

Next Generation of Aviation Weather and GA Safety

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Weather Technology in the GA Cockpit

- In-Flight Weather
- Datalink
- ADS-B FIS-B
- Nexrad



In-Flight Weather

- **Pilots are becoming more reliant on cockpit wx technology**
 - In flight weather can be a great tool, but provide a false sense of security
- **Pilots often choose to take off and evaluate the weather as they go. At typical GA aircraft speeds, a 200-mile trip can leave a 2-3 hour weather information gap between the preflight briefing and the actual flight**
 - Cockpit weather technologies bridge this gap



Datalink and Weather Avoidance Equipment

- Weather datalink equipment uses satellites to transmit weather data such as METARs, TAFs, and NEXRAD radar to the cockpit
- Handheld devices are growing in popularity amongst the GA community



- **Flight Information Service-Broadcast (FIS-B) weather information is one of the key GA elements of ADS-B**
- **For aircraft that are ADS-B in equipped, FIS-B delivers Nexrad radar images, PIREP, METAR, TAF and winds aloft weather reports directly to a cockpit multifunction display**

- **Radar images are transmitted via data link and provide a vastly better picture of the weather than in the past**
 - Critical to note that this information is not real-time. It takes several minutes for the Nexrad ground station to complete the scans necessary to build an image and then additional time to send the image to the aircraft
 - In significant weather, this gap can mean the difference between life and death

What We Teach



- With new technology emerging every day and an increased reliance on decision support tools in Next Gen operations, it is critical that pilots have the tools to become well-versed in the technologies

What we teach:

- Utilizing technology to make smart decisions
- Know before you go mentality is important- becoming competent and confident prior to flying with advanced equipment
- Understanding limitations of your specific equipment, recognizing lag time, and other restraints and planning accordingly
- Never become distracted by technology
 - Core duties of flight always come first



Air Safety Institute Interactive Learning



IFR INSIGHTS:

Cockpit Weather



MAIN MENU

Interactive Scenario 1: Upper Midwest Autumn

LOOK LEFT

LOOK RIGHT



OPEN DATALINK WEATHER



VIEW OAT



USE RADIO

Decision 1

- A** Continue on course through precipitation

- B** Ask ATC for deviations around precip ahead

- C** Land at Pittsburgh and wait

Time: 1930Z
Altitude: 8,000 msl

ACCIDENT CASE STUDY:

TIME LAPSE

A cross-country flight comes to a tragic end after an encounter with severe weather. In this case study, we look at what went wrong.

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