

FLIGHT TEST NEWS



Published by the Society of Flight Test Engineers

Emerald Coast Eateries

I reached out to the Emerald Coast chapter of SFTE to plan for the upcoming symposium and get some recommendations for [Lee Bell](#). In particular, I asked about things to do, places to eat, and the like. Nathan CAP'N Cook and Jim Yurack, chapter president, offered these recommendations.

What restaurant should I try?

For the ultimate “tourist trap” experience, with some excellent steak, wine, and beer, McGuire’s Irish Pub, US 98, Destin. For seafood and that “open to the beach” feel, The Back Porch, Hwy 98, Destin. For breakfast any time of day, or dessert, The Donut Hole, Harbor Blvd, Destin. For craft brewing and great burgers, The Craft Bar, Commons Drive, Destin.

What attraction is a must see?

I will emphasize one which really is a “must see” and that is Henderson Beach State Park. It is over a mile of undeveloped beach/shoreline. You get to see the natural state of the beach from white sugar sand dunes, wild grasses, and local wildlife. Our selected venue, the Henderson hotel and resort, is located right beside the park, and attendees who stay at the hotel can receive passes to enter the park. The hotel has bicycles to rent so a guest can ride from the hotel and into/around the park.

The Air Armament Museum, outside the West Gate of Eglin AFB, is an excellent place to see the history of US munitions, as well as one of the best static displays on the planet, including an SR-71 & B-52.

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The Destin Harbor Walk is a year-round carnival centered on the Gulf fishing vessels. The carnival includes street performers, live bands, zip lines, and more.

What else should I know about the creature comforts of the area?

Destin is a destination for those wanting to have a relaxing good time, with plenty of bars, restaurants, and outdoor venues. The Henderson is near Destin Commons Mall, which is an open shopping mall with a movie theater, a Starbucks, and World of Beer. Everything else is beside Hwy 98 that runs along the Gulf Coast.

The Best of Times

[David Gollings](#)

Note: Dave was a colleague for a short time, during which he was a consultant for Honda Aircraft Company. He has since moved on, but during that time, he shared this story and gave me permission to share it with SETP and SFTE.

In April of 1980 the first prototype of the Canadair Challenger crashed in the Mojave Desert, killing one pilot while two other crewmembers escaped with minor injuries. To steal a thought from Dickens, “It was the best of times, it was the worst of times...” a spring of Hope turned into a winter of Despair. But events leading up to this tragedy started several years earlier, so we should start at the beginning.

The Canadair Challenger (once known as the Learstar 600) got off to a rocky start when the original designer, Bill Lear, who was critical of Canadair’s changes to his design, publicly referred to it as “Fat Albert.” Short and fat as it was, the name stuck and Bill unceremoniously walked out on the project. During the course of the next decade Canadair remained a quasi-government company and nearly brought down the entire Canadian government with cost overruns, until Bombardier came to the rescue with a privatization bid. In spite of this ignominious beginning, Fat Albert morphed into a 90 passenger Regional Jet and turned out to be a financial success as well as a thing of beauty. Although Bill was later deemed the Father of the Regional Jet (or RJ), he did not get to see its eventual success or even to see it fly—he passed away six months before the first flight of the Challenger.



Challenger Number One, aka “Fat Albert”

In 1978 Canadair had been out of the airplane manufacturing business for many years. Under the auspices of the Chief Test pilot, Doug Adkins, Canadair set out to establish a world-class flight test center from the ground up

as well as a first class test crew, of which I had the honor to be a small part. Initially there were only four test pilots, but that soon expanded to an even half-dozen test pilots and four Flight Test Engineers when three test aircraft were all flown.

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I first met Norman Ronaasen in Montreal in the fall of 1978. Instantly likeable, and in the words of Canadair's official historian Ron Pickler, Norm was "a charming, unassuming gentleman." Like many Canadians I have known, Norm had an enormous sense of humor and in my experience, he was one of the best engineering test pilots ever. He was a graduate of the Empire Test pilot School and was one of two RCAF pilots selected to fly Canada's pride, the AVRO Arrow. Unfortunately for Canada (and Norm) Prime Minister Diefenbaker canceled the Arrow project before his first flight. Norm was recruited to fly the Challenger early in 1978 and was the first of a small cadre of Challenger test pilots on Canadair's staff. I was hired shortly afterwards, and so it happened that we both wound up in Montreal to fly Canada's first entry into the fast-paced world of corporate aviation.

From its inception Canadair felt it best to conduct the Challenger flight testing in a more hospitable climate than Montreal, not only for weather considerations but to be far removed from government and factory politics. The choices boiled down to the RCAF test center at Cold Lake Alberta and the USAF test center near Mojave, California. Since the bulk of initial aircraft sales were in the USA and in light of Cold Lake's formidable weather, the choice was obvious. So off we went to the Mojave Desert.

The pace of flight test was fast and relentless for two years until we were all pretty much exhausted. Five-thirty A.M. seems like an ungodly time to start work, but that is the world of flight testing. You do it because you love it, and it's unlike any other kind of flying. Somewhat the opposite of the old saw about airline flying: "hours of sheer boredom punctuated by moments of excitement..." By April 1980, Canadair test pilots had been doing it for over a year, seven days a week. Just one price you have to pay to be working at something you really enjoy. And like many things, flight testing is best done early in the morning.

As do most days in the Mojave Desert, April 3rd dawned bright and clear, a

splendid day for flying. I had arrived before sunrise expecting to fly systems test on Challenger Serial Number 1002, the second prototype of the Challenger wide-body business jet. This plan changed when another pilot telephoned from the nearby ski resort, snowed in, and I offered to fill in as the copilot for him. The planned flight included a series of stall tests on the first prototype, Serial Number 1001, most of which had been done many times before.

Stall testing is an integral part of defining the flight envelope of a new aircraft. It consists of slowing the aircraft to the point where the wings no longer produce enough lift to maintain flight. It is not inherently dangerous, but it can be if the airplane's behavior at stall is not readily controllable. In that event artificial devices may be used to prevent entering this flight regime. Wind tunnel tests predicted this might be the case with the Challenger, but the certification agency (Transport Canada) had decreed that this flight regime must be fully explored before any such artificial devices could be used. This was the order of the day, and we should have protested more strenuously.



Challenger Prototype Number 4

During many prior stall tests we had performed in Challenger 1001 loud, metallic 'banging' sounds were heard, and we thought the noise was coming from somewhere inside the airplane. So on April 3rd, after completing our twelve planned stall tests at 18,000 ft, we proceeded to investigate the cause of the noises. The first attempt involved a slower than normal stall approach in order to try to determine where the noise was coming from. This time, just as the same loud noise occurred, the aircraft angle of attack suddenly increased and the nose pitched up out of control. None of the flight controls responded and one engine flamed out as the airplane entered what is known as a "deep stall." Fortunately (or not, as may be the case) the aircraft was equipped with a recovery parachute which I deployed, causing the nose to pitch down sharply and restoring control. At this point it should have been a simple matter to jettison the recovery parachute and return to base.

Of course there would be no story if that had happened. And so in spite of a carefully engineered redundant jettison mechanism, the parachute failed to jettison.

The cause of this failure has been variously attributed to improper hydraulic fluid in the primary actuator and loss of electric power to the back-up explosive bolts. No one knows for sure. With clairvoyant hindsight, the design was later made more reliable but never had to be used again.

The cause of airplane accidents has been compared to a game of dominoes, in that the first one to tip begets a chain reaction that goes on until the last domino falls. No one piece in itself is the cause of the accident but all it takes is one domino to start the chain. (In our case, without the loud banging noise the accident would not have happened.) The bottom line is this: when things start to go to heck they go, not in a hand-basket, but by the bushel. And it is never a single thing that causes an accident.

During all this excitement, my attention had been directed inside the cockpit trying to sort out the chute jettison problem; by the time we were descending through 6000 ft AGL, I was still oblivious to our altitude. (The absolute minimum bailout altitude for such an event was to have been 6000 ft.) Our Flight Test Engineer, Bill Scott was situated in the cabin monitoring altitude and his call of "6000" brought us to our senses, and Norm immediately called for bailout. Whereupon Bill looked forward to me in utter disbelief and I nodded for him to get out. His main duty then was to get to the rear baggage door, open it and jump out – which he did with great enthusiasm. Not far behind, I watched him disappear out the door and observed with some curiosity as he disappeared upwards. It was at this point things began to get really strange.

I dove head first through the hatch, tumbling head over heels until spread-eagle, and I wound up face towards the ground. For a brief moment I looked at the trees getting bigger and bigger, when I thought to myself, "Wait, there are no trees in the desert...those are small cactus...you must be very close to the ground," whereupon I pulled the ripcord like the starter rope on a lawn mower, and life started over.

The shock of the opening parachute was nothing compared to what was to follow. Hanging in my parachute risers, I had full view of Challenger One descending, wings level into the desert floor. It was as if a camera was running in slow motion, the way the mind slows things down in a crisis situation. You hear about this phenomenon but can never really appreciate it until seen through your own eyes. The brain's time-tracking mechanism slows down and a matter of a few seconds seems like minutes.

To my horror, Challenger One appeared to slowly slide onto the desert floor with a great fireball of billowing black smoke rising from it. The force of the explosion tossed sheets of aluminum and what were formerly bits of the airplane high into the air like debris in a tornado.

Suddenly, just at the moment my parachute fully opened, the ground rose up to meet me with a thump and crunching of bone as my foot suddenly was headed in a direction opposite to the rest of me. As I lay there trying to collect my thoughts, I noticed Bill Scott (our Flight Test Engineer) floating slowly down in his parachute. Still in a brain time warp, my mind could not comprehend why he was still in the air when he had clearly jumped out before me. Later analysis showed that Bill had exited around three thousand feet, while 20 seconds later I had gotten out at less than a thousand feet.

Adding to the disorientation was an extreme descent rate, estimated by radar tracking at 17,000 feet per minute. The brain cannot correlate these kinds of rates with prior experience, since the airplane attitude had been nearly level. All told, the entire event took place in a little over a minute. It was later estimated that my parachute opened at about one hundred feet. Norm had remained in his seat until the rest of the crew was safely out, which cost him his life. He did manage get out of the airplane but his parachute did not have time to open. And the airplane we had come to love and hate at the same time was no more.

In thirty-odd years of flight testing I have been in numerous "uncontrolled flight" situations, but almost always they were accompanied by wild gyrations and excessive g-loads. This particular event was unusual in that the airplane remained wings level, with the nose just slightly above the horizon and descending at a rate that was beyond comprehension. Flight control was regained when the anti-spin parachute was deployed but, with one engine failed it was impossible to maintain flight.

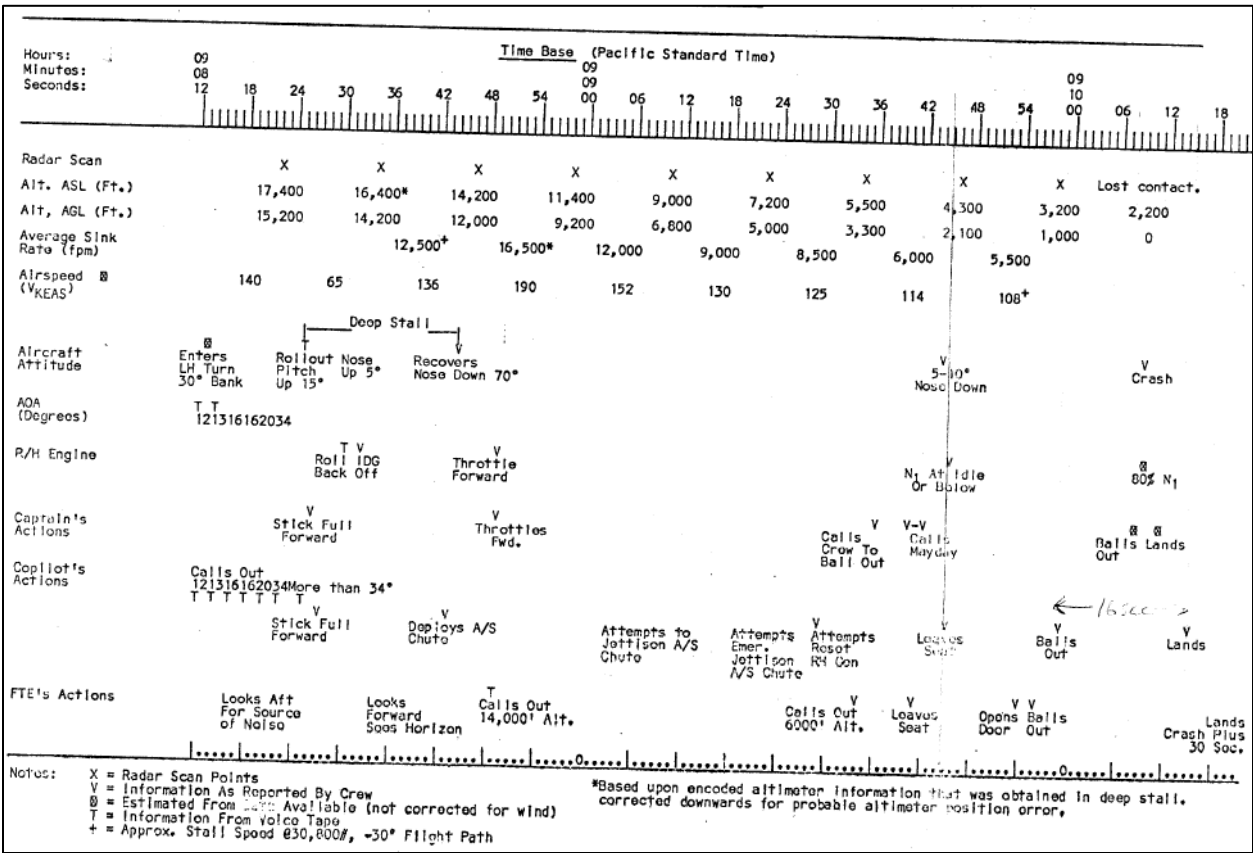
As luck would have it I observed a small airplane circling over the crash site, which turned out to be Dick Rutan flying a local test mission. Dick alerted the Edwards Air Force Base control tower and coincidentally, the base surgeon just happened to be airborne on a rescue helicopter training mission at the time. So within minutes I found myself in the capable hands of not just paramedics but the Air Force Base Chief Medical Officer.

Epilogue

On this, the last day of his life, my friend Norm Ronaasen had the calm presence of mind to call "BAILOUT" which most definitely saved my life and Bill Scott. Norm then issued a MAYDAY call on the radio and remained at the controls until Bill and I were safely out of the airplane. This turned out to be the ultimate sacrifice, for at that point he was too low to successfully bail out. There is something Biblical about such an act, something that words cannot adequately describe. Bill and I have remained close over the years and every April 3 we get together to remember the man who saved our lives.



Challenger One in the Mojave Desert



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