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NEWSLETTER

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SAFETYWIRE

AINsight: What's Going On with Bizav Runway Excursions? – Runway excursions account for a third of business aviation accidents**.**

(**Source:** Stuart "Kipp" Lau, AIN, October 16, 2025)

Runway excursions account for nearly one-third of all business aviation accidents—lately, these events are becoming all too common. Most troubling, barring a mechanical failure, these events are preventable when pilots understand the well-known risks and adopt best practices to mitigate these risks.

According to the NBAA Safety Committee, runway excursions are a "towering concern" and have been cemented on its list of top safety focus areas for nearly a decade. The FAA, NTSB, Canada's TSB, and other aviation agencies have all expressed concerns about runway safety, including runway excursions and incursions.

I, too, am concerned. What is going on?

Last month, I wrote about high-energy approaches after two business jets on one calendar day overran runways—only to be saved by EMAS. And one day before that blog was published, a Cessna Citation CJ4 overran a runway in Kentucky, broke through a fence, crossed a highway, and hit a house. Three weeks later, a CJ3 overran a runway—this time coming to rest on a golf course.

Let's look at these two events and revisit other topics such as preflight planning, in-flight assessments, decision-making, and landing techniques. In addition, we will dig deeper into industry best practices, such as guidance from the Citation Jet Pilots Association (CJP).

Off-road Citation Jets in Kentucky

The CJ4 was substantially damaged when it overran the runway at Kentucky's Mayfield Graves County Airport (M25) on September 18. The jet was unable to stop on the 5,002-foot runway and hit a house 708 feet past the end of the runway. The aircraft had substantial damage to its fuselage, wings, and landing gear; there were no injuries.

The FAA and NTSB are investigating the accident. Preliminary reports list the event as a runway excursion during landing. ADS-B data indicated a ground speed of 213 knots at 1,300 feet and 1.64 miles from the runway. The aircraft was both high and fast, suggesting an unstable approach and possible long touchdown. Weather at the time of the accident was reported as clear skies, 10 miles visibility, and light winds (less than 3 knots).

On October 7—less than a month later—the CJ3 overran 3,580-foot-long Runway 33 at Bowman Field (KLOU) in Louisville, Kentucky. The aircraft departed the paved surface of the runway, crashed through an airport fence, and came to rest on an adjacent public golf course. There were no injuries to the four occupants of the aircraft, but the aircraft sustained substantial damage to its nose gear and undercarriage.

According to reports, ADS-B data indicated that the aircraft left the end of the runway at 55 knots ground speed. Weather reported at the time of the event was IMC with a 900-foot broken ceiling, 2.5 miles visibility with heavy rain (+RA) and a direct tailwind of 8 knots.

Resources

As an operator of a turbine-powered business aircraft, it is recommended to download and review the following documents: FAA Advisory Circular 91-79B "Aircraft Landing Performance and Runway Excursion Mitigation," FAA SAFO 19001 "Landing Performance Assessments at Time of Arrival," and NBAA's "Reducing Runway Excursions in Business Aviation," a high-level guide on mitigating risks.

Another top recommendation is to join the owner-pilot group or association for your aircraft type. As an example, CJP offers specific standard operating procedures (SOPs) for pilots of Citations. Likewise, the Honda Jet Owners and Pilots Association provides solid guidance on runway safety to its membership.

In addition, depending on the type of operation, pilots must be familiar with the applicable regulations.

Step 1: Preflight Planning

In general, regulators require pilots during preflight planning to ensure that there will be adequate runway available for landing at the destination. In the U.S., preflight planning is covered by FARs 91.1037, 135.385, and 121.195.

For dispatch purposes, if operating a large transport-category turbine-powered aircraft “for hire,” the landing distance can be no greater than 60 percent of the available runway. If that runway is wet or slippery, add another 15 percent to the aircraft’s landing distance. These distances are calculated using the expected runway condition at the time of arrival, based on forecast conditions.

Pilots must understand the nuances (unfactored, factored, wet, etc.) of certified landing distance charts and tables contained in the aircraft flight manual (AFM).

As an example, wet landing distances are obtained through a mathematical calculation using a factor of 1.15 (15 percent)—there are no flight test validations here.

According to AC 91-79B, if there is moderate or heavy rain, use extreme caution. Analysis of runway excursions in moderate or heavy rain resulted in significantly lower braking coefficients than would be expected for “wet” runways. These events occurred on both grooved and non-grooved runways.

Here’s another caveat from CJP: be skeptical. These certified landing distances are based on the best landings performed by a test pilot, with no variation from speed or glide path, and maximum braking using new tires and brakes. Small variations in pilot technique can add hundreds or even thousands of feet to the landing distance.

Step 2: Landing Distance at Time of Arrival

Before landing, it is recommended—and required by some operators—that pilots assess the landing distance at the time of arrival. This guidance is independent of the preflight landing distance planning requirements.

SAFO 19001 provides guidance to operators on landing performance assessments at time of arrival. The document was published to assist operators in developing methods to ensure sufficient landing distance exists to safely make a full stop landing.

This assessment is based on real-time conditions to include runway contaminants, winds, speed additives, and touchdown points. It is recommended that the flight crew determine the most accurate landing performance assessment at a point in time to obtain the most current meteorological and runway surface conditions.

CJP Safe to Land

Next, using elements of CJP's "Safe to Land" initiative, I will analyze the recent CJ3 overrun at KLOU. Safe to Land is the result of an extensive study conducted by CJP and the Presage Group to refine stabilized approach criteria and landing procedures to prevent runway excursions. This guidance includes approach gates for approach stability (1,000 and 500 feet) and a go-around decision point (200 feet) during the approach, and establishing a touchdown point limit from the runway threshold (floating) and a lateral limit from the runway centerline (drifting).

For most Part 91 operators, CJP SOPs may be more restrictive. As an example, CJP recommends computing takeoff and landing data before every takeoff and landing using the manufacturer's performance data, and observing the following guidelines to provide adequate safety margins:

• Count no performance benefit for headwinds.

• If any tailwind is expected to exist, compute the penalty using 10 knots of tailwind component (do not interpolate).

Additionally, for landing, the computed required field length must be less than or equal to 80% of available landing distance if an electronic or visual descent path indicator is available to the landing runway, or less than or equal to 60% of available landing distance if no electronic or visual descent path indicator is available to the landing runway.

This accounts for variances in pilot performance based on the availability of vertical guidance to the touchdown zone. Safe to Land also requires pilots to calculate a touchdown point limit – any anticipated landing beyond this point requires a go-around.

Case Study: CitationJet CJ3 flight

Data for two runways are analyzed based on weather and the approach capabilities of each runway. In IMC, KLOU has two runways available—Runway 24 and 33—and each has an RNAV approach with a PAPI. Landing distance available (LDA) for Runway 24 is 3,856 feet, while the LDA for Runway 33 is 3,125 feet.

As previously stated, the weather at the time of the overrun event was 900 broken, 2.5 miles visibility, heavy rain, and winds of 150 at 8 knots.

In this exercise, the data presented in the following tables is based on a standard day (15 degrees C) with a dry runway. A wet runway would require an additional 15% of landing distance. Heavy rain with standing water on the runway would require significantly more distance to stop.

CE525B (CJ3) Weight	AFM Landing Distance (Zero Wind)	1.67 (*Runway without descent path ind.)	1.25 (*Runway with descent path ind.)	AFM x 1.15 [Time of Arrival]
12,750	2770	4626	3463	3186
12,000	2650	4426	3313	3048
11,000	2500	4175	3125	2875
10,000	2370	3958	2963	2726

Table 1. Cessna CitationJet CJ3 Factored Distance Required for Landing (ZERO wind, 15°C, DRY) [*CJP SOP]

Runway 24 analysis: A CJ3 could land on Runway 24 (LDA 3,856 feet) at any weight listed (dry conditions and no wind component) due to its greater LDA, instrument approach, and PAPI. Without PAPI or instrument approach, the aircraft could not land according to CJP SOPs.

CE525B (CJ3) Weight	AFM Landing Distance (10 kt TW)	1.67 (*Runway without descent path ind.)	1.25 (*Runway with descent path ind.)	AFM x 1.15 [Time of Arrival]
12,750	3340	5578	4175	3841
12,000	3200	5344	4000	3680
11,000	3020	5043	3775	3473
10,000	2870	4793	3588	3301

Table 2. Cessna CitationJet CJ3 Factored Distance Required for Landing (10 kt tailwind, 15°C, DRY) [*CJP SOP]

Runway 33 analysis: A CJ3 could not land on Runway 33 (LDA 3,125 feet) at any weight listed (dry conditions and 10=knot tailwind component) due to the tailwind and its shorter LDA.

This exercise illustrates the importance of analyzing landing performance on every flight, before beginning an approach and landing. Plans often change—runways can close, approach aids can go out of service, and the weather may deteriorate. Pilots must adapt to these changes, make smart decisions, and consider diverting to an alternate airport if the numbers don't add up.

Pilot Actions

According to AC 91-79B, several factors contribute to landing overrun excursions. All of these are cumulative and are under the direct control of the pilot:

Unstable approach. Safe landings begin long before the touchdown. Adherence to stabilized approach criteria is a must. If the approach becomes destabilized, go around. Operators should have a "no-fault go-around policy."

Threshold crossing height (TCH). Most aircraft are certified with a TCH of 50 feet. For every 10 feet above the TCH, landing distance is increased by 200 feet.

Extended flare or long landing. Braking on the ground is far more effective than attempting to bleed off energy in the flare. Most landing distances provided by OEMs are predicated on touching down by a specific point on the runway. Landing beyond this point invalidates any calculated landing distances.

High touchdown speed. A 10 percent increase in airspeed at touchdown increases the landing distance by 20 percent. A tailwind has a similar effect; for each 10 knots of tailwind, landing distance is increased by 21 percent.

Delay in deploying deceleration devices. Thrust reversers, ground spoilers, and brakes help decelerate the aircraft during the landing roll. Any delay in deploying these devices will affect landing distance. A two-second delay in deploying thrust reversers can add 200 feet to the landing distance. Less than maximum braking will generally add another 20 percent to the total.

Investigations into the two CJ overruns are currently underway. Final reports are typically published within 12 months.

Soon, I will write my 100th AINsight blog about safety events in business aviation, with an emphasis on reducing risk. Unfortunately, runway excursions happen all too frequently, and one-in-five of my blogs are related to reducing approach and landing accidents (below is a listing of some past topics). Runway excursions are preventable; following SOPs such as CJP's Safe to Land initiative makes sense, increasing the margin of safety and helping eliminate these accidents.

NBAA Business Aviation Insider: 7 Quick Business Aviation Tips for Safe and Successful Winter Ops

(**Source:** Business Aviation Insider, Nov/Dec 2024)

Every year, the onset of cold weather prompts a seasonal shift among business aviation flight planners, as they work to accommodate low temperatures. With that in mind, three experienced industry professionals offered insights and ideas aimed at improving safety and keeping operations going when temperatures plummet.

Audrey Lambdin, director of security and operations administration for Jet Logistics, Inc.; Abbie Fox, aviation dispatcher for Arthur M. Blank Family Offices and Michell Papontos, director of dispatch for Wheels Up shared a few of their best tips on winter operations.

Review Regulations and Policies

“We do recurrent training for all of our crews, planners and dispatchers to familiarize everyone with what the season brings,” said Papontos. “Things like, how to run the advisory numbers from the [aircraft flight manual], to what processes the crews use to determine if the airplane is ‘clean’ for departure, how to do a pre-flight contamination check, how slush can impact taxi performance and more.

"We also cover the four different types of deicing fluids," Papontos added. "What are their limitations regarding aircraft types and holdover times under different conditions? Pilots who aren't familiar with winter operations mistakenly think they're all the same."

Double-Check FBO Services

Experts also stress the importance of calling the arrival FBO directly to ensure they have the required services on-site. When it comes to availability of heated hangars or deicing services, things change daily.

"We double-check the services available, which sometimes means we will have to change the airport we use. That happens more often than you think," said Lambdin. "We recently went to Alaska and switched airports because the original destination didn't have deicing available, just in case we needed it. We like to err on the side of caution."

Consider Using Heated Hangars

However, in some cold-weather scenarios, the availability of deicing alone might not be the deciding factor.

"Today's aircraft systems seem to be a little bit more susceptible to cold-soaking than the older models," Papontos said. "We really prefer to put the aircraft in a heated hangar whenever possible. It's cheaper than deicing and doesn't require the crew to take all of the freezables off of the aircraft when it's parked outside.

"Even if we can't park it inside overnight, we ask the FBO if they can at least put it in the heated hanger for a few hours before departure," Papontos added. "That way, the systems are warmer, and the cabin is more comfortable for our passengers."

Passenger Safety on the Ground

Speaking of passenger needs, weather conditions frequently impact not just comfort, but also passenger safety.

"It's very important to communicate with your passengers and set their expectations up front regarding the weather and any backup plans in the event of a diversion," said Fox.

"It's also imperative that the scheduler/dispatcher speak directly with the FBO to confirm that all the services will be ready for our arrival so that our passengers can safely travel to their destinations," Fox added. "Our passengers need to know that even if we can land, the roads leading out may be closed or impacted by limited visibility. Passenger safety is always our No. 1 goal."

Delay Refueling

Another tip is to hold off refueling until immediately before departure, especially during extremely cold conditions.

“If you fuel the airplane out on a cold ramp and then park it in a heated hangar, the fuel will expand, and you can have overflows, which spill on the hanger floor,” Papontos said. “In very cold conditions, we try to hold off on fueling until the first flight of the day if we can.

Ensure Workers Have Proper Gear

Whether employees are pre-flighting or loading luggage, working in very low temperatures can be extremely uncomfortable. That’s why it’s imperative for operators to ensure that pilots have proper clothing.

“We supply our crews with gloves and multi-layer winter coats,” said Lambdin. “We also supply reflective vests for them to wear on the ramp. While they’re required at many airports outside of the U.S., they’re a great safety tool anytime you’re on the ramp when it’s dark.”

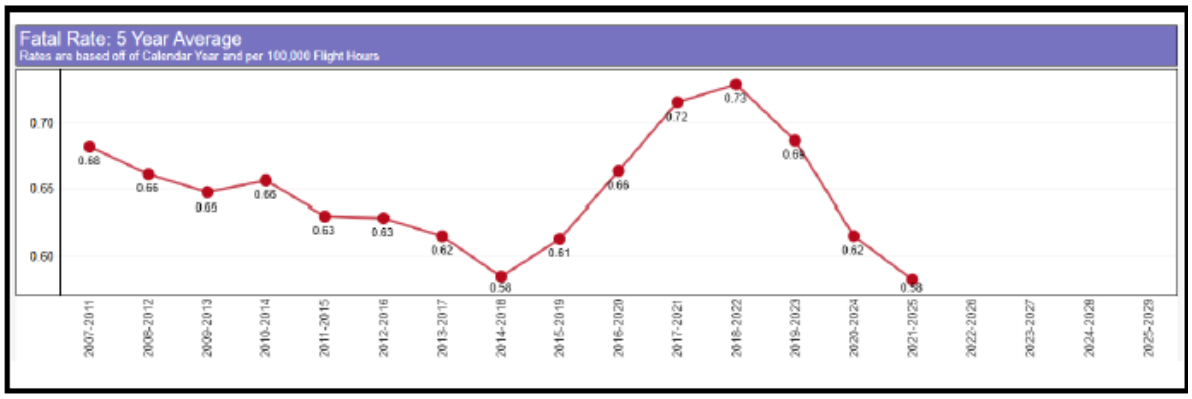
Increase Prep Time

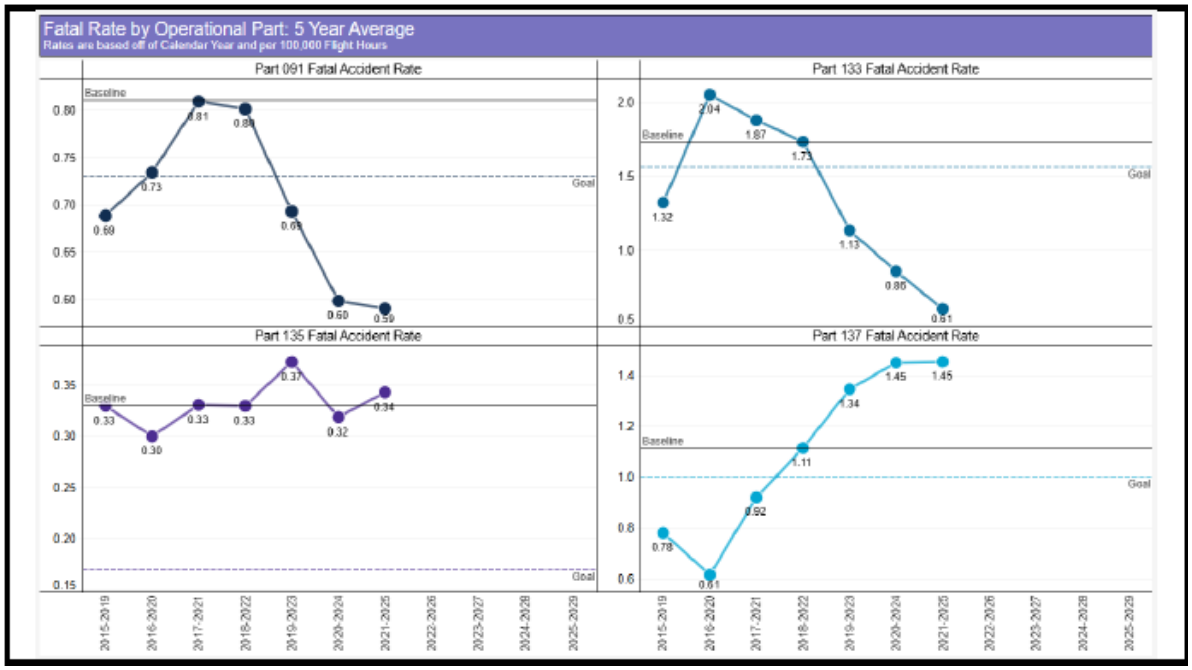
Another tip: Consider giving crew members more time to prepare aircraft, both before and after flights.

“We increase our standard crew show times by 30 minutes before departure and at the back end to take care of whatever special needs the situation calls for,” Papontos said. “We also look closely at the impacts of duty and rest policies for our crews. Flying in icing conditions in the dark is certainly more fatiguing than normal operations.

“When it comes to winter operations, a lot of it comes down to just thinking about all the details you’ll face,” said Papontos. “If you have to make some concessions in the name of safety, no one will ever question those decisions.”

USHST – Monthly Safety Report





Did "YOU" Know?

In the US there are 12,000 + helicopters, 32,000 + helicopter pilots and over 292,000 aircraft mechanics!

The USHST has identified the following industries for **OUTREACH:**

Personal/Private, Helicopter Air Ambulance (HAA), Commercial and Aerial Application

Your participation in joining our vision of fatal accidents is important to us. To determine how your interests best align with active USHST efforts, please click the link below to complete the form and submit.

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Helicopter Safety OUTREACH events:

- VAI Spotlight on Safety: The Ripple Effect
- USHST Summer 2025 Newsletter
- Just for Fun! 44 Missions: What A Helicopter Can Do
- FAASTeam Notice - Risk-Based Flight Review Guidance for Instructors

Helicopter - Safety Enhancement (H-SE) Details

H-SE 2023-04, Improve fatigue awareness and risk mitigation of scheduling factors leading to fatigue

In this project, the USHST will develop guidance material for operators to establish a Fatigue Risk Management Program based on a quantitative objective framework to identify scenarios associated with elevated fatigue risk and to aid in the consistent and reliable execution of effective risk controls. Guidance material will take the form of a white paper to educate operators about the need for an FRMP; a checklist to evaluate FRMP maturity; a case study of an operator adopting an FRMP; and results from a large-scale study of fatigue in air medical transport operations.

USHST Fatigue Risk Management Working Group will: 1. Conduct research and publish a white paper that communicates the need for an FRMP among rotorcraft operators. This will include a review of helicopter incidents investigated by NTSB 2. Develop a checklist to support rotorcraft operators in identifying the key components of a comprehensive FRMP to cover the range of fatigue risks in helicopter operations 3. Conduct a case study with a rotorcraft operator adopting a comprehensive FRMP to serve as an industry guide 4. Conduct a large-scale study to investigate fatigue in conjunction with air medical transport operations work patterns

USHST PRIORITY Safety Resources: Videos USHST Safety App Original H-SE Summation Report

VAI Spotlight on Safety: The Loss of One Life Ripples Through Hundreds More

USHST United States Helicopter Safety Team

SAFETY MANAGER'S CORNER

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Great Safety Performers

1. **Great safety performers are absolutely clear that safety is a personal value to them, even to the point of overriding the company position.** To lead safety well, you have to make it personal. People know when you're going through the motions. If they don't think you care about safety, why should they?
2. **Great safety leaders relentlessly drive the message in all they do.** For these leaders, safety is not an "and" message. It is a deep value – the first thing they talk about and the issue that influences all decisions.
3. **Great safety performers are present in the field on a regular basis.** "In the field" means all the way to the front lines. They support safety systems and procedures by wearing the proper protective equipment in the work area, following the safety guidelines put into effect and modeling desired behaviors.
4. **Great safety performers identify artifacts that indicate the climate and culture of the organization.** They educate themselves on the mindset of the people in the operation, and they drive the message that employee safety is the organization's priority.
5. **Great safety performers expect subordinates to match their same level of focus and action.** These leaders probe to understand how the organization is changing the culture and what it's doing to improve the safety climate. They ask the right questions to get people to think and apply initiative to safety improvement.
6. **Great safety performers understand that aligning resources with objectives is critical.** They articulate a vision that specifies desired behaviors for employees at every level and define actionable and manageable steps for getting there. With each step, they ensure they have the people, financing and resources needed to succeed.
7. **Great safety performers ensure they are aligned with subordinates on what they need to do to support them.** They coach and mentor employees, and provide them with the training, resources and assistance needed to achieve their goals. They work collaboratively with their people to get the most out of their performance.
8. **Great safety performers actively seek feedback on their safety leadership behaviors.** Leaders' actions and words often are perceived differently than intended. That's why feedback is an important tool for improvement. Without feedback, leaders don't know whether their well-meaning leadership actually is undermining the safety effort.
9. **Great safety performers drive the focus on proactive exposure reduction.** They understand that exposure – not accidents – is the best indicator of safety performance. They enable workers to recognize when exposure is changing and take action to eliminate the risk in real time.
10. **Great safety performers actively ensure alignment between their company and contractor leadership.** They address the issue of contractor safety in a surprisingly simple and direct way: They treat contractors like everyone else. They take the position that human life – regardless of the badge you wear – is sacred.
11. **Great safety performers have a deep understanding of the activities of their organization and demonstrate active support.** They know the direction the company is headed, and the ways they can bolster performance and lead people. They take action on safety issues and demonstrate a sense of urgency for safety.

Source: Spigener, 2017.

Quote of the Month

Whether you are an astronomer or a life scientist, geophysicist, or a pilot, you've got to be there because you believe you are good in your field, and can contribute, not because you are going to get a lot of fame or whatever when you get back.

BY: Alan Shepard

Contributions. Rarely do they rise to the heights of incredible but rather mimic the tortoise by advancing in a slow, steady fashion. Adding value day in and day out does not just happen; it requires abundant dedication and commitment. It requires unwavering positive attitude and denies any emerging complacency. No individual is perfect but seeking perfection through genuine contribution approaches perfection. Seeking self-satisfaction is good, but it's only part of the life's puzzle. Projecting that satisfaction and positively impacting those around us, both organizations and people, is what really makes our mark in the world. Look in the mirror every day and ask yourself, "What is my mark?" Positive contribution is the best answer.

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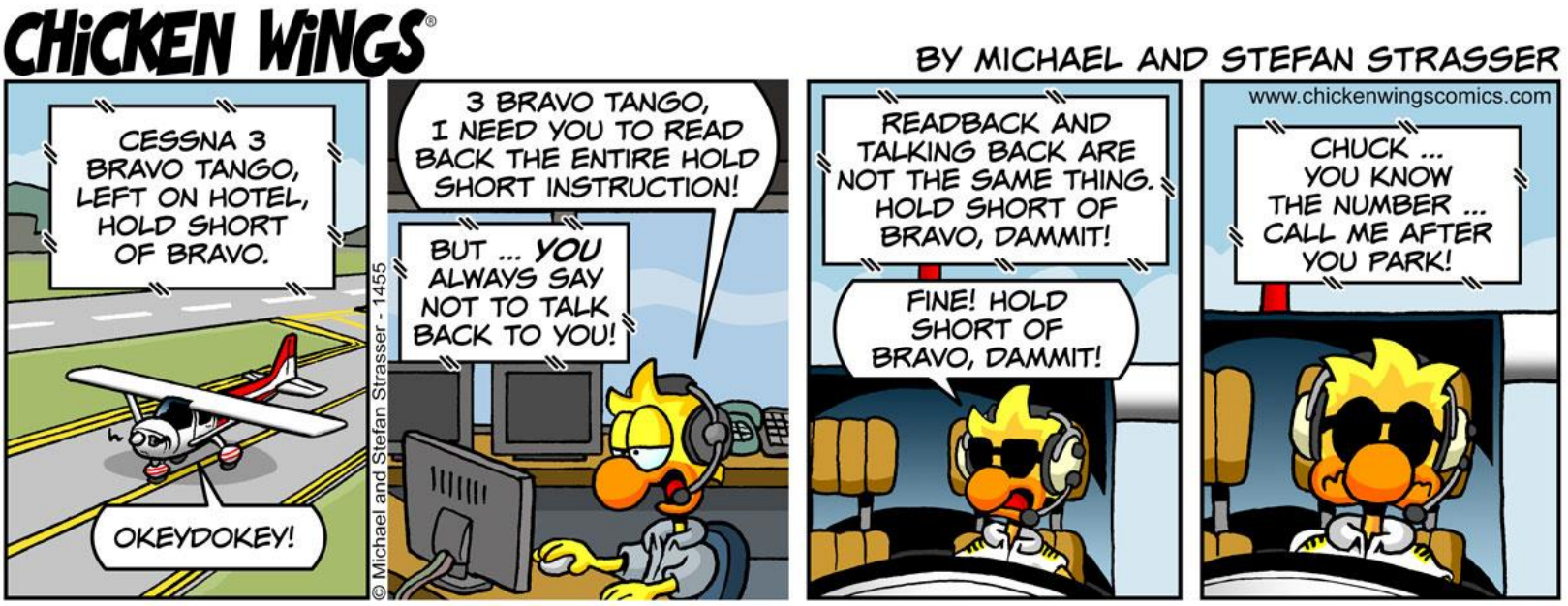

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