

Flight Test Safety Fact



Published for the Flight Test Safety Committee

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Flight Test Safety Workshop Call for Presentations

The Flight Test Safety Committee is pleased to announce that the North American Flight Test Safety Workshop will be held 2-4 May 2023 in Wichita, Kansas. The Tutorial, "Risk Management For The Future of Flight – Exploring how risk management can be applied to new technologies" will be held at the Textron Aviation Activity Center at Beech Field on Tuesday, 2 May. The technical presentations will be held at the Drury Plaza Hotel Broadview from 3-4 May.

This is an official call for papers.

For the technical paper presentation portion of the Workshop, we want to hear from testers on their approaches for testing of new and novel technologies, including electric (eCTOL, eVTOL) and autonomous aircraft. Presentations on other subject matters are welcome too.

Presentations should be limited to 25 minutes. Please send presentation/briefing proposals to the 2023 Flight Test Safety Workshop Chairman, Stu "Chia" Rogerson via Susan@setp.org.

The deadline for abstracts is 17 February 2023 to allow time for appropriate consideration and inclusion in the program. The event includes a technical tour of Textron Aviation on Tuesday after the tutorial.

The registration site will be available soon. <https://www.flighttestsafety.org/workshops>

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Upcoming Workshops

2023 Flight Test Safety Workshop
2-4 May 2023

Drury Plaza Hotel Broadview
400 West Douglas Avenue
Wichita, KS 67202

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Letter to the Editor

Editor's note: Recently, I was in a virtual conversation with some of my friends—who also happen to be colleagues—and one of them shared some ideas and questions he had in a new flight test leadership position, a company with a mature engineering department but a new flight test department. One member of the conversation said this: “Please publish that in the next Flight Test Safety Newsletter. It’s the best thing I’ve read on safety in a long time.”

Chris’s Contemplations

Organizations that say things like “safety first” or “Go4Zero” are actually less inclined to make sound decisions regarding safety.

- 1) Talking a big game about safety gives the organization top cover to actually make decisions that are less safe. In a way it violates the law of noncontradiction. “We made the safest decision, because safety is our #1 priority.” (This is really just circular logic.)
- 2) Often we create a greater hazard by hyper-focus on a particular hazard. We become so impressed with ourselves in mitigating the first hazard, we tend to overlook the fact that we created a less safe situation.
- 3) It is impossible to eliminate risk entirely, so why make that your goal? Anything less than that goal undermines the credibility of the goal itself.

A third member of the conversation made this remark: “I wish I had more time. This deep dive into the fundamentals of building a test team and the enduring principles to apply to actions is so important.”

Do you agree? Send an email to mark@flighttestfact.com to get your *Letter to the Editor* featured here.

Brilliant at the Basics

Mark Jones Jr.

The other day, I happened upon an interesting interview question: “What is the most recent thing you did that was not safe?” The question is mildly provocative, and it succeeded in provoking me to thought.

I contemplated the question, circling over the landscape of my memory and daily activities, and I landed on two unsafe activities. First, I exercise early in the morning, and each day’s activity usually involves walking along a road in the dark. I don’t think anyone would argue that there are aspects of the activity that are unsafe (though I won’t take the time to discuss my risk assessment and mitigations). The second activity I arrived at was driving. We’ll come back to this in a moment.

On a separate occasion, someone quoted a well-known safety aphorism, “Accept no unnecessary risk.” So that saying was bouncing around inside my head. The phrase seems helpful, but the ambiguity inherent in its words started to bother me. What is an “unnecessary” risk? I would have to explore that part of the question another time, because the two things—driving and accepting risk—collided in my mind.

Using mobile phones while driving has become ubiquitous. Multiple times per day, I pass someone staring at a phone. If someone behind me gets distracted, there is almost nothing I can do to prevent a mishap, and the road I travel to and from work is littered with accidents almost daily. Driving is unsafe.

But is it a necessary risk? I think most would agree that getting to and from work is a necessity. How quickly do we agree, and does anyone consider any alternatives before arriving at the conclusion that I arrived at? Does my conclusion still hold when I consider driving to the fast food restaurant? I don’t think Arby’s is a “necessity.” Am I accepting unnecessary risk?

Is there anything special about this kind of risk? It's part of the environment, but it's the human element—the willful non-compliance—which makes it feel somehow different.

As I was stewing on it, I decided to add a third ingredient to what my mind was cooking up. The high school basketball season just ended. Watching my son and his team compete in the playoffs gives me a lot of time to think, and sometimes—during half-time for example—my mind wanders to the flight test safety. Basketball, and sports, are a good analogy for life, and the lessons apply widely.

This month, I was watching my high schooler play basketball and witnessed my son's team win the first round of the playoffs. At the end of two quarters, they were up by 17 points, but nearing the end of the third quarter, they were tied. How does one blow a 17 point lead? I could see it from my seat in the stands...they were exhausted. Players weren't hustling towards the basket to get rebounds. And they were missing shots they were swishing in the first half.

Here's what I thought was interesting: the shot was only off by a few inches. Fatigue does that—it only erodes a little bit of the performance to start with. I started listening to a book about Sleep, and it connected the dots to the basketball thing. This book makes me feel guilty about the times I let poor sleep disciplines build up to chronic fatigue.

But it made me wonder if I had the ability to detect when my head and my heart are “missing the shots” especially if I am only off by a “few inches.” Certainly I've noticed the really bad shots, the airballs, that affect my judgment and decision making when I am really tired, but do I notice the small things? And do I let my 17 point lead start to erode? This is all a big analogy, but it's an interesting train of thought that applies to flight test safety too.

There is one more application from basketball to this domain that I want to point out. One of the things many of us learned in sports is the importance of the fundamentals.

In the late 1950s, after years of losing, the Green Bay Packers hired a new head coach, Vince Lombardi. A press corps filled with (understandably) cynical reporters asked several questions about the new strategies and fresh ideas the coach would bring to the team. Lombardi's response was probably quite unexpected. He said, “I am not going to change anything. We will use the same players, the same plays and the same training system. But we will concentrate on becoming brilliant at the basics.”

In conclusion, I want you to contemplate two questions: 1. **What are the fundamentals of Flight Test Safety?** and 2. **Are we deliberately practicing these fundamentals?**

If I asked you to identify the fundamentals of flight test safety, would we come up with the same answer? And more importantly, are we practicing the fundamentals? Are we brilliant at the basics? John Wooden (basketball coach) and Vince Lombardi gave us examples of what an unreasonable commitment to the fundamentals looks like. Can we compare? Or have you started noticing the “team is missing some shots”?

Endnote: this sports analogy seems important too.

I remember one practice in particular. “You're doing it all wrong, Pausch. Go back! Do it again!” I tried to do what he wanted. It wasn't enough. “You owe me, Pausch! You're doing push-ups after practice.”

When I was finally dismissed, one of the assistant coaches came over to reassure me. “Coach Graham rode you pretty hard, didn't he?” he said.

I could barely muster a “yeah.”

“That's a good thing,” the assistant told me. “When you're screwing up and nobody says anything to you anymore, that means they've given up on you.”

(Excerpt from The Last Lecture, by Randy Pausch, page 36)

Flight Test Safety Committee - Calendar of Events

Flight Test Safety Workshop

When: 2-4 May 2023

Where: Drury Plaza Hotel Broadview
400 West Douglas Avenue
Wichita, KS 67202

<https://www.flighttestsafety.org/workshops>



Flight Test Safety Award – Nominations due 30 March

The Flight Test Safety Committee is soliciting nominations for the Tony LeVier Flight Test Safety Award. The Nomination form must be presented in writing not later than 30 March 2023 for consideration.

The Tony LeVier Flight Test Safety Award was established by the Flight Test Safety Committee (FTSC) to formally recognize a single individual, or small group of individuals, who, recently, has made a significant flight test safety contribution to the flight test community as a whole, an organization, a specific program or even a singular event. This award is specific to flight test safety achievements and contributions.

<https://flighttestsafety.org/awards/35-awards/information/54-tony-levier-flight-test-safety-award>

Turbo Talk

Art "Turbo" Tomassetti

Let me start off this edition of Turbo talk with two requests. The first is regarding the Tony LeVier Flight Test Safety award. This award was established by the Flight Test Safety Committee to formally recognize a single individual, or group of individuals, who over some period of time, has made a significant flight test safety contribution to a specific program, organization, or the flight test profession as a whole. We are currently accepting nominations for this award and I would ask that our readers take a few minutes to look at the award description and criteria on our website and then convince yourself you don't know any person or persons who deserve this award. Here is the link: [Tony LeVier Flight Test Safety Award](https://flighttestsafety.org/awards/35-awards/information/54-tony-levier-flight-test-safety-award).

If, however, you do know a person or persons that should be considered for this award then please submit a nomination form. The second request is in regards to our upcoming Flight Test Safety workshop in Wichita the first week of May and the request is – join us!

Ok, on to my topic for this edition. Last week I went on an adventure which took me to Las Vegas, Nevada. I know what you are going to say, "What happens in Vegas stays in Vegas." But we are in the business of sharing lessons learned, especially if they relate to safety and most especially if we think that sharing them might make others a little safer. The



day in Vegas started with a drive south out of the city. My quest that morning was to find one of the old airway navigation markers used by air mail pilots back in the 1920s. These markers were large concrete arrows that marked the routes between cities. Most had towers with light beacons for night flying, but they all had 15-30 foot long concrete arrows painted yellow that you could see from the aircraft. Remember there was a time before GPS and INS and all the other navigation wonders that assist us today. This particular marker I was after sat on a hill and pointed toward Las Vegas from Los Angeles. As I parked the rental car I looked up at a steep hill and treacherous unfamiliar terrain and faced some significant risk decisions. What happened next was... Tune in to next month's Flight Test Safety podcast for the rest of that story. I know—cheap marketing trick but the photo above may further pique your interest.

The story I wanted to relay in this edition of *Turbo Talk* relates to a museum I went to later in the day. Yes, I know I should have said spoiler alert as you now know I survived the quest for the airway marker (or maybe I chose to abort that mission—check out the podcast for the answer).

So that afternoon in Vegas I went to the National Atomic Testing museum. Some of you may be wondering what this has to do with Flight Test Safety. Well it covers two out of three of those words, Test and Safety. “Test”—well obviously, it’s in the museum’s name, and “safety”—you would expect that those doing the atomic testing thought about safety. I expected that, but after touring the museum I am not so sure. Sure there were lots of unknowns with the science at the time but we face unknowns in flight test from time to time as well. Think about some of the developments that are going on right now in aviation and space, and there may be more than just a few unknowns present. But here is something I found really amazing about those early days of atomic testing. Take a look at the picture.



This is taken from the roof of a hotel in Las Vegas in the late 1950s. Yes, there was a time when people went to Las Vegas not just for the casinos and celebrities but to watch the testing of atomic weapons. And if you were a news person or someone important you could get VIP seating.



Eventually we would come to realize that this may not have been a good idea both for political reasons and for, well, health and safety reasons.

Why talk about this?

I love to pull safety lessons from unusual sources so here are two I draw from this little tidbit of history. The first is that when dealing with unknowns, it may be prudent to be a little more cautious than standard. The second, when facing danger, risk, and the unknown, keep spectators to a minimum, maybe even zero. I know back in those days of above ground and airborne atomic tests, you couldn't keep people in nearby cities from watching. But you didn't need



to advertise it and provide dark glasses to wear. The past is full of lessons that can help us in the present and keep us around for the future.

Until next time: Be Safe, Be Smart and Be Ready.

Turbo

Flight Test Safety Channel Podcast

Art “Turbo” Tomassetti

2023 Podcast Episodes

January

Test Teams Today

You can subscribe to the Flight Test Safety Channel podcast in iTunes, Spotify, Podbean, Google Play, and Amazon Music’s FTSCChannel. You can also share the link below with colleagues and friends who may not know about Turbo’s monthly recording and navigate directly to the podcast: <https://flighttestsafety.org/ftsc-news/flight-test-safety-podcast-channel>.

Contact the *Flight Test Safety Fact*

Mark Jones Jr, Editor
mark@flighttestfact.com

Art “Turbo” Tomassetti, Chairman
Susan Bennett, FTSC Administrator
Society of Flight Test Engineers
Society of Experimental Test Pilots
AIAA Flight Test Group

chairman@flighttestsafety.org
susan@setp.org
edir@sfte.org
setp@setp.org
derek.spear@gmail.com

Connect with us by joining the LinkedIn Group: “Flight Test Safety Committee.”

Website: flighttestsafety.org

Random Observations

Editor

Just plane funny - One reader shared a video with me, a funny take on the FAA outage, and I laughed out loud. NOTAMs: The Majestic, Endangered Species on the Verge of Collapse <https://youtu.be/499kGRS81dg>

Book Review: Principles of Aerostatics - Read a book review on a relevant topic, balloons, written by Al Lawless, which was originally published in FTE newsletter <https://flighttestfact.com/flight-test-news-august-2015/>.

Advanced Technologies Making Headlines in Flight Test

AI has been in the news a lot, as you can see at the links below. The term is incredibly misleading, but let’s set that aside for now. If you could use “Artificial Intelligence” for any part of the flight test safety process, from ground bases processes to in-flight mitigations, how would you? (Think of it like magic and send your best ideas.)

<https://breakingdefense.com/2023/01/inside-the-special-f-16-the-air-force-is-using-to-test-out-ai/>

<https://www.airbus.com/en/newsroom/press-releases/2023-01-airbus-tests-new-technologies-to-enhance-pilot-assistance>

<https://www.airbus.com/en/newsroom/stories/2023-01-could-the-humble-dragonfly-help-pilots-during-flight>
<https://www.aviationtoday.com/2023/01/12/supernal-utilize-microsoft-azure-evtol-development/>
<https://www.darpa.mil/news-events/2023-02-13>



Cook Publishes *Flight Test Brevity* - I don't know how much I can say about this given the title, but I will say two things. First, communication is one of the basics, and let's admit it—we aren't brilliant. Second, publishing a document in this way is probably how we *ought* to do it, and it is an example of brilliance. Read his document at <https://cooknl.github.io/flight-test-brevity/>

Flight Test Brevity

SEARCH

Preface

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Flight Test Brevity

A Communications Guide

Author: Nathan Cook

PUBLISHED: February 18, 2023

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Purpose

This guide is intended to accelerate the communications training of flight testers. The desired end state is a flight test team who can safely, securely, effectively, and efficiently communicate with each other, whether over the radio or face-to-face.

Feedback