraft."

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The ATS Twin Cessna sim is a full motion unit built by Precision Flight Controls, Inc.

AST is a small “boutique” training facility that operates three sims built by Precision Flight Controls, in Sacramento. I was intrigued to find that their full motion sim, custom co-designed by AST’s owner, Rick McGuire, and Mike Altman, the President of Precision Flight Controls, mimics a Class D sim with a full motion base. It took two years to complete. McGuire, who is a long time Twin Cessna owner, made sure it would also be able to mimic the entire Twin Cessna line for sim training.

I use the term “boutique training facility” to describe the size and one-on-one personal attention that AST’s owner and instructors give to every student. The owner, Rick McGuire, teaches all the twin-engine training. Steve Benedict, a retired thirty-year DPE (Designated Pilot Examiner), teaches the instrument side of the operation. Also on staff is Bert Botta, a retired TWA and Net Jets captain, and Kent Sapp, a former Army helicopter instructor who specializes in the G1000 system.

The instruction is definitely not one-size-fits-all but is tailored to the individual needs of each pilot. When I talked to McGuire he recommended that I only work the one-day single engine training. That helps him determine where the pilot’s weak points are.

So I took the short, one-day course that McGuire calls a “twin tune up.” Again, depending on the needs of the pilot, they offer three and four-day programs. If you already have your insurance recurrency training and feel like you just need to stay tuned-up, the one-day, single engine training is a great way to maintain confidence and proficiency. The prices are fair and are based on a package program or by the hour.

Ground School

The day started out with a one-on-one discussion of the aircraft and systems. Not only is McGuire a high-time, multi-rated instructor but he is also an aviation attorney who represents several aviation companies. When at home in the Houston area, he stays current on the Twin Cessna by working with the Air Impression’s staff in Waco, a company I was familiar with since they did the pre-

buy inspection on my 414A.

McGuire started out my training with discussion-based training on aircraft systems and flight procedures. He made numerous recommendations based on his years of flying and maintaining aircraft. As he stated, you can take his ideas or disregard them.



The AST team. Left to Right: Steve Benedict, Bert Botta, and Rick McGuire.

Because he was once the owner of a large tire and service center, he pointed out ideas that help maintain aircraft tires and brakes. Because of his experience in Beechcraft twins he pointed out things that Beech did with their checklists and training that Cessna did not, such as checking the fuel cross-feed system on a regular basis and making sure that the fuel valves will actually kill the engines when turned off.

“These guys are good... Their moto is: ‘We teach for the innocent parties who are passengers in the aircraft.’ ”

We talked about pump failures and how they affect fuel gauge readings. There were otherwise overlooked, numerous little things about the aircraft that had not been brought out in my prior simulator training classes.

Flying the Simulator

We then moved the training to the full motion sim, a beautiful piece of equipment. McGuire stated the reason he wanted full motion was that he is

a strong proponent of loss-of-control (LOC) training, since LOC usually occurs in the low speed regime and often on low visibility approaches. The motion gives warning over and above the buzzing of a stall warning horn. McGuire stated that Twin Cessna aircraft are so gentle in the low-speed regime that they will not give you the necessary warning for speed deterioration in slow flight until you start getting buffets. So he wanted his sim to be able to accurately mimic the Twin Cessnas in slow flight.

He cited the circle-to-land maneuver on a non-precision approach as the most dangerous maneuver to fly. He knows of a 414A that was lost because the pilot got complacent at the end of the flight due to the smooth operation of the aircraft on the circle-to-land. He personally knew the pilot. He’s especially passionate about training to avoid this kind of accident.

After my intro to the sim, we got into the hard stuff. But his method made it easy. When you work with McGuire, you will constantly hear him describe what he calls “stabilization” and staying away from overload. He was adamant that the heading bug be set on the DG, or in the heading mode, for the runway heading. The airport we were departing from was also set into the Garmin 530. Another subtle but important tip was to set in the heading of the return runway so the extended centerline could be set in to the Garmin 530. This was to help eliminate confusion and save mental stress in the event of an engine failure and return to the departure airport. He said, “You don’t need to be pushing buttons and talking on the radio with an engine failure on takeoff.”

After a normal takeoff and a few turns to get used to the feel of the sim, we moved on to engine-loss work. With one button pushed on the sim control panel, we were back on the runway. We did repeated takeoffs with engine failures before and after V1.

The attorney side of McGuire surfaced as he told me about accident cases he has handled where aircraft had been damaged on take off, ending up off the

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runway with nose gears snapped. He showed how to shut down an aircraft quickly with a method I had never used before.

Engine Failures on Take Off

We did a lot of work on repeated takeoffs with engine failures. "Hold the bug, work the vertical speed," he would say. He drilled this over and over on every engine failure. The procedure became automatic. He showed me how to work the airspeed area between the blue line and the red line with an engine failure as low as one hundred feet. He showed me how to double-check the "dead-foot-dead-engine" using a simple method of pointing out that if the pilot lets the nose wander from left to right without "stabilizing," you will misread the "dead-foot-dead-engine" on an engine loss. Again, the whole idea was to get the aircraft stabilized without being overloaded.

AST instructors are able to start the sim out with a light gross weight and

then add weight up to full gross so that you can climb out on one engine at max weight. I was trained on which way to turn with an engine loss and the reason for long finals. "You just passed up a safe taxiway that you could have landed on if you were short of the runway," he prompted, after I'd passed over a taxiway. He is a believer that if you can taxi on it, you can land on it in an emergency if you're short.

Approaches

We started out with VFR approaches. I shot approaches over and over in good weather conditions, and then the weather was lowered on the sim panel until I was flying approaches to minimums. McGuire has an interesting and effective technique for controlling the aircraft during the touch down roll with only one engine turning. I was also taught proper shutdown procedure on the takeoff roll if a problem occurs before Vr.

Most of AST's training is recurrent,

and what they describe as confidence building. They will work with you until either your leg gives out or you have perfected the procedures, whichever comes first!

Follow Up

As an instrument-rated pilot you will leave AST with enough confidence to be able to fly a single engine approach to minimums. And that fulfills AST's motto: "We teach for the innocent parties who are passengers in the aircraft." These guys are good. You will never have an AST instructor who gets handed the Aircraft Flight Manual just before you show up.

As for me, I'll be going back soon. I want to do the instrument course with Steve Benedict.

You can contact AST 24/7 at: 707-528-IFLY (4359) or visit their website at: <http://aircraftsimulatortraining.com>.





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Jon Gibson
414A/Former Air Force Pilot
8,000 Hours

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