

# There I was . . .

. . . flat on my back, out of airspeed and out of ideas.

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I first heard about being, “. . . on my back, out of airspeed and out of ideas . . .,” as an U.S. Air Force cadet with zero hours in my logbook. For greatest impact, you say it with your left hand inverted above as your right is aimed at it from below, ready to unload an imaginary spray of bullets. We cadets howled with laughter whenever we heard these kinds of fighter pilot yarns, but I don't think a lot of us understood what it meant. It would be a few years later when I found myself in an Air Force airplane upside-down, at a very low airspeed, worried about my wingman running out of speed and having us both fall out of the sky at the same time. Note to self: don't do that again!

And that is the point. We pilots like to tell stories about things that happened to us as a way of (1) entertaining our friends, (2) showing how brave we are, and, perhaps, (3) helping our fellow pilots to avoid a similar situation. Many pilots look upon their past mistakes as “dirty laundry” and the less said about it the better. I think we would all benefit from airing some of that laundry. Learning from your mistake can help others avoid a similar fate. Psychologists will tell us that we learn more easily and remember with greater clarity from a well-told story than from a sterile textbook. In the classic military aviator sense, these stories are told in the “ready room” with fellow aviators ready to laugh, commiserate and learn. But these tales can be equally impactful if shared one-on-one. You can find them in published sources, too, including *Business & Commercial Aviation* (BCA) magazine. The story that had the greatest impact on my flying career actually came from a television interview. But my favorite comes from an astronaut.

## From the Ready Room: “Carrier pressure”

U.S. Navy Captain Jim Wetherbee, now retired, was a NASA Space Shuttle



German fighter pilot ace Hans-Joachim Marseille, “talking” with his hands, 1919-1942

astronaut with six trips in space, five as the commander following service as a Navy pilot. He writes in his book, *Controlling Risk in a Dangerous World*, of an episode in 1979 as he was returning from his first deployment aboard the USS John F. Kennedy. He launched from the aircraft carrier heading for Naval Air Station Cecil Field in Jacksonville, Florida, and for his first landing on dry land in seven months. However, “the runway ignored its orders and hosted a thunderstorm just prior to my arrival.”

Notably, his aircraft was still set up for carrier operations, meaning the tires were filled to much higher “carrier pressure” so as to withstand the excessive forces during arrested landings — what carrier pilots acknowledge are “controlled crashes.” The downside of this higher pressure is less tire contact

area where the rubber meets the runway, resulting in reduced friction and less steering control during landing and rollout.

When landing on a wet runway with carrier pressure, pilots are expected to drop their tailhooks to make arrested landings. But since this would close the runway until the arresting gear is reset, pilots often choose to leave the tailhook retracted over the approach end to see how difficult aircraft control is. Some runways are set up with another arresting cable for what you might call a “second chance.”

Well, Wetherbee landed his airplane, tailhook retracted, and had no problems for the first 6,500 ft. of the 8,000-ft. runway. After he passed the long-field arresting cable, which represented his last opportunity to drop the hook, his automatic antiskid system began to shunt hydraulic pressure away from his brakes to prevent lockup as the tires were beginning to hydroplane over the wet surface. As he puts it, “I made a bad decision on the wet runway and suddenly lost control of my \$3 million, single-seat, light attack, A-7 Corsair aircraft.” He turned the antiskid system off, causing one tire to grab while the other continued to slide.

At that point, “My airplane immediately turned ninety degrees to the left, and I was skidding sideways while continuing to track straight down the runway at forty knots, with my right wing pointed forward. I found myself stable yet out of control, looking over my right shoulder at the end of the runway approaching quickly, without slowing down. After a few seconds, I realized my main wheel was headed directly for an arresting gear stanchion at the runway threshold and mud beyond that. If the wheel dug in, my sideways momentum would flip the airplane on its back. A hilariously good story for other pilots in the ready-room and at my wake.”

“As I was skidding sideways, heading for an embarrassing death,” he continues, “a colorful tale I heard six months

earlier during our deployment flashed into my mind. In an instant, that story helped me save my airplane.”

**The tale:** “An F-14 Tomcat pilot was telling us about a dumb action (his words) he took during his landing on a wet runway with carrier pressure in his tires. He blew a tire, lost control, spun around, and somehow ended up traveling straight along the centerline of the runway but backward. Without thinking, he reactively jammed both brake pedals to the floorboard. Bad idea. The rearward momentum of the center of gravity popped the nose of his aircraft up until the tail feathers of his exhaust pipe scraped along the runway. His other main tire blew. Both brakes seized, and the locked wheels ground themselves down to square nubs, as his airplane came to a stop in a spray of sparks. Through all the laughter in the wardroom, he admitted, ‘Since I was going backward, rather than stepping on the brakes, all I had to do was go zone-5 afterburner on both engines.’ At the time, I joined the other pilots and laughed just as loudly at his incompetence. On the inside, though, I silently concluded I never would have thought of that now-obvious solution.”

Capt. Wetherbee continues: “Back to my impending death. Without forming any words or taking any time, my brain recalled the relevant part of the Tomcat driver’s story, and the automatic processing in my mind quickly invented a solution. I waited until I was

approaching the final taxiway in my sideways skid. As the off-ramp reached the two o’clock position relative to my nose, I applied full power to the engine. The big, lazy turbofan spooled up with its usual delay, and by the time the taxiway was at my one o’clock position, sufficient thrust was beginning to build to push my airplane toward the taxiway. The plane exited the runway straight onto the centerline of the last taxiway before disaster. I retarded the throttle quickly, and the A-7 gently skidded to a stop, as if I had planned my graceful slide all along.”

So, he credits that Tomcat pilot for saving his life that day. For those of us who make a living landing only on solid land, the chances for this kind of excitement is thankfully reduced. However, not every war story has to save a life to be useful, some might merely save your career.

### From One Pilot to Another: “That Sinking Feeling”

During most of my Air Force career my only involvement with the Lockheed C-5 Galaxy was as a customer. Many of my airplanes required extensive support equipment and the best way to get that from one part of the globe to another was with heavy airlift aircraft. My first real interaction with C-5 pilots was at the Pentagon, where I was a Program Element Monitor (PEM). That position

involves control of operating, maintenance, and acquisition funding for various weapon systems, such as aircraft. Our office had a PEM for each major airlift aircraft, including the C-5.

The C-5 PEM was a very smart officer who had a good reputation in the office and had an appealing, easy-going nature. Every now and then someone would ask if he had “that sinking feeling” and there would be a few laughs. Finally, I had to ask. He reluctantly explained.

He recalled his time as, “a pretty new C-5 aircraft commander but I was getting more than just the normal flights so I was thinking that not much was out there that could surprise me. I got sent to a small airport in Central America that I had never been to but Mother MAC [Military Airlift Command] said it was okay, so we went. We flew down empty; our job was to land, pick up a load of Army tanks, and then takeoff and come home. It was going to be a long day, but not too bad.”

“We landed and I taxied to the ramp where I saw the tanks were waiting for us,” he continued. “After we shut down, the load masters got busy loading the tanks and the engineers went downstairs to do whatever it is engineers do. I was alone in the cockpit doing paperwork and heard some noises I had never heard before. I looked outside the cockpit and I got this sinking feeling. I ran downstairs and saw that the tanks had been loaded and then I went to the ramp where I saw every one of our wheels

JIM WEATHERBEE



A-7E Corsair II of VA-146, Nov. 16, 1974



C-5 Galaxy taking off from Sierra Leone

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were sunk into the tarmac about half a foot.”

He explained that the MAC flight planners saw that a C-5A had been there before, dropping the tanks off, but in that instance the aircraft was not allowed to leave the runway until the tanks had been offloaded. Nobody told him that. But the damage was done, and he would forever be known as the “Major with the sinking feeling.”

Years later, many years later, I flew a Gulfstream G-V into Rhodes, Greece. I had been there before, but never to the ramp we were assigned. Looking around on our ramp I didn’t see any other airplanes. I asked our handler about the strength of the ramp and he told me to relax, they once had a Boeing 737 on that ramp. I had the presence of mind to ask when -- five years ago, was the answer -- and was starting to resign myself that there wasn’t much left to do.

However, in looking at the adjacent ramp I saw what had to be the oldest Boeing 737 I had ever seen since the Air Force. It had to be a -100 model. “Like that one?” I asked. “Yes,” he responded. I looked to my fellow pilot and said, “I have a sinking feeling.”

“I am worried about the pavement strength,” I told our handler. “We need to go to the main ramp or find another airport.”

“Do not worry, captain!” he said. “We have metal plates for your Gulfstream, we can put them in front of the wheels and tow the airplane on top of them. We do this only if the captain asks for it.”

“I’m asking for that,” I said. Within a few minutes a forklift came by and lowered a metal plate in front of each main gear. The plates were each an inch thick and 10 ft. by 10 ft. square. That night I found an Internet connection and got smart about Aircraft Classification Numbers (ACN) versus Pavement Classification Numbers (PCN). (See “Landing Assured, Departure Not,” *BCA*, March 2015). Our G-V had a higher ACN than that old Boeing 737 because our wheels are more narrowly spaced on each landing gear leg and between the left and right gear. The metal plates

significantly lowered our ACN. Seven days later our airplane was where we left it. We fueled, and we left.

Now the following statement is pure speculation on my part. But I like to credit Major Sinking Feeling with helping me to avoid a similar fate.

### From My Favorite Magazine: “Cross With Care”

We often think that the most relevant advice about how to fly airplanes has to come from a textbook or a flight manual, but those sources aren’t always up-to-date in the case of the textbook or complete in the case of the flight manual. There may be no better example of this than with handling crosswind landings.



Crosswind landing crab sequence, MROC, 21 Feb 2012,

BERNAL SABORIO

Our June 2015 issue tackled this condition head on in an article titled, “Cross With Care,” written by yours truly.

I got the idea for the feature while holding short of Runway 19 at New Jersey’s Teterboro Airport (KTEB), and watching a Gulfstream G550 landing. The pilot was side-slipping the airplane with a healthy bank angle and I was wondering if he was going to somehow avoid hitting a wingtip before touchdown. In the last few seconds he leveled the wings, the airplane drifted downwind ten or twenty feet, and he landed. It was a messy day to land but using the wrong technique didn’t help.

I checked the Gulfstream G550 flight manual and was surprised to see the crosswind landing procedure was gone. I called Gulfstream’s top test pilot who

dug into the matter and discovered it was a mistake and vowed to restore the missing pages. But along the way he confirmed: the correct way to land a Gulfstream G550 in a crosswind is to maintain a crab until approaching touchdown at which point rudder is applied to align the aircraft fuselage with the runway and opposite aileron to achieve zero drift. Some call this “kicking out the crab” or simply a “de-crab.” In any case, it is the best method to avoid striking a wingtip which can happen with only 7 deg. of bank in that airplane.

When “Cross with Care” was published, two things happened: It received good reviews and I received a lot of emails from pilots who were very surprised by what they had read. It seems they had been taught since Day One to always land wing low. That is the right procedure for many airplanes, but not all.

A year later I got invited to lunch by an avid *BCA* reader who wanted to thank me for our publication and one particular article. He flew for a large Gulfstream G650 flight department in Europe where every pilot loved flying the airplane except in gusty crosswinds,

which he described as “hellish.” I told him that I thought the airplane was quite docile in a crosswind. “It is,” he said, “but only if you know the correct procedure!” None of their pilots had ever heard about the de-crab method until they read “Cross with Care.”

### A TV Interview: “A Mentor I’ve Never Met”

In 1981, I was a USAF Strategic Air Command (SAC) KC-135A tanker copilot assigned to Loring Air Force Base, Maine. This was during the Cold War where most of our time was spent on alert, meaning we were confined to facilities so that we would be ready to hop into our airplanes and fly north to end

life on earth as we know it. Fortunately, that never happened and we spent more time on the ground ready to fly than actually flying. When we got tasked to airline down to Montgomery, Alabama to pick up a depot bird, I was more than ready to go.

The airline trip to Montgomery was pleasant enough. The hotel was passable and had a working room air conditioner and a television that got five channels, four more than what we got up in northern Aroostook County, Maine. I flipped through the channels and stopped on a shot of an airline captain with the obligatory four silver stripes on his shoulders talking with a model of a cargo DC-8 beside him. He had a grim look on his face and was talking about the scariest landing of his life.

"We were carrying a load of cattle," he said, "each in a small pen to keep them from moving about. You can't have cattle walking about the length of the airplane, the CG change would overwhelm the airplane's horizontal stabilizer." Cows and center of gravity? I was hooked.

"So, each cow is in his own pen, but they are standing. Or they were standing. We hit the runway so hard that all twenty-five cows broke each of their four legs. They all had to be destroyed." The captain fought back tears.

He went on to describe his DC-8, an older cargo version which had just been upgraded with an inertial navigation system (INS). He had never used one before but was fascinated by its ability to report the airplane's ground speed instantaneously. I had never seen an INS at that point in my short career, but I understood the principles. Three spinning gyroscopes equipped with force meters could detect aircraft movement. You ended up with very accurate heading and speed information.

"We were on approach to runway two-two-left at JFK," he said, "and the copilot and I bugged 145 on our airspeed indicators. That number was a little higher than normal, but we were heavy. Everything seemed normal, but the INS said our ground speed was only 100 kt. I wondered how that was possible. The tower reported the winds were right down the runway at 15 kt. It seemed to me we were missing 30 kt."

"Well," he continued, "at least it was right down the runway. So, I continued what I was doing, keeping the airplane flying down the ILS." This airline captain appeared to be in his 50s, was very well spoken, and had a grave calm about him. "Right around 300 ft., I felt

the airplane start to sink. The airspeed indicator was falling fast. I pushed the throttles forward a little at first, and then a lot. By the time we were at fifty feet I had them to the firewall but it was too late. I managed to get us to brick one of the overrun, but we hit hard."

"I've done a lot of soul searching after that," the captain said, "and I started to wonder about those missing 30 kt. What if the wind that day was greater a few hundred feet up than it was on the surface? When we lost all that headwind, wouldn't that have caused the sudden sinking?"

In 1975 this was a revolutionary thought. Even in 1981, when I heard this story, hardly anyone had heard of wind-shear, much less used the term.

"So, I thought," the captain concluded, "if you know the magnitude of your headwind on the runway, and if you know the magnitude of your headwind in the air, why not come up with a minimum acceptable ground speed on approach?"

It was brilliant. He had conveyed a method of beating this kind of wind-shear. I logged it all away for future use.

The next morning, we showed up at the plant at 0900 as ordered and were told our KC-135A would be ready soon. They let us onto the airplane about 1200, but the paperwork wasn't ready so we had to wait. They let me into the flight deck to stow my gear and I spotted two new boxes, one on each side of

the cockpit. I recognized them immediately, inertial nav systems. In a box in the cargo compartment I found a 100-page instruction manual and while we waited, I read. It was good stuff.

The paperwork was eventually completed and our airplane was released. I hopped into the right seat and turned the INS to "align," and punched in the latitude and longitude. As the inertials started to count down their alignment I could hardly wait.

By the time we made it off the ground, it was already pretty late. The INS were counting up the latitude and down the longitude as we made our way northeast. I didn't figure out the waypoint system yet, so all I had was the orange glow of the lat/long on one side of the cockpit, and an instantaneous readout of our magnetic course and ground speed on the other. Still, it was pretty cosmic.

About an hour south of Loring, I got the weather via HF phone patch. "It sounds bad," I told the aircraft commander. "They are saying the winds are 350 at 40, ceiling is 200 ft., right at minimums. Forty knots of wind, I don't think I've ever seen that before."

The aircraft commander sat in his pilot's seat thinking. Finally, he keyed the interphone. "I think it's time for some copilot training tonight, you want the landing co?"

"Sure!" I said. As we got closer the automated weather report started coming in. The winds were still reported to

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Boeing KC-135A in depot maintenance, Tinker AFB, Oklahoma

be down the runway but now they were up to 50 kt.

The command post frequency, UHF 311, was usually reserved for the pilot. But I toggled the mike anyway. “Has anyone landed recently?” I asked.

“Just one,” they reported, “another tanker. He said the winds were challenging.” I wasn’t really sure that added anything to my knowledge. Fifty knots of wind! At least they were right down the runway, no crosswind controls required. But fifty knots!

At around 5,000 ft. and turning to align with the instrument landing system, I was at 250 kt. and getting ready to slow for landing gear extension. My normal timing cues were not working. It was taking forever to get to the glideslope intercept point.

Why were things happening in slow motion? I looked down to my INS and saw the answer: our ground speed was only 110 kt.! How was this possible? I was still cruising along at 250. I didn’t know the INS could give me a wind readout—I hadn’t read that far into the manual—but if I was indicating 250 kt. and my ground speed was 110, the winds at 5,000 ft. must have been 140 kt. I was going to lose 90 kt. somewhere between 5,000 ft. and the runway.

On television the previous night that airline captain cautioned to never let your ground speed get below the expected ground speed crossing the runway threshold. What does that mean? Of course, it means you should go around and find someplace else to land. But in our SAC-trained killer minds, that option never occurred to us. I couldn’t put it all together while hand flying the airplane with all that wind.

I lowered the landing gear when we intercepted the glideslope and let the airspeed decay to 200 kt. My ground speed was only 60 kt. It should have been 150 kt. based on the tower-reported winds. What would that DC-8 captain have done? He would have added the difference, that’s what.

I couldn’t add 90 kt. to my speed; I wouldn’t be able to get the flaps down. The limiting speed for our full complement of flaps was 180 kt. Mother SAC wouldn’t allow us to land with anything less than all the flaps unless there was an emergency situation. This wasn’t an emergency, was it?

I decided to fly the approach and landing at 180 kt., 45 kt. faster than normal. That should be enough. I was stable on glidepath and on course, 180 kt., about 400 ft. above the treetops. At 300 ft., I

spotted the first set of approach lights and then felt the airplane sink. The airspeed indicator was unwinding so fast I thought it was broken. Then, I firewalled all four engines. We continued to drop but the airspeed slowed its plummet and as the wheels kissed the runway the airspeed indicated we were at approach speed. We were on the ground so I pulled all four throttles to idle.

Three years later, the Air Force C-141 flight manual detailed a brand new idea when combating windshear. They called it the “Minimum Acceptable VREF” technique. Minimum VREF is found by subtracting the reported runway headwind from the aircraft’s expected speed crossing the threshold. If ground speed on approach goes below Min-VREF, add the difference to approach speed. If ground speed on approach goes above Min-VREF, fly target approach speed and expect a tendency to balloon and land long at best, a microburst at worst.

Years later the Air Force abandoned the technique, fearing the math would overwhelm most pilots and the safer course would be to preach “when in doubt, go around.” That, of course, would be the wiser choice in the case of a microburst windshear, but that wasn’t our situation that night in 1981.

I’ve been telling this story for 30 years now, perhaps with a tinge of regret. Regret that I never knew identity of that DC-8 captain; I wanted very much to contact him one day to thank him. I only caught the tail end of that TV show; I never caught his name or that of his airline. Truth is, I didn’t realize just how important this information was until the next day when it saved my life and that of my crew. Over the years I’ve made efforts to find out, but nobody seemed to know.

Then, in 2015, the editor at *BCA* asked me to write an article looking at windshear, and how we’ve progressed over the years. I pulled up the National Transportation Safety Board aviation accident report on the 1975 crash of Eastern Air Lines 66 and read about a Flying Tiger Line DC-8 captain who landed just prior to the accident airplane who worried about his ground speed and pleaded with ground control to change the active runway. I thought this might be the guy. I called the Flying Tiger Line Alumni Association and found out it was him, Capt. Jack Bliss.

The Flying Tiger Line Alumni Association historian, Capt. George Gewehr, wrote to me immediately. “The Captain you are asking about was Jack Bliss.

## Jack Bliss

Jack (John) Bliss “flew west” July 22, 2010. He was born in Minneapolis, MN Sept. 7, 1922 and lived in Kelseyville 22 years and San Pedro prior to that.

He leaves behind his beloved wife Patti of 55 years, six children, Roxanne Barry of Port Huneme, CA, Carol Ferguson of Grants Pass, OR, Merrilee Bliss of Aspen, CO, Michael Bliss and Kristianne Peake of Kelseyville, CA, and son, Jack Jr. of Grants Pass, OR, now deceased. Also



14 grandchildren, 17 great grandchildren, sister in law and husband Vicki and Gerry Winkle, brother in law Mike Johnston and many nephews and nieces. He is pre-deceased by his first wife Mary.

He served in the US Army Air Corps during WWII flying B24’s and B25’s.

He enjoyed a 32 year career as a Flying Tiger Line Captain and loved each airplane he flew from C-46’s to B747’s. His flights took him to every part of the world, visiting wonderful places and making many friends along the way.

He used his last years working on the “windshear problem” that has caused many airline accidents throughout the years and was determined to “give back” to the industry he so loved. In Washington D.C. he was referred to as the “Windshear Guru”.

Jack was a wonderful and inspiring man to all he met in life. He will be dearly missed by all his family and friends as a kind and gentle man who loved all of them and life immensely. Up in the clouds is where he belongs and where his heart is. We will always miss him. Private family services at a future date at Avalon Bay, Catalina Island.

LAKE COUNTY RECORDER OF KELSEYVILLE, CA

He flew west several years back, I’m thinking six years ago. If he were still here he would have loved to have heard your story. I have a newspaper clipping of him with an attached article to it. Just coincidentally I was at JFK when he landed. I had arrived from the west coast about forty minutes before Jack had landed. I had passed the very storm over the Sparta VOR that later hit JFK. When we were on the ground we were in the Tiger building and it hit us. It was a HELL of a thunderstorm and moving very fast. I was sitting in our operations office when his copilot walked in and sat down next to me. I was startled to see him and asked him, “Where in hell did you come from?” He said he just landed with Jack Bliss and that Eastern Airlines had crashed behind them. Jack had a load of live cattle on board his airplane. Needless to say, the airport was closed for a while until JFK could sort things out.”

I think it is very important for pilots to have mentors and aviation heroes. It gives us someone to aspire to and something to inspire us to learn and become better than we are. I’ve never met my mentor, but I will never forget him, either. His “There I was” story saved my life. Not every story has to be a life saver to be worthy of telling. But any story that adds to your fellow aviator’s ability to fly safely is a story that must be told. **BCA**