

Friends & Partners in Aviation Weather: Part 135

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Chairman, NBAA Part 135 Subcommittee



Part 135 On-Demand Operations

A mix of many different operational environments

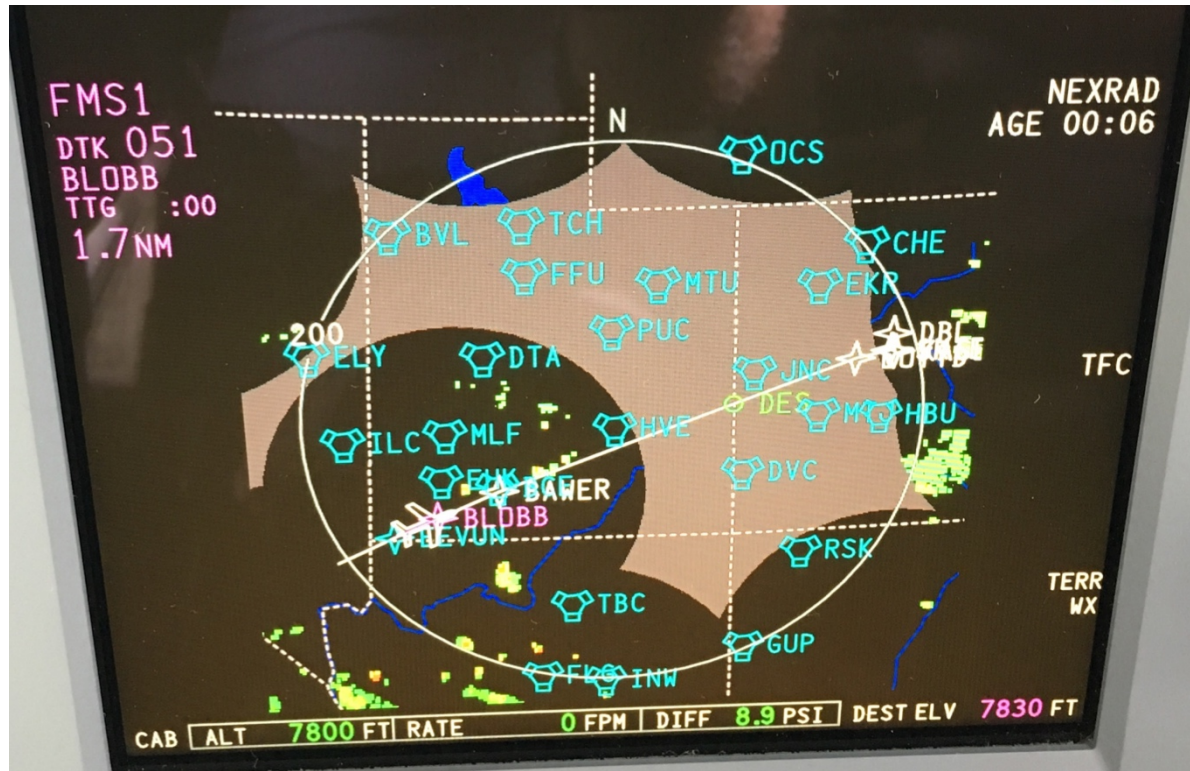
- Unique in that on-demand operations can span the globe and service thousands of familiar or unfamiliar airports at a moment's notice and at all hours (unscheduled)
- Operations may include a variety of aircraft from short range single engine aircraft operating below 10,000' MSL up to large range turbojets operating at FL450+
- Flights frequently transit non-FAR 139 airports where operational services, weather reporting, and other resources may be limited
- Can be more difficult to obtain timely operational info such as airfield and runway conditions, noise restrictions, and available aircraft services (Fuel, De-Ice, etc.)
- "Aircraft Dispatcher" is not a required for FAR 135 operators, many tasks completed by flight crews or flight operations management (customs, weather, fuel planning, researching TFRs, NOTAMs, airport conditions, etc)

In-Cockpit Weather Challenges & Wishes

- Operations to 5000+ public use airports in the USA and beyond as an FAA Certified "Air Carrier"
- Variety of on-board installed and portable equipment available on the market (is everyone properly trained on each?)
- Smaller aircraft with new STC'd equipment often have greater in-flight weather services/capability (ADS-B In)
- Advances in weather radar (Multi-Scan, Auto-Tilt) have typically been implemented in new avionic installations, not always available or cost-effective as a retrofit option
- Update rates for in-cockpit XM Weather can frequently lag behind other portable ADS-B In or Wifi based solutions
- NEXRAD coverage areas can be limited in mountainous areas where Part 135 operations are often conducted
- High altitude convective activity broadly depicted (low resolution) on NEXRAD and Echo Tops can often be lower than the actual tops of convective activity
 - Strategic and tactical decisions to deviate or top weather (Aircraft capable of FL410, FL430, FL450+)
- Lack of timely and relevant PIREPs, reported PIREPs which do not get entered into the system after advising ATC



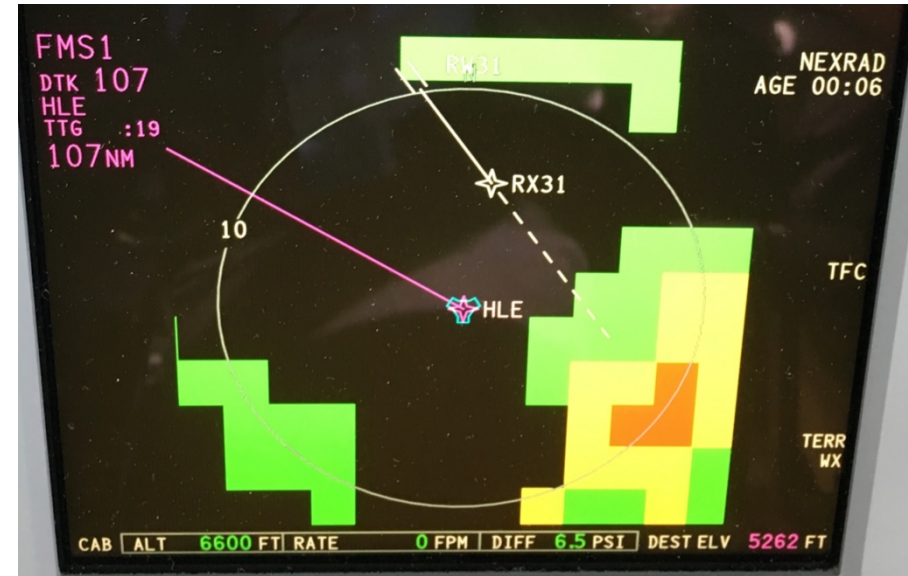
Lack of NEXRAD Coverage in certain areas, particularly over Gulf of Mexico can make it difficult for flight crews to strategically plan how to best avoid convective activity



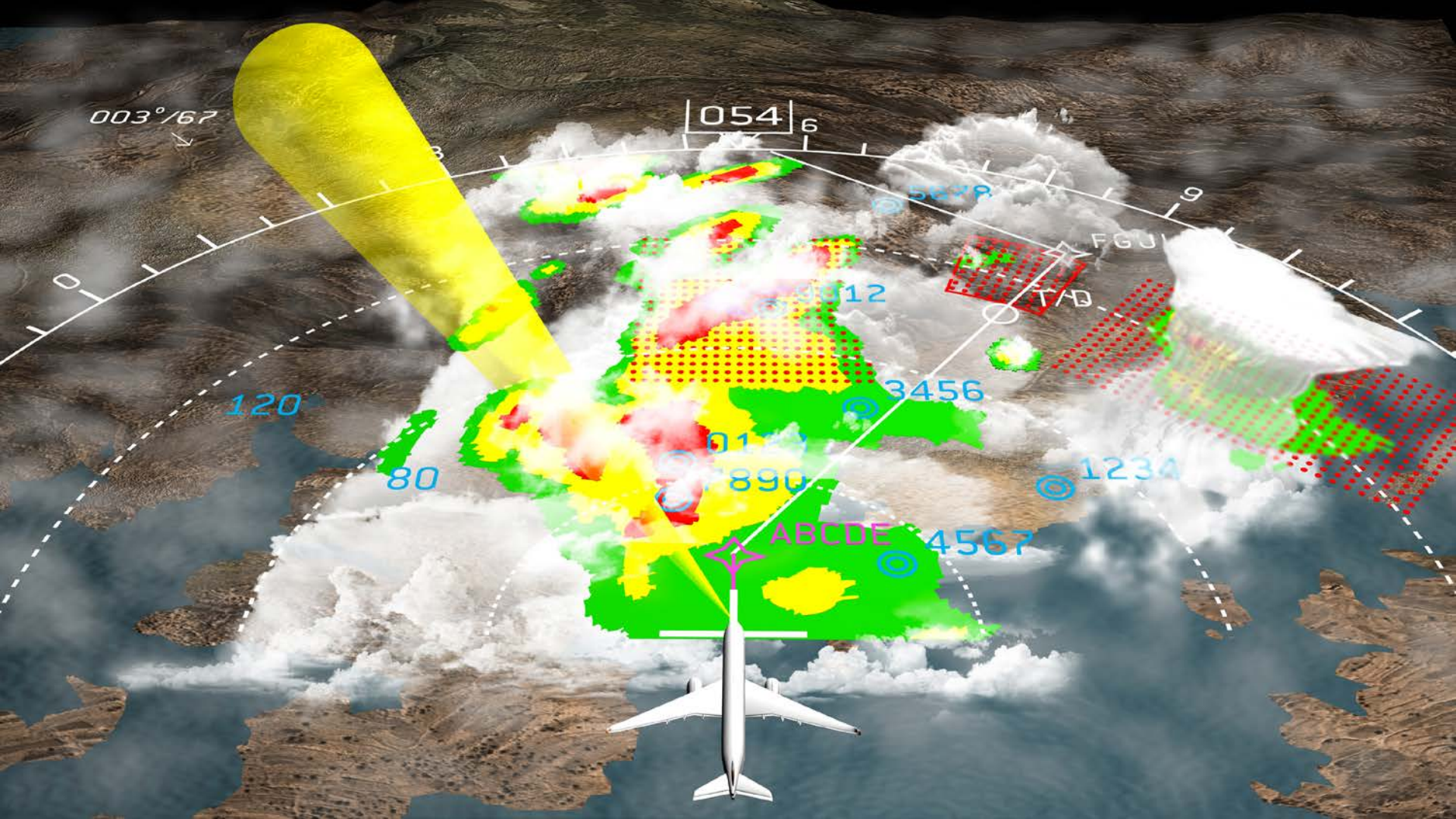
Example: Lack of NEXRAD Coverage (gray area) over the Rocky Mountain region in northeastern Utah and western Colorado



Provided a “Tops Report” to ZMA while deviating on the SSCOT3 STAR to Miami (OPF). Did it ever make it into the “system?” How can other flight crews be aware of our observations?

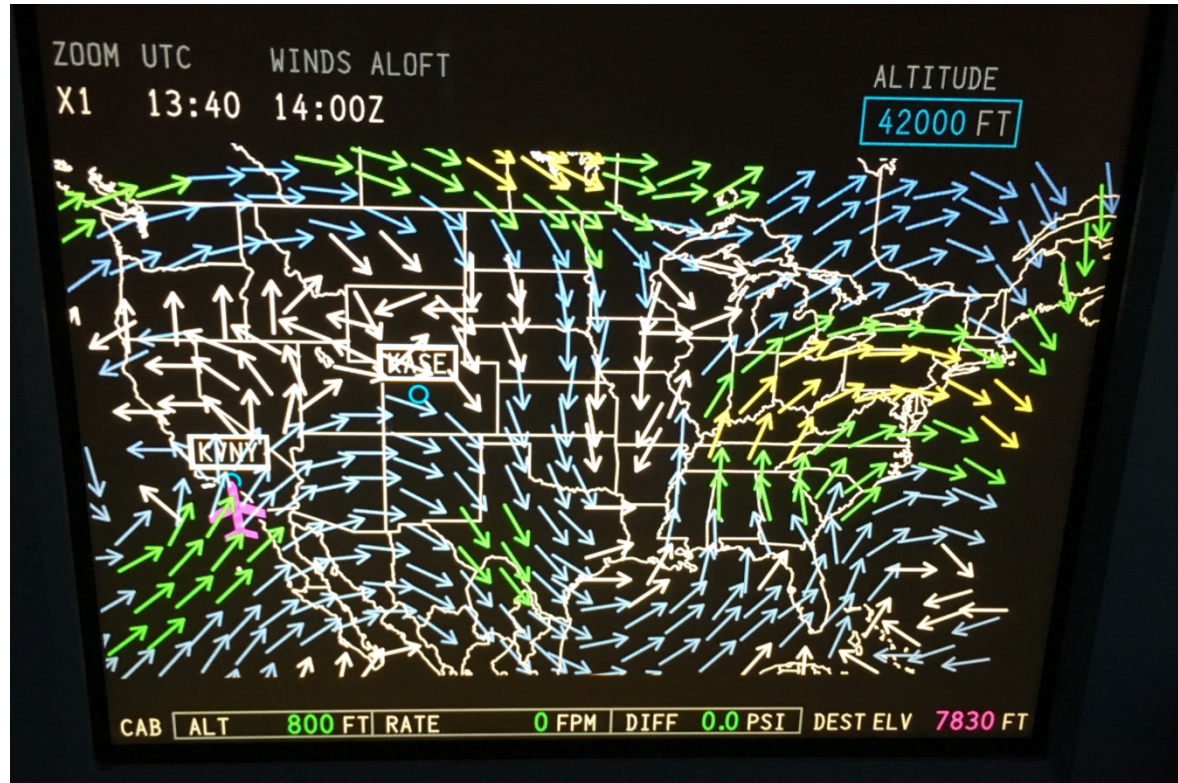


NEXRAD is an excellent tool for strategic weather avoidance. When evaluating weather close to the airport, how does cell resolution and intensity affect our operation and decision making?
Is the intensity accurate or does it disagree with our onboard radar system?





Rockwell Collins RTA-4112 Multi-Scan & Auto-Tilt Weather Radar in “action” while deviating around convective weather at FL450. Simply turn on, wait two or three sweeps, and enjoy a very sharp (gradient contours) and clear picture of convective weather activity.



Forecast Winds Aloft may not always display at optimized altitudes for flight operations. For example, the 175mb forecast winds at FL420 (unusable FL) may have to be interpolated or extrapolated to FL410 or FL430.



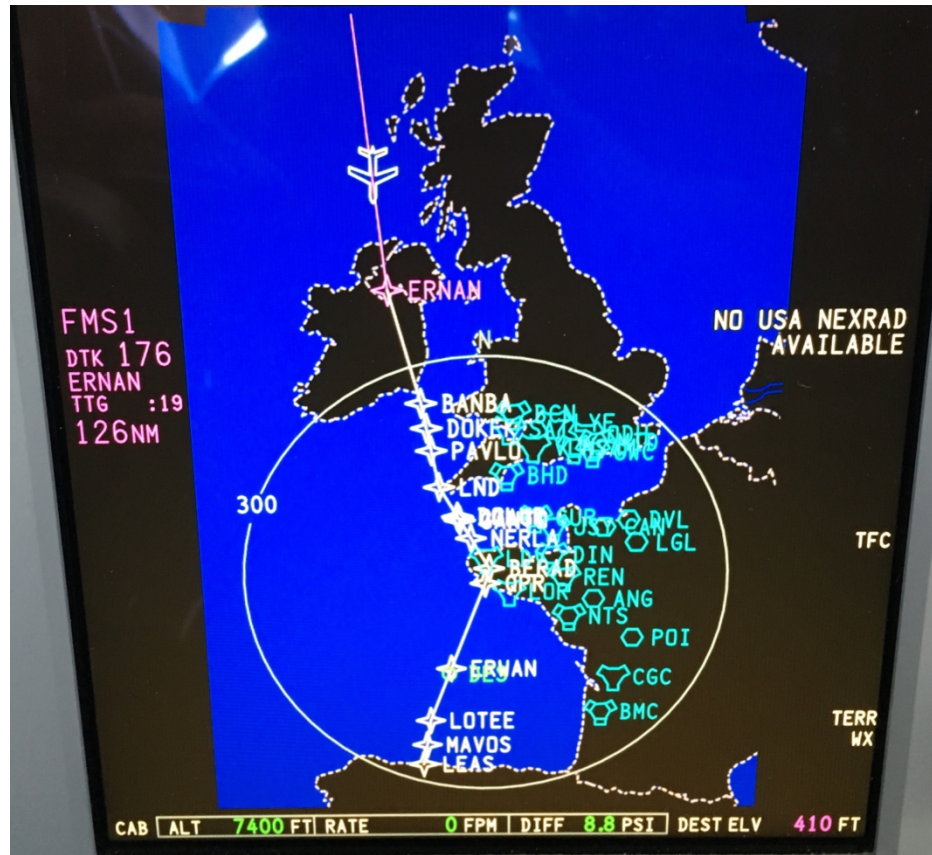
In-cockpit weather resources are great until they stop refreshing or the unit stops functioning. In this example, METARs, Echo Tops, and Lightning data is stale beyond defined latency thresholds and NEXRAD/SIGMET data is missing



Often portable solutions (iPad) can provide more timely weather info



Portable solutions may also be more cost effective for certain aircraft types where retrofit costs are extremely cost prohibitive



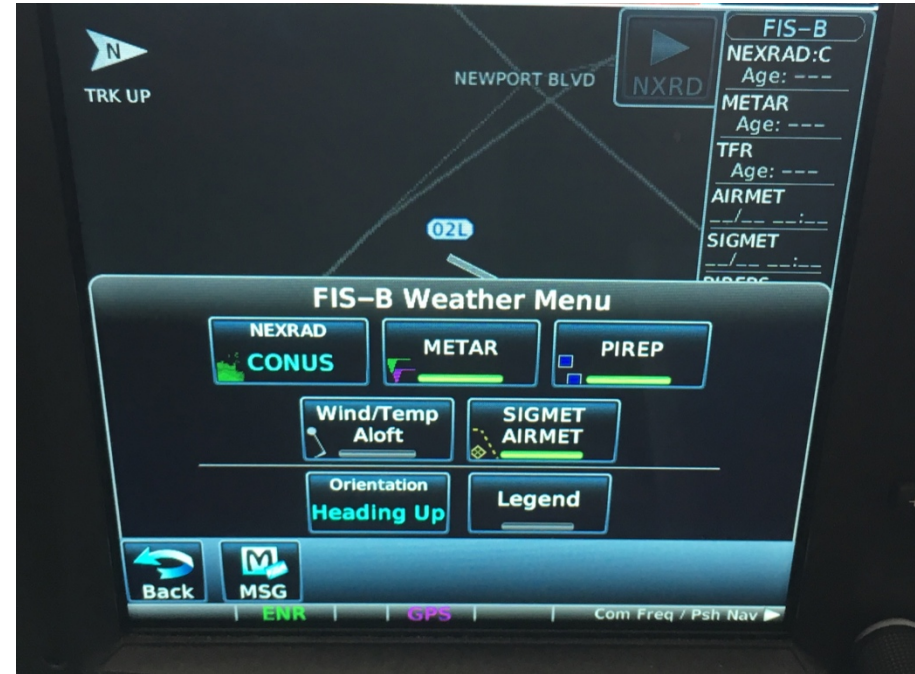
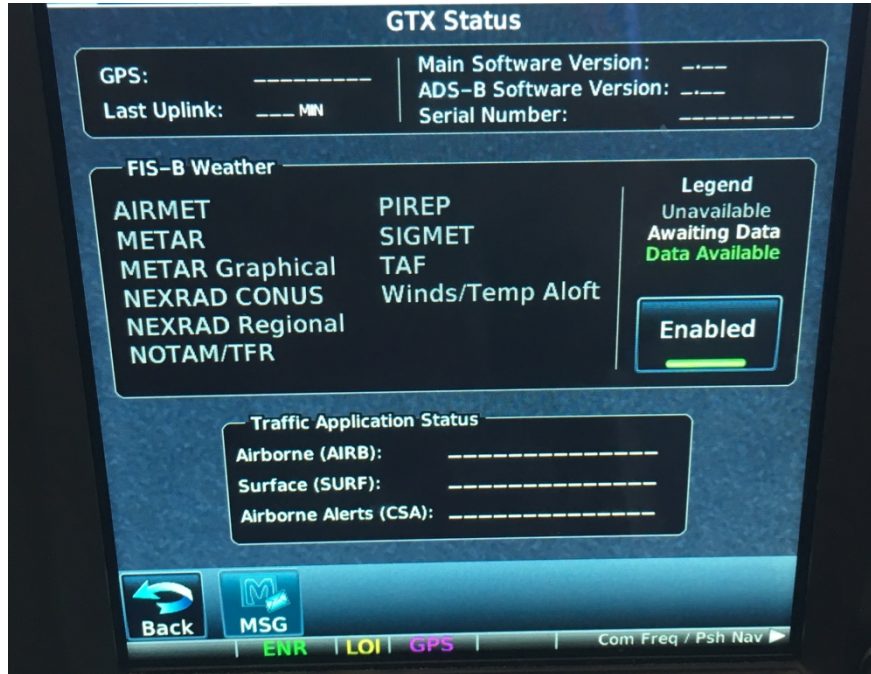
In-cockpit weather solutions using ADS-B In or XM WX work very well until you leave the United States. Weather information using these sources outside the USA may be limited or simply not available at all. Part 135 operations can span the world.



Brand new aircraft are being delivered today without ADS-B In. Many OEMs and Avionic Vendors have provided ADS-B Out solutions, but what about ADS-B In?



Many light Part 23 aircraft are starting to take advantage of cost effective ADS-B solutions which incorporate both OUT and IN. ADS-B In provides free weather and traffic info.



FIS-B weather, available through ADS-B In, can provide timely in-flight updates such as NEXRAD, METARs, TAFs PIREPs, Winds Aloft, SIGMET/AIRMET, NOTAMs and TFRs.

