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SAFETYWIRE

2022 NBAA Single-Pilot Safety Standdown Puts Runway Excursions Into Sharp Focus

(Source: NBAA.org Newsroom)

Oct. 17, 2022

Experts brought runway excursions into sharper focus Monday at the Single-Pilot Safety Standdown, held ahead of the 2022 NBAA Business Aviation Convention & Exhibition (NBAA-BACE) in Orlando, FL.

The presentation took place as runway excursions continue to be a challenge for aviators. In fact, go-around compliance from unstable approaches is only about 3%, according to a Flight Safety Foundation study.

Attendees were shown interactive, multimedia case studies and presentations that brought the risks of runway excursions to life. Presenters also shared tools available to mitigate those risks.

Peter Basile, senior air safety investigator at Textron Aviation, put attendees in the pilot's seat, walking through a case study of a 2020 Cessna Citation 551 flight, which resulted in a runway excursion and, ultimately, an accident. Basile also discussed Advisory Circular 91-79A and relevant Safety Alert for Operators, which include guidance for mitigating the risk of a runway overrun.

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‘Duncan Hines Cake Mix’

Dan Moore, of Dan Moore Aero, shared the “Duncan Hines Cake Mix” method of stabilized approaches, with consistency being the key to a stabilized approach and runway excursion mitigation.

“You can’t bake a cake with a different recipe and expect it to turn out the same way every time,” Moore said. He explained that although many passengers – and even pilots – score a landing based on the smoothness of the touchdown, “a stabilized approach means much more than the last five or six seconds.”

Moore also gave attendees tips on developing standard operating procedures and benchmarks, as well as utilizing configuration flying to improve performance and mitigate risks.

Raphael Maitre, vice president of customer support at Daher, explained the role of data in safety and risk mitigation, especially through the MyTBM app, which offers TBM operators immediate feedback on key flight parameters. Although the system is not a full FOQA (flight operational quality assurance) program, Maitre explained the data-driven approach is “inspired” by the successes of FOQA.

The ‘No Kidding’ Limit

NBAA Board Member and Citation Jet Pilots Association’s Safety Committee Chairman Charlie Precourt shared results of a comprehensive research study aimed at addressing runway excursions and how the findings from that study were converted into usable, realistic policies, procedures and guidance for pilots.

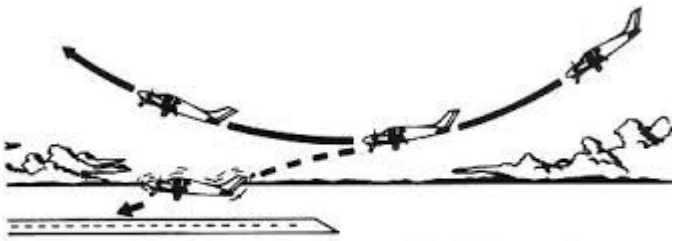

Figure 16–4 Make Timely Decision to Go Around or Land

Precourt asked, “When are you beyond the point where you can salvage it [the landing]?” Calling this the “no kidding” limit, he gave attendees practical advice to develop their own “no kidding” limits, emphasizing the higher risk of going around at low altitude versus making a go-around decision earlier in the approach.

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Wrapping up the event, Dan Boedigheimer, CEO of Advanced Aircrew Academy and incoming NBAA Safety Committee vice chair, pointed to the relationships between NBAA and owner-pilot associations and manufacturers as being critical to addressing key safety issues in business aviation.

“The information presented here today really applies to all business aircraft operations,” said Boedigheimer, as he summarized the Single-Pilot Safety Standdown.

NBAA and the NBAA Safety Committee have developed a number of safety resources for single-pilot operators.

Review NBAA’s single-pilot operations safety resources.

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Winter is Coming

(Source: Rhodri Norton-Quick DbA Jon Snow)

Well folks, the warm weather is heading south for the winter and the snow plows are all getting their annual checks. You know what time it is. We do a winter weather article every year; but this year we are going to try and take this a different direction. Let's take a look at what we can do for those of us that don't have the benefit of trained professionals and Type IV.
(Its starburst green by the way, see? Looks tasty)

For the purposes of this article there are two ways in which this meteorological phenomenon can have an effect on your operation. The first is on scheduling, in a shocking turn of events scientists have discovered that doing more things, means taking more time. Make no mistake about it, your crews are definitely doing more things. We're going to throw dispatch in here as well. No stone left unturned, no ego left un bruised is my motto. Dispatch needs to understand that the performance of an aircraft is highly affected by the addition of de/anti-ice fluids, and runway contamination. A perfectly planned trip is going to be woefully different with the addition of a little moisture and some below freezing temperatures.

The second instance we're going to talk about is less operational and more, "staffuational?" Basically, your support staff, all the office employees, your janitors, maintenance professionals, everyone who works in your HQ is going to have to physically walk through the doors. Or are they? That's where we're taking this. So some of these will be common sense. I urge you to highlight them in your organization anyway. Never underestimate the human capacity for taking something perfectly rational and ignoring it. With that said, lets jump right in.

Dispatch and Scheduling: The summer travel season is generally long, longer west bound legs, longer take off rolls, and longer periods of daylight. Conversely, the winter is all about short stuff. Shorter days, shorter rolls, shorter flights by distance in the flight levels west bound. While the winter will enhance your take off performance due to temperature, there are other factors that will decrease it. There are also hurdles to certain airports that only operate in daylight, as well as, the afore mentioned time crunch.

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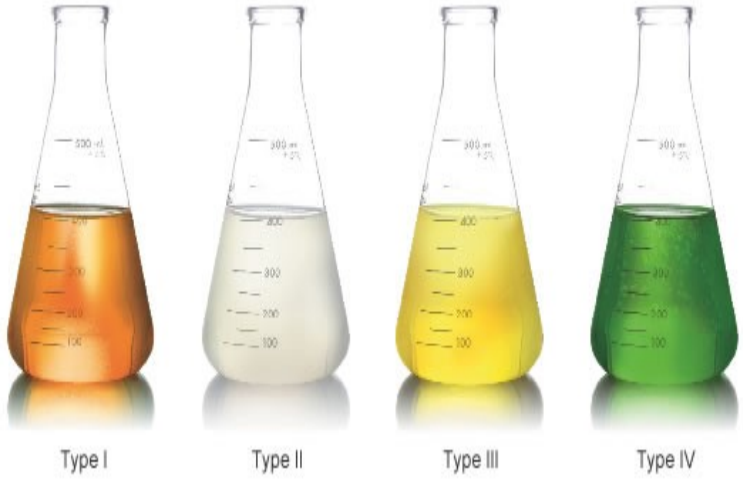
Time: This is going to be a major factor. All too often schedulers and dispatchers assume the same time to turn an airplane regardless of the season. It's not uncommon to see a release where the scheduled turn time is 20-30 min. That may work on a typical sunny day but, if you've blocked a 30 min turn for a jet and they need to de-ice, so does everyone else. The process from an FBO is not uniform across the industry; some locations will have you taxi to a separate location on the field and that could be a 20 min taxi, others will have you pull into a designated spot on their ramp. That sounds better but who knows where the de-ice is stored when they need to replenish, and let's not forget, Type 1 needs to be heated; which all takes time. Lastly, the whole airport needs to de-ice. It's not going to matter when you call in, you're going to have to wait. When dealing with time, there's no magic number, we're not psychic and every crew will preform their tasks at a different pace. Just build in a fudge factor.



Performance: There's a lot to unpack here. I can't go into it all. The long and short of it is, the addition of de/anti-ice fluid means more speed is required before rotation and lift off; you need more space to pick up more speed. The effects of a contaminated runway on the other hand are aircraft specific. In the performance tables, there is normally a note on how to adjust distances, and some of the weight and balance software will automatically adjust for it. (Side note here: make sure to remind your flight crews to adjust their distances for contaminants as well)

(This says grass but you get the idea)

WEIGHT = 3400 LB
Speed at Liftoff = 73 KIAS
Speed over 50 Ft. Obstacle = 78 KIAS
Flaps - 50% · Takeoff Pwr · Dry Paved

Headwind: Subtract 10% for each 12 knots headwind.
Tailwind: Add 10% for each 2 knots tailwind up to 10 knots.
Runway Slope: Ref. Factors.
Dry Grass: Add 20% to Ground Roll.
Wet Grass: Add 30% to Ground Roll.

PRESS ALT FT	DISTANCE FT	TEMPERATURE - °C 0	10	20	30	40	ISA
SL	Grnd Roll	917	990	1067	1146	1229	1028
	50 ft	1432	1539	1650	1764	1883	1594

Circadian Rhythm: The days get shorter. Which means our body's typical day/night cycle goes through an adjustment period. The likelihood of a fatigue call increases exponentially here. This is a great time to go over your fatigue management plan with your schedulers and dispatchers.

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Day/Night operations: There is a major risk increase when you consider flying in winter at night. Primarily, the ability of the crew to spot contamination on the surfaces of the aircraft. Now would be a great time to send an email blast to your pilot group about that, as well as to your scheduling and dispatch department to remind them that the crews are going to need more time to do a thorough ice check. It's also harder to see the ice on a plowed runway.

Back-ups and airport closures: You should always have a plan B, but this time of year it's imperative. Passengers are notorious for assuming that their multi million dollar airplane can fly in anything as long as the crew is "good". We know better, we know that the best crews understand that physical skill is often the last resort. Good pilots usually don't have to use their practical skills because they never put themselves in that position to begin with. Which brings me to airport closures. Around the great lakes, those lake effect snow storms seem to appear and disappear with a moment's notice, the mountains are always a crapshoot, and the major cities always tend to have flow control around the holidays. There's no way to predict mother nature so it's better to plan for her. Yet, every year it's the same battle. Good practice would be for your dispatchers to have an idea of alternate airports even if it's a CAVU day (maybe list them on the release?). Have them plan and budget for an alternate every flight. Just because you plan one doesn't mean you have to use one, and ultimately even if the fuel seems expensive it's generally a wash further down the line. (Carrying alternate fuel also gives you some hold time to see if conditions clear). The point here isn't to get your crews to buy as much gas as possible. The point is to try and prevent that ahead of time. Have a conversation with the customer about alternates and have your dispatchers run numbers before the release. Try to handle as much of this confusion before the pointy end of the spear is traveling towards the closed airport. It'll help your budget too! You can actually see how much this will cost you; at least a ballpark estimate beforehand, since you'll know roughly what they landed with and roughly what they'll need to divert. The pilot group will thank you, albeit probably not out loud.

So we've hammered scheduling and dispatch, that's not a complete list by the way, just something to get you thinking. Let's move on to the rest of the organization.

(It looks pretty, but how much of that is Ice?)

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When your staff shows up bright eyed and bushy tailed first thing in the morning, the last thing they expect is to go home in a cast at the end of the day. Much of that result is admittedly up to the aforementioned employee, but there are some things we can do as an organization to prepare for that eventuality and mitigate its frequency. As far as we are concerned there are two areas where we can have an impact: on the way to or from work and while at work.

- **To the salt mines, or not:** During 2020 work from home became a necessity. Those structures are still in place at many locations. Encourage your eligible employees to do just that. Problem solved. There are some that can't work remotely though, so for them lets look at options.
- **Encourage the use of public transport**. Preferably something on rails. I jest, but the truth is, you don't let some random guy fly the airplane, you hire a professional, that's what using public transport does. It eliminates a portion of the risk by allowing a trained and certified professional to assume it.
- **Remove pressures** that cause accidents such as punishments for tardiness. Every manager has probably gotten the "I was late and got pulled over call"….(Sorry again Jenna). What we are trying to avoid is the "I can't make it because my car's totaled in a snowstorm" call, or more glaringly " Do you know Mr. X? You're listed as his employer, there's been an accident". No body gets paid enough to take that call.
- There are many publications and bulletins about winter driving, **consider publishing some to your organization** through the Safety Locker or however information is internally distributed.

We've gotten them to work, now we have to protect them at work. I know, I know, so needy. To make this easier I'm going to break this down into a couple hazards and solutions.

- **Ice:** This one could be simple, but alternatively it compounds around aircraft. First things first, how about some grip for their feet? The first order of business should be ensuring that everyone knows the benefits of good footwear. Now they're in boots, lets give them less ice. Throw down some salt. There is an additional hazard to salt, it tracks everywhere and is corrosive. It's also not approved for many airport surfaces, Make sure that the airport or facility you are located at allows for salt .

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- **Water:** This one is a revolving door. Throw down salt to melt the ice, turns into water, re-freezes, throw down more salt. That cycle is inevitable, so buckle up. But Mr. Analyst, what do we do about the water? I was getting to that. The risk with water is that someone will slip and fall. Absorbing matts are one option. Another option is to create a covered walkway of some sort or an awning.

- **Cold:** Being an aviation company, there is a high likelihood you have employees that have to work outside. Extreme cold is a misnomer. Extended exposure to temps in the mid 30's to 40's can affect cognitive ability. Basically, you don't think straight when you're borderline hypothermic. How do you mitigate that? Well, gloves for one. That has an added benefit for your line personnel and maintenance professionals as well. Aircraft anti-ice and de-ice are some of the most caustic fluids we work with. It's right up there with Skydrol. Gloves add an extra layer of protection against that. Not to mention how easily extremities become frostbitten. A cheap and easy solution is also to stock hand warmer packets near your hangar and line office. As a skier I should mention, they work without gloves. I might wrap it in a cloth or a paper towel first. Ok, so here's the big one. There's always a couple people in the office who run hot or cold, and generally a normal temperature setting will be sufficient. But just in case, think about creating a "warm" room. It can be a supply closet, it doesn't have to take up real estate. This is a great way to utilize some space you aren't using, but it also provides a place where those same line guys can pop in and warm up quickly. This means they can get back out there quickly, which means you don't lose ramp space and you keep turning airplanes.

- **Fluids:** We touched on this earlier, but once the weather turns, all the fun chemicals come out to play. You need to emphasize to your employees that Hazardous materials are labeled as such for a reason. When in doubt, wear your PPE. An airplane that aborts a takeoff and taxi's into a hangar is going to literally be dripping fluid off of every external surface. (Don't skimp: tell them wings tails and top of the fuselage.) This creates a new hazard, which is viscous fluid on the floor of your pristine hangar. Re-purpose some of those mats.

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So that's it, that's the winter ops article. We'll have more as the season unfolds but this is your big one. I know it's different than you're used to. It's by no means a complete list either. I mentioned earlier, but this is really designed to start a thought process. Don't wait and get caught. Thanksgiving is right around the corner, which means the winter travel season is about to be here. I'm going to do something now because I want to make you all happy. If thanksgiving is right around the corner and the Easter decorations are already out at the department stores that means the holidays, the BIG holidays, are almost here. Consider this an early present from us to you.

Pretty soon, it's going to look like this out there, and that's not all bad. Fly safe everyone.

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SAFETY MANAGER'S CORNER

Promote Safety

How can safety be effectively promoted in a flight operation? Common sense and decades of practice in aviation tells us the importance of safety awareness among employees. The popularity of safety posters and read boards provide insight into a few of the techniques utilized. While these types of awareness raising communicators prove popular, safety management demands another, different form of promotion.

A safety management system (SMS) only functions with the active and willing participation of employees. Hazard identification, risk management, and safety assurance only occur if employees involve them into their work practices and make the effort to communicate and contribute. Safety culture acts as the fertilizer to make employee participation in safety management grow. Safety promotion, in turn is an important element of culture. When employees participate and contribute in their SMS, they deserve accurate and timely feedback describing the value and benefit derived from their participation. Providing this feedback is one of a safety manager's crucial duties.

Choose a reasonable time period (monthly, quarterly, semi-annually, etc.) and create a short summary report that depicts your operation's SMS activities and highlights. Describe the improvements directly related to SMS input provided by employees. Perhaps a safety report described a concern about operations at a particular airport, and a new operational restriction put in place reduced the risk associated with the discovered hazard. Perhaps completing three internal evaluation checklists resulted in seven different latent problems, and fixing each of them significantly improved the operation. Perhaps two FRAT reports that identified an elevated risk level on their respective flights resulted in mitigations that reduced the risk to acceptable levels before the flight commenced. Gather these highlights and create a short report showing exactly how employee participation makes a difference, how the SMS only works when they actively participate. Present the benefits the SMS provides to the entire operation. When the employees put forth effort to make the SMS effective, they deserve the type of safety promotion that describes the benefits gained.

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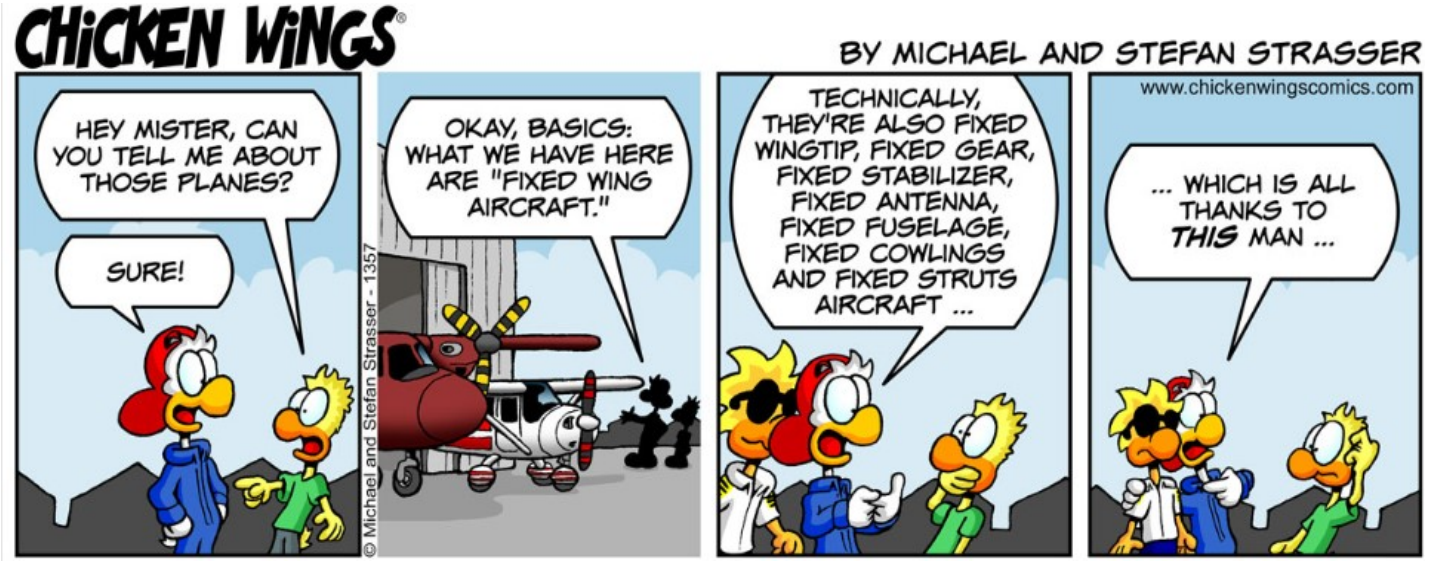
Quote of the Month

“Safety is not an intellectual exercise to keep us in work. It is a matter of life and death. It is the sum of our contributions to safety management that determines whether people we work with live or die”

— Sir Brian Appleton

There’s not much to add here. We play a dangerous game, in a dangerous environment. Every contribution that we make to safety improves the life expectancy of our teammates. Emphasize the contributions your staff makes, from the line pilot or mechanic filing a report, to the person at the top of the Org chart. A safety management system is ineffective without those contributions.



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