

— LATEST BRIEFING —

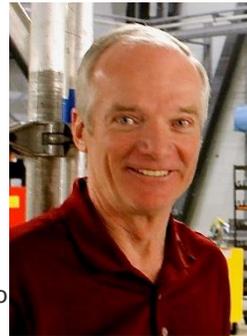
## Progress on All Fronts from your Safety Committee

*by Charlie Precourt, CJP Safety Committee Chairman*

We're making great progress this year on a number of our safety initiatives, many of them connected to our Gold Standard Safety Award. Thanks to all of you who are in pursuit of the award already, I'm sure you will find it rewarding. The concept of the Gold Standard is to commit to training and continuous learning to make our flying safer and more enjoyable.

One of the criteria for the award is completing a training event of your choice (beyond the 61.58 requirements for Citation currency), such as adding a rating, going through altitude chamber training or other options outlined in the award application. You can click [here](#) to download the application that contains the guidelines.

CJP has been diligently working with several providers to facilitate our members' access to Gold Standard training, setting them up as group training sessions so we can share in the experience. The first of those will take place April 9 at Flight Research in Mojave, and is their upset recovery training program. We have several members signed up for the event, but there are still openings left. I am a big believer in this kind of training as it is very realistic and will provide you the ability to make the "Right First Move" if you find yourself in a significant upset event. Both Kirk Samuelson and Tom Abood have already taken the course and give it a strong endorsement (see next articles). From my perspective, you simply can't get any better training than having it in your own jet, in real world conditions, which is exactly what FRI provides. You get to explore the edges of your Citation operating envelope (not going upside down) then do the aerobatic training in a highly capable Flight Research aircraft. The "Right First Move" to



make if you ever are in an upset condition will become instinctive, and could save your aircraft and your life.

We're also organizing two more follow-up events for Gold Standard Award credit that will focus on advanced avionics training. One is for the Rockwell Collins line and will be held in Cedar Rapids, Iowa. The other is for Garmin and will be held in Kansas. Our avionics are extremely capable...as a matter of fact, more capable than what I had in the dang Space Shuttle! But they really only lower our workload if we have complete comfort in navigating through the various functions confidently and quickly. I think we've all been there when we get stuck, heads down, looking for something when we're busy flying the airplane...it's easy to fall behind. These two sessions will be provided by THE experts, the manufacturer's representatives who know the avionics suite inside and out. We are bound to learn some great tips. So, watch for notifications regarding these events as we get more details set up with both Rockwell Collins and Garmin in the near future.

With these Gold Standard events focusing on training and technology, I found it a very interesting coincidence to learn the NTSB is taking up a similar initiative to address the high frequency of loss of control in General Aviation. They have asked me to participate in a roundtable discussion with NTSB Chairman Robert Sumwalt in late April, where we will focus on how innovations in training and technology can be used to reduce GA accidents from loss of control. They are interested in the initiatives we have in play at CJP (like our Gold Standard Safety Award) and how it might be applied more broadly in GA. Among the other panelists will be aerobatic champion Patty Wagstaff, ForeFlight CEO Tyson Weihs, and a number of other experts representing AOPA, EAA, the General Aviation Manufacturer's Association (GAMA), FAA Flight Test and the Embry-Riddle and Liberty University Aviation Safety programs. So, from a CJP perspective, I think we're front and center with the rest of industry to address the safety issues in General Aviation. In fact, we're leading the way with initiatives like our Gold Standard Safety Award.

Another area where we're making progress is moving to more scenario-based training with our simulator providers. Both TRU and FlightSafety have taken up development of an enriched curriculum surrounding challenging and realistic scenarios, which we discussed at the convention in Phoenix. We have also approached the FAA about how we can adjust 61.58 to further accommodate the needs of the single pilot. We discussed this topic with the head of FAA's Flight Standards, John Duncan, who has opened the door to us for change that would result in a better training experience for our members in the simulator. So, as we develop scenario-based training improvements, we'll be working with our simulator providers to tailor 61.58 to better meet the needs of our single pilot members. We continue dialogue within our membership regarding the merits of simulator versus in-aircraft training, and we recognize both are critical...but our goal is to make the simulator-based training more value-added and motivate those who have moved away from it to come back. In this issue of Right Seat, Neil Singer joins me with a great article (below) comparing the two training methods and how you can leverage the best of each. We really would like to see all our members taking advantage of a great simulator training curriculum.

With that said, I went to TRU in Tampa last month to complete my CJP recurrent 61.58 training and explore what they've been creating in scenario-based lessons. In one word, it was GREAT! I got to work with Weldon Burnett, who heads their Citation line of instruction. He has been integral to their development of enhanced training scenarios for us at CJP.

There are several things that TRU is doing that I found to be very beneficial. First, most of their instructors also fly for corporate flight departments or as mentors with other owner operators. It goes without saying that this gives them a perspective on our day-to-day challenges that makes them better instructors for our needs. TRU also has a standalone simulator they call the Next Generation Trainer (NGT) that doesn't have motion, but has a fully functional flight control and avionics system and visual scene display. I was able to use this for self-study and practice, which was really helpful. I don't fly the Citation frequently enough to have great muscle-memory for a lot of the maneuvers or using the Proline 21 FMS, so having access to this to warm up and get into a groove was really great. I found I could practice V1 cuts and single engine go-arounds on my own and really improve my proficiency in holding the aircraft ground track. I was also able to refine techniques for managing the FMS and autopilot in some complex scenarios.

TRU allows you to use an on-line ground school that I took advantage of before traveling down for my training. On arrival, I took the exam, reviewed it with Weldon and then we dove into the flight-training portion. They have also instituted an "email question of the

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day.” Each morning I received a systems training question. This gives a really easy, one-minute per day, refresher on systems knowledge, every day of the year...what a great way to maintain systems knowledge. These features all add up to allowing more time to focus on real operational activities in the motion base simulator. Finally, the scenarios they are developing are right on target for making the simulator really work to our needs. In all, a lot of progress here.

Finally, we’re also making headway in the development of CJP’s Standard Operating Practices (SOPs). We’ve engaged Neil Singer to help us write these and we will soon be ready to share them with a number of our members who have volunteered to help us develop them. Our plan is to have them ready by the CJP Annual Convention this October in San Antonio. The premise of the SOPs is to provide a compilation of the best techniques in use among our members, and promote them as ways to enhance your operations. Adhering to SOPs enables us to do things the same way each time, develop better muscle memory and build bandwidth to handle the unexpected. Within the SOPs, there will be items that are common to all types of Citations. There will also be a section of the SOPs that are specific to certain types within the family - the Proline 21, Garmin G1000 and Garmin 3000 equipped aircraft will each have their own type-specific SOPs. We’re excited to roll these out to the membership, simulator providers and instructors, so we can all start training to them and take advantage of the best practices in our community.

I encourage everyone to read the articles that follow, highlighting others’ experience during the enrichment training at TRU and FlightSafety as well as Neil’s article regarding simulator versus airplane training.

Fly Safe!

~ Charlie

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## TRU Gold Standard Enrichment Training

*Kirk Samuelson*

Completed In: January  
Location: Carlsbad, CA

### **1. What led you to pursue this particular training course?**

I signed up for the new TRU Gold Standard Enrichment added training to be done in TRU’s Next Gen Sim while I was getting my 61.58 recurrent. I was their first person to do so.

### **2. Can you summarize the itinerary of the training program?**

The first day was tied up with doing all the ground school after I had completed the 20 hours of distance learning on the computer prior to coming. We also got in the first of three 61.58 sim sessions. The second day, we completed my second 61.58 sim session in the morning, and after lunch returned and spent three and a half hours doing ground and flying the next-gen sim. On the third day, we did my final 61.58 sim and test in the morning, and my CJ2+ differences course. Again, after lunch I returned and did three and a half hours on my second enrichment flight.



### **3. What piloting scenarios and skills were key focuses? Examples of some of the sessions?**

The second day session was a LOFT flight with many situations that came from contributing to several actual single pilot accidents. We took time to fail various instruments and explored ability and methodology to still be able to use auto-pilot. We also did many added Collins box uses to expand my capabilities. The third-day flight focused on real world scenarios (no failures) including very busy and challenging approaches, all with missed approaches so I could get used to actually having two engines again. We then spent more time improving my Pro Line capabilities, even trialing a couple punching errors that have

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gotten people into trouble. We also did a noise abatement take off right into the weather to see how busy that makes life.

**4. What would you say are the core benefits of completing such a course?**

It was eye opening to me how this training goes far beyond the 61.58. In my 61.58 morning sessions, I knew I was being tested. I was in test mode, which was totally different from when we returned each afternoon and I went into the next gen sim. In those sessions, it was all about me learning, trial and error, having fun, openly discussing past accidents and running through mistakes, etc.

**5. Any advice for other CJP members considering the training?**

I strongly support this added training to qualify for the Gold Standard award. I will want to add this to all of my future 61.58 training events and can see benefits of returning mid cycle also.

**6. Additional thoughts, comments?**

Each session qualifies for two hours of the six hours of added flight training required, so currently I have four hours. TRU added a note to my 61.58 certificate that noted I had four hours of added enrichment flight training, which I can then attach to a Gold Standard application.

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## TRU Gold Standard Enrichment Training

*Tom Abood*

Completed In: January  
Location: Carlsbad, CA

**1. What led you to pursue this particular training course?**

I was due for my 61.58 recurrent and prefer to do simulator based training for my recurrent. I became aware at the CJP Convention that TRU was considering an enrichment enhancement to the 61.58 recurrent program that would dovetail with the CJP Gold Standard Safety Award and I was interested in that possibility.

**2. Can you summarize the itinerary of the training program?**

The enrichment component consisted of two afternoons with a one-hour briefing and debriefing and two hours of scenario based training in TRU's AFTD, which has a full PL21 CJ3 cockpit with realistic displays and control forces.

**3. What piloting scenarios and skills were key focuses? Examples of some of the sessions?**

The piloting key focus was realistic line oriented flight training with scenarios running from seemingly small avionics based failures (e.g., ADC failure with attendant indication errors and loss of certain components) to terrain awareness to low noise abatement departure procedures.

**4. What would you say are the core benefits of completing such a course?**

The benefit of completing additional work beyond the required 61.58 elements is refining techniques that are often overlooked until encountered in the real world and for which sim time is not usually available.

**5. Any advice for other CJP members considering the training?**

I think practicing line oriented scenarios in a full simulator or AFTD is an excellent way to make 61.58 training more productive and efficient. Each owner pilot can customize the training to address areas of interest or concern to that particular pilot.

**6. Additional thoughts, comments?**

The CJP Gold Star Safety Award draws all of us owner pilots in to a regime of what "good" looks like and reinforces the need to combine various training elements to maintain proficiency. The elements comprise a range of both in airplane, ground and full motion simulator requirements, such that someone who completes the requisites of the award will

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have taken a great stride towards proficient, safe flight operations. It makes clear that what good looks like isn't a single in-airplane recurrent once a year and I'm good to go.

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# FlightSafety CJP Single Pilot LOST Training

*David Miller*

Completed In: March  
Location: Wichita, KS

**1. What led you to pursue this particular training course?**

I was looking for new ways to earn the CJP Gold Standard Award, and thought the new FlightSafety (FS) Enhanced CJP training scenarios would be interesting.

**2. Can you summarize the itinerary of the training program?**

FS offers the below full motion sim scenarios for all CJ models:

- Go/No Go decision making
- Departure and Approach performance planning
- Inadvertent Severe Icing Encounter
- Approach Plate analysis and landing considerations
- Use of Minimum Descent Altitude (MDA) as Decision Altitude (DA)
- High Density Traffic
- Single Pilot Lost (Line Oriented Simulation Training)

Each two-hour session (plus brief and de-brief) offers an in-depth look into each topic and is imbedded in a sim session. They were developed in conjunction with CJP and are free to full service FS customers.

**3. What piloting scenarios and skills were key focuses? Examples of some of the sessions?**

Each sim session is non-graded and takes a look at how the topic directly relates to flying a single-pilot Citation.

**4. What would you say are the core benefits of completing such a course?**

A greater understanding of the topic which just cannot be taught in the normal recurrent time frame. I chose the Single Pilot LOST. We briefed a specific trip with multiple stops, reviewed landing data and then flew the trip while observing how various runway contaminants effect landing performance. It was an eye-opener!

**5. Additional thoughts, comments?**

I look forward to taking the remaining seven courses each time I do a recurrent. In addition, our Safety and Education Foundation is helping to develop and refine the FS courses to best reflect how we operate our airplanes.

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# Simulator versus airplane training

Why they complement, not compete with, each other

BY NEIL SINGER

ILLUSTRATION BY DANIEL HERTZBERG

**PILOTS OF ANY RECENTLY PRODUCED JET** have a choice for initial and recurrent training: perform the training in a full-motion simulator at a training center, or in flight with an instructor. Many new jet pilots go entirely one route or the other, depriving themselves of the chance to experience the benefits of both. Each of the two options excels in some areas, while falling short in others. The most proficient pilots understand this and leverage the unique training strengths of both simulators and aircraft.

Some events—specific systems failures in particular—must be trained in a simulator simply because they can't safely be reproduced in an aircraft. An engine fire, for example, requires branching actions of engine shutdown and fire extinguishing agent deployment, which leads to other system changes as electrical, hydraulic, and/or bleed air sources are lost. A pilot training in a simulator will see the changes occur as they actually would with a fire present, while in an aircraft the procedures can only be talked through—with a good bit of imagination required.

Simulator training also is preferred for procedures that feature either a very steep or very shallow learning curve. Many of the former are unsafe to perform in an aircraft, doubling the importance of experiencing them in the simulator.

For example, most light jets feature a back-up braking system that uses pneumatic (trapped gas) pressure to directly actuate the wheel brakes, bypassing the normal hydraulic system as well as the computer-controlled antiskid process. Because no antiskid protection exists, the first time many pilots practice

emergency braking, they apply too much force to the control handle. It's common for the initial training attempt (and many attempts in real life) to result in blown tires and a loss of directional control on the runway. However, the second attempt is often completely acceptable, as pilots can quickly recalibrate the force they use.

This is a textbook example of a steep learning curve: Skill rapidly increases with a small amount of practice (note that the colloquial use of the term "steep learning curve" actually means the opposite of the technical meaning). Only a few practice applications will dramatically lower the risk of bad outcome. As this procedure is unsafe to attempt in-aircraft, a pilot who has received *only* in-aircraft training misses out on the rapid skill increase potential of just one or two practice events in a simulator.

A maneuver with a shallow learning curve is one in which much repeated practice is needed for skill to increase to the necessary level; sometimes these maneuvers also are best practiced in a simulator. Consider the single-engine go-around—the most procedurally complex maneuver performed during an initial or recurrent checkride. Combining precise (and often strenuous) rudder control with demanding lateral and vertical aircraft control, flight management system changes, and auto-flight mode programming, the single-engine go-around can be performed perfectly only after relentless drilling.

While a creative in-aircraft instructor can simulate single-engine go-arounds at altitude, allowing for more repetitions in a given space of time, the maneuver isn't quite the same as when it's performed out

of an actual approach. In a sim, however, the instructor can reposition the aircraft to just above minimums time after time, allowing for a massive number of practice maneuvers in the amount of time only one could be practiced in flight. Particularly for the first-time jet pilot, the repeatability of tasks in the sim is of high value here.

As good as the visual and graphic systems on simulators have become, tasks that require visual maneuvering often can be better trained in real flight. The prosaic visual approach, for example, is one that can be surprisingly difficult for a new jet pilot to execute well. Approaching an airport from an unusual angle, especially to a runway without an instrument approach, requires a high comfort level when interpreting the sight picture to derive cues for distance, alignment, and relative height. Yet visual approaches in a sim tend to be very scripted: takeoff, make closed traffic to a five-mile final, and land—not at all the way that 99 percent of real-life visual approaches are flown.

Because of similar factors, circling procedures also are of higher training value when performed in a real aircraft. For reasons of FAA certification of the simulator and training course, three domestic circle-to-land procedures—at Memphis International Airport, John F. Kennedy International Airport, and Wichita Dwight D. Eisenhower National Airport—are used for nearly all initial and recurrent simulator training. Not surprisingly, after teaching the same circling approach hundreds of times, sim instructors have developed tips on executing the procedure ("turn to this heading when acquiring Runway 27, turn base to

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the landing runway when over this building...") that, while helping teach the student to fly *this* approach nicely, are in fact counterproductive to the much more important task of teaching the student to fly *any* circling approach safely.

In aircraft, the student will be presented with circling procedures with any possible combination of acute or oblique angles between the runways, and MDAs from as low as 300 feet agl to as high as 2,000 feet above the airport. Each requires a very different set of steps to execute safely, ensuring the student truly learns how to assess the relationship in space between the aircraft and the landing runway, not just how to execute the same five steps at the same five trigger points every time.

Landings round out the visually based procedures that are more effectively trained in aircraft. All runways in the sim end up looking the same, and depth perception just isn't quite up to a real-life level. As a result, it's relatively simple in the sim to just pull the power to idle at 50 feet agl and wait for the airplane to contact the runway. Combined with the ubiquitous steady 10-knot crosswind, the landing becomes as formulaic as the visual and circling approaches.

Training in the airplane, the pilot is confronted with different runway widths and slopes, obstacles such as trees or buildings obscuring the runway along short final, and distractions of other aircraft moving on the surface and competing for visual attention. Skill progression can occur in ways not possible in a simulator.

A last set of maneuvers lend themselves to periodic training in the aircraft: those airwork maneuvers, such as stalls and steep turns, where the kinesthetic feeling in the aircraft will be dramatically different than in a simulator. Because of the limits of a simulator's motion system, sustained change in any axis can't be replicated, nor can continuous high or low G loadings. Being aware of hearing and feeling the changes in sensory cues as a stall is approached is as important, if not more important, than executing the recovery properly. Pilots who have availed themselves of in-aircraft training opportunities (especially specialized upset prevention and recovery training) can be considered more "innoculated" against an inflight upset, from having experienced the warning cues that a stall or other event is imminent. **AOPA**

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