



— LATEST BRIEFING —

A Year to Celebrate - CJP Members are 12 Months Accident/Incident Free!

by Charlie Precourt, CJP Safety Committee Chairman



Your CJP Safety Committee has some really fabulous news to share... Each year as we approach our annual convention, we meet with Textron to review the accident and incident tally for the previous 12 months. We break the list down by type of accident/incident for trending, and we also look for any that involved CJP members. We are now approaching 1,400 members with some 900 Citation aircraft in our collective “fleet,” **and we are accident and incident free as an association** since last year’s virtual Convention in Wichita! Nice work all!

If we look at the entire Citation fleet, including non-CJP members, there were a total of 51 “events” during the 12 months since our last convention. We will go into these in more detail at our Safety Standdown during our upcoming convention in Indian Wells, but here is a brief summary of these accidents and incidents:

Of 51 total events Oct '20 through Sep '21, the breakdown includes:

- 3 Fatal accidents
- 11 Runway excursions; 8 on landing, 2 during taxi and 1 during takeoff
- 12 mechanical failures (various systems, engine issues, pressurization, etc.)
- 9 bird strikes

- 3 deer strikes
- 13 miscellaneous (including taxiing into parked aircraft, severe weather, impacted fence, and 3 aborted takeoffs)

Also of the 51 total:

- 29 involved 501, 550 and 560 series models
- 11 were 525 models
- 10 were 750, 700, 680 and 650-model aircraft
- 1 was a 510 model

Unfortunately, the Citation events included 3 fatal accidents, one in a 501 and two in 560 aircraft. All three are still under investigation. (One was shortly after takeoff, a 501 departing Smyrna, TN, another was a 560 during enroute climb out of Warm Springs OR, and the third was a 560XLS+ on takeoff from Plainville, CT.) We will give an update on the investigation status for these during our convention. Although we don't have final investigation results, we can still reinforce best operating practices that can mitigate common contributors to accidents like these. Neil Singer talks about airspeed control as one such mitigation in the article below.

One of the excursions on landing was the December 2020 Lufkin, TX wet runway accident in a Citation 551 that we discussed in Right Seat in some detail in our January 2021 article. Peter Basile of Textron did the on-scene investigation of that accident and will report the findings and lessons learned in detail at our convention in Indian Wells. There are lots of great takeaways to share on this one.



Photo courtesy of AvClaims.com

As most of you are aware, we have a safety initiative underway this year to address these runway excursions. In concert with the Presage Group, we completed a survey of our members regarding decision making during approach and landing. Thanks go out to all of you (over 200 members) who participated in that part of the study. We then held a very successful working group session in Wichita in early August with 10 CJP member volunteers who evaluated and created proposed new standard operating procedures regarding stabilized approach and landing parameters and go around criteria. This was followed by a simulator evaluation session of these potential new SOPs at FlightSafety in Wichita in early September. For the simulator trials, we had an additional 20 CJP member volunteers who participated in these trials. David Miller provides a summary of these activities in his article below.

One of the most exciting outcomes of the Presage study and simulator trials is a new concept for our Citation approach and landing SOPs that distinguishes between “goals” and “limits.” Many runway excursions result from approaches that are either unstable or become unstable after the approach gate at 500 feet. The existing “goals” for a stabilized approach (for example, the speed goal of $V_{ref} -5$ to $+20$ at 500 ft) do not provide us with a “yellow caution zone” where we can continue and attempt to correct an instability that doesn’t quite meet the goal, while committing to discontinuing attempts to “fix it” upon reaching a new “limit point.” Because the goal and the limit are currently set at the same point, pilots have to make an instantaneous decision to go around (or not) at the approach gate. Our working group established new “limit boundaries” past the existing approach gates that give clear go-around criteria. At the Convention, Presage will present the findings of the study and we will introduce the new SOPs for approach and landing. We anticipate full integration of these new SOPs, including training to them with a new curriculum for our simulator sessions, to take the next 12 to 18 months. We are excited about this new “Safe to Land” initiative, as the results could be a real game-changer for the light jet community.



Hand in hand with the Presage Go Around Decision Making study, we have continued our initiative to standup a cost effective FOQA program (Flight Operations Quality Assurance) or flight data monitoring. We have had 10 CJP volunteers involved in a beta test of a prototype system to collect data. These members have now flown collectively some 650 flights, allowing us to aggregate data and assess its accuracy and usefulness in feeding back flight results to the pilots. Of particular note, we used the data from their 650+ approaches to help us make “reasonableness checks” on the limit boundaries that the go around study working group established. One interesting data point: of the 650 approaches recorded in the beta test to date, the touchdown point for 270 of them fell between 200 and 1000 feet down the runway, another 220 fell between 1000 and 1500 feet and 70 were over 1500 feet. *None were beyond 2500 feet*, a very good trend! We had 90 of the total where the touchdown parameter didn’t register in the data, so we still have some work to do with our system, but these initial results are encouraging and should lead to a system that can help us all. We’ll report out more on the status of the initiative at the convention.

Fly Safe!

Charlie

CJP Members Volunteer to Develop, Test Approach & Landing SOPs

by David Miller, Director of Programs and Safety Education

Ten volunteer CJP members met over three days in early August at the FlightSafety Textron Aviation Training Wichita East Pilot Learning Center to develop new Standard Operating Procedures (SOP’s) for approach and landing operations. The CJP Safety Foundation, along with financial support from Garmin, Textron Aviation, FlightSafety, Air Charter Safety Foundation, and NBAA, facilitated a groundbreaking study into why and how pilots of single pilot jets make go around decisions.



The Presage Group of Toronto, Canada, who are leaders in airline decision making research, facilitated the meeting. Presage was represented by Martin Smith, PhD. CEO/Co-founder, Captain Piyush Gandhi VP Operations and Business Development, and Bill Curtis, Head of Aviation.



CJP volunteers travelled from across the country at their own expense to provide input as the group tested new concepts to address approach and landing challenges. The Working Group included:

- Walter Berry
- Jonathan Bailey
- Randy Broiles
- Blake Curd
- Debby Curd
- John Olsta
- Peter Nisbet
- David Gasmire
- Larry Stoddard
- Chris Hoke

Supporting the Working Group activities were:

- Charlie Precourt, Chair CJP Safety Committee
- David Miller, Director of CJP Safety Education
- Chris Provencio, Director of Flight Safety and Security, Textron Aviation
- Jack Tessmann, Director of Training, Wichita Cessna Learning Center

The Working Group concluded their efforts with several Zoom calls later in the month to produce new SOP's which were evaluated in FSTAT's Mustang, CJ3, and CJ3+/M2 simulators in late August and early September.

"Go Around Test Pilots" Evaluate New SOPs

More than 20 additional CJP volunteers travelled to Wichita in late August and early September to participate in simulator trials of proposed new CJP/Presage SOPs.



These new approach and landing procedures were designed specifically for single pilots of Citation jets and scientifically tested during more than 200 approaches. Presage subject matter experts (SME's) captured data from each pilot as they made multiple approaches during varied weather conditions.

Senior leadership members of FlightSafety - including President and CEO Brad Thress; EVP of Safety Richard Meikle; EVP of Sales, Nate Speiser; FSTAT CEO Rich High; and Director of Internal and External Communications Staci Perkins, participated in the event.



In addition, members of the aviation press were on hand to report on the simulator study including, Matt Thurber, Editor in Chief at *AIN* Publications; Tom Haines, Editor in Chief of *AOPA* Publications; and Dick Karl, Contributing Editor at *Flying* magazine.

CJP volunteers included:

- Chris Stalica
- John Springthorpe
- Marc Dulude
- Patrick Kane
- David Farr
- Kirk Samuelson
- Mitch Januszewski
- Nick Guida
- Frank Gilardi
- John Breslow
- Craig Carson
- Kirby Ortega
- Steve Seidman
- Rick Hamilton
- Randy Lane
- Jeff Greenberg
- David Ostrowe
- Clint Newell
- John Hinshaw
- Eric Opiela
- J.R. Spalj
- D.J. Dondelinger

The widely anticipated results of the research will be presented at CJP's Annual Convention on October 21 in Indian Wells, CA.

Mentoring Matters: The Need for (Less) Speed

by Neil Singer, CJP Safety Consultant and Master Instructor



Some of the issues new jet pilots must confront fall squarely into the category of "nice problem to have." Looming large among these is the need to control the airspeed of a machine that is endowed with quite a bit more power relative to its weight than any piston aircraft, and even most turbo-props. Between performance and regulatory limits, a jet pilot needs to be much more on top of airspeed than his piston brethren.

It's usually a pleasant surprise to find, for example, that even the lightest of light jets will quite happily accelerate through redline speed at cruise thrust when leveling off at lower altitudes. In the case of airplanes with particularly high thrust to weight ratios, even at the aircraft's ceiling cruise thrust may yield a speed over redline. But at least structural limits are clearly marked on the airspeed indicator. More insidious are the regulatory limits of FAR 91.117, which vary with lateral and vertical position.

First off, below ten thousand feet MSL, indicated airspeed must be kept below 250 knots. It's easy to inadvertently exceed this limit during a continuous descent from an altitude above 10,000' to one below. The descent is initiated, typically in the vertical speed mode of the autopilot, and power is reduced to maintain a speed comfortably under red line. For many light jet aircraft, that redline can be well over 250 knots, so what was an acceptable descent at 10,100' becomes violation inviting at 9,900'. The pilot must have the situational awareness to reduce power well in advance of reaching 10,000', so that as the plane crosses through 10,000' the speed has decreased sufficiently.

91.117 specifies two other speed limits: one when at or below 2500' AGL within 4 nautical miles of a Class C or D airport, and one when flying under Class B airspace. In both situations indicated airspeed must be kept at 200 knots or less. The Class B restriction is a particularly easy trap to fall into, as keeping track of the lateral and vertical boundaries of Class B airspace can be a chore when flying into an unfamiliar area. There is no 200 KIAS limit within Class B airspace, so again a descending pilot maybe perfectly legal at a given altitude, then just ten feet lower be 50 knots over the speed limit as the plane pops out of the Class B.



Takeoff represents yet another chance to exceed the 200 KIAS limit. Departing from a Class C or D airport, a pilot is assigned a level off at 2,000' AGL. Most jets can easily exceed 200 KIAS during climb unless the pitch is set uncomfortably high or power is reduced below the climb thrust setting. Given that the level off at 2,000' often occurs just as a frequency change and/or new heading assignment is occurring, it's easy to see why this limit is struggled with by nearly all pilots adjusting to jet flying.

Helpful in this situation is using the technique of a thrust-commanded climb rate. Using the autopilot's IAS hold mode to command a speed slightly under 200 knots, the pilot then reduces thrust to maintain a vertical speed of 1000 feet per minute or less. As the airplane levels off thrust is further reduced to maintain speed. By decreasing the vertical speed well prior to level off, there will be more time to react to the plane's acceleration and reduce power accordingly.

Just don't complain to your piston flying friends about how hard you need to work to keep the speed down.

(Neil is a Master Instructor, corporate Bombardier Challenger captain and designated examiner in the Phenom 100/300 and Citation 525 series. He is also a regular contributor to the "Turbine" section of AOPA Pilot magazine.)