

"Aviation Weather"

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July 21, 2014

Friends and Partners in Aviation Weather

Good afternoon, and thank you, Ed [*Bolen*].

When an aviation group gathers, we often recount the birth of the industry on that sandy dune at Kitty Hawk. We know the details almost by heart: December 17, 1903. Two bicycle repairmen. The Wright Flyer. 120 feet in 12 seconds at 6 miles per hour. And just a few test flights later, the distance in the air was almost three football fields long. We see that famous photograph in our mind.

But there is a back story we don't often discuss. Years before that first flight, the Wrights had to undergo a search for a place to make history. They turned to the *Weather Bureau* for help. The Weather Bureau, which had set up an office in Kitty Hawk in 1875, told the Wrights that Kitty Hawk has a "steady wind and a free sweep" on the beach—perfect conditions for their test flights. The conditions on December 13 were good for flight—but December 13 was a Sunday, and the Wrights weren't going to defeat gravity on a Sunday. At 10:35 in the morning, four days later, the Wrights looked into a freezing headwind with gusts of wind the Weather Bureau had predicted and the brothers finally brokered a deal with gravity. When it came time to tell the world, the Wrights used a telegraph located conveniently at the Weather Bureau.

In the 111 years since then, the list of things that have changed about aviation gets pretty long. *What* we fly. *When* we fly. *Where* we fly. *How long* it takes. Engines. Radar. GPS. Fuel. Technology on the *ground*. Technology in the *cockpit*. Technology in *space*.

But every one of us would agree that there is one thing that hasn't changed a bit since Orville and Wilbur set aside bicycle repair—and that is the weather. To us, "How's the weather?" isn't a throwaway phrase. It's at the heart of the go/no-go. And it doesn't matter what you're flying, whether you're a wide-body or a Cub, Mother Nature requires respect and attention—before, during and even after the flight.

You know that, and that's why you're here. The FAA knows that, and that's why we take weather as seriously as we do. In a big operating environment, we won't take risks with safety. Neither do you.

The facts are plain. Weather is the single largest uncontrolled ... and uncontrollable ... user of the national airspace system. Based on our own Ops Net numbers—over a decade's worth of keeping track—better than two-thirds of all air traffic delays longer than 15 minutes were due to weather. We're all well aware of the safety considerations. But weather also causes deviations, delays, and ground stops. That's lost time, and lost productivity.

I can't unveil a plan to change the weather, but I can tell you what we're going to do about it. We launched a joint weather safety campaign with our GA partners in safety on May 1 in Alaska—just in time for the summer flying season. We already have more than a dozen partners, including many in this room --AOPA, NBAA, EAA and NOAA ... as well as NTSB. We have a simple premise: While terrain, model type and pilot experience may vary, the one thing that should unite all pilots is respect for the weather. The GA community recognizes that, and they were eager to join in. *You* realize this, and the size of this audience proves it.

Got Weather is an on-line resource that will run until the end of the year. We focus on a new topic each month. In June, we focused on turbulence. This month we're looking at Flying IFR: knowing what you're flying into. And with summer flying that means thunderstorms. I'm sure that will come up in the discussion of How Humans Deal with Uncertainty later today. Historically, we've seen pilots operating general aviation aircraft under VFR into Instrument Meteorological Conditions as a significant factor in fatal accidents. These events are known as VFR into IMC accidents.

As a result of collaborative safety initiatives, there has been reduction in these accidents. In fact, over the last 36 months only 4 percent of the general aviation fatal accidents have been caused by VFR into IMC.

But I think we'd all agree that we're still not where we want to be. AOPA confirms that nearly 75 percent of weather-related GA accidents are fatal.

The accident numbers have been stable over the last five years, but even at that, one is one too many.

We've said from the beginning that what will lead us to success is the willingness of the GA community to step up.

I think what makes this work is that it's common-sense reminders—the very kind of reminders that save lives. And we're asking pilots to engage other pilots in the campaign.

This month, we ask pilots questions that bear repeating here: Are you proficient or just current? What's your qualification, experience and comfort level for flying in weather? Would training better prepare you for this flying season? How do you get weather information? What can you learn about weather? Have you reviewed weather minimums? Do you have an escape plan? Know and recognize your limits.

We also encourage pilots to write down personal minimums. The rationale is simple: it will serve as a personal, flexible safety buffer based on the pilot's individual skills, training, currency and proficiency.

We also ask pilots to talk to fellow pilots, Certified Flight Instructors and FAA/Industry safety managers about weather decision-making wherever you are on the ramp or at the Pilot Lounge.

We're doing a lot on social media too ... Facebook and Twitter. Our "Got Weather" messages have reached 1.7 million people on social media. Our target audience is engaging with this content: 16,000 clicks, likes, shares, comments and video views.

I visited AOPA out in Frederick just last week. I couldn't be more pleased with their commitment to this campaign. I'm proud of this campaign. It's one of our best. You can check it out at www.faa.gov/go/gotweather.

As we enter into the next generation of aviation, I think that NextGen is going to change the response to go/no-go questions like "How's the weather?" We're deploying NextGen technologies into the national airspace system today. NextGen is now.

Take ADS-B. It gives GA a good idea of what the controllers see. In terms of situational awareness, there's a much better idea of the location of aircraft in the sky around them. We're not talking about something far down the road. Pilots already are seeing the additional benefits of ADS-B In – better weather, traffic and situational awareness. We believe they will equip to enjoy these benefits. FIS-B – FlightInformation Service–Broadcast—is a service that broadcasts graphical weather to the cockpit based on what ground-based weather radar sees. In addition, FIS-B broadcasts text-based advisories including Notice to Airmen messages and reports on everything from significant weather to thunderstorm activity.

NextGen is not unlike the electrical system in your house. It's largely invisible, but what it does for you is readily apparent. NextGen changes might not be seen by the flying public, but the passengers know all about the shorter flights, the fewer delays and fewer missed connections. As A4A will tell you, the carriers are saving minutes ... and fuel ... and slicing emissions. That's all courtesy of more precise routing. GA and small aircraft operators get greater access to more airports across the country ... particularly during bad weather.

Working together pays off. As I said earlier, airplanes have changed, but aviation weather products ... well, not so much. Some of our weather products are eerily similar to the telegraph that the Wright Brothers used. As a matter of fact, if you looked at an area forecast from 1965 and another one from today ... well, suffice it to say that it's hard to tell one from the other.

That's why we're working with the National Weather Service to transition the Area Forecast to digital and graphical alternatives. We've taken a review of all weather information produced by the National Weather service for aviation purposes.

We want to improve the product in support of aviation weather. We're looking for opportunities to digitize products and services. We're going to identify products and services that are duplicative ... and let me say this about that: their days are numbered. As well they should be.

The Area Forecast is a manually generated text product with no graphical components. It forecasts VFR clouds and weather, and it's issued four times a day. These things date back to the 1930s. The current version has not been changed since the early 1990s. It is the most labor intensive product that the National Weather Service puts out. Once we make the switch, this

frees up weather forecasters to focus on the more relevant graphic and digital products used by general aviation.

So we're already mapping alternative sources of information. We're going to provide guidance for using these alternatives. The General Aviation Joint Steering Committee, which brings together government and industry to advance safety, has endorsed this idea. That's not surprising. Making a long story short ... an old, *old* story short ... we're targeting early 2015 for transition to the alternative sources of information.

We're also working on a NextGen piece with our partners in industry and at the National Weather Service that bears mention here. Steve Brown of NBAA will be moderating a panel in just a bit and this will be addressed in more detail. We're working to evolve the Convective Collaborative Forecast Product. That's been the bread and butter for NAS planning by traffic managers over the past 15 years. Prior to the Convective Collaborative Forecast Product, just about every stakeholder in the NAS had their own convective forecast. As this group is well aware, not having a common forecast made it difficult to build a strategic plan for the NAS.

But we are not done with the evolution of the Convective Collaborative Forecast Product. Science and technology advances have introduced new high-resolution forecasts like the Consolidated Storm Prediction for Aviation. And weather models are providing reliable probabilistic forecasts of convection. These improvements are still in development as potential alternatives to the Convective Collaborative Forecast Product. Further R&D is required.

NextGen calls for the use of probabilistic weather information for strategic planning. With the introduction of reliable weather information about thunderstorms, TFM planners can build a plan for the day that is based on the most likely weather scenario, as well as alternative plans to account for other potential weather scenarios.

This capability is critical for TFM planners to exploit new technology and procedures.

The Wright Brothers' instinct was to pay attention to the weather. Their plan was to seek guidance, to work in partnership, to maximize their efforts. We're here today and tomorrow because their idea worked. But we're also here because we're following suit. Working in partnership maximizes our efforts. The Wrights made history with this approach. Let's do more of the same.