

# NextGen Advancements

## *Don't Overlook the Multiple Safety Benefits of ADS-B In*

**W**hile Automatic Dependent Surveillance-Broadcast (ADS-B) Out will be required by January 1, 2020 for aircraft flying in most controlled U.S. airspace, general aviation operators may wish to consider the economic and safety advantages of simultaneously equipping with ADS-B In.

At this time, there is no FAA requirement to install ADS-B In. Pilots of ADS-B In equipped aircraft, however, can benefit from the enhanced situational awareness that comes with having subscription-free graphical weather delivered directly to the cockpit, as well as being able to see the same air traffic picture as air traffic controllers. For many pilots, having ADS-B In installed at the same time as ADS-B Out makes a lot of sense — your aircraft is already in the shop, and the safety benefits of ADS-B In are substantial.

### **Flying at Night and In and Out of Canyons**

Jay Cronk, an experienced pilot and certificated flight instructor (CFI) who has been flying for about ten years, owns and operates a Cessna 180 *Skywagon*. He spends much of his time flying in and out of small dirt strips deep in Colorado's Rocky Mountains. Although most of his operations are VFR, his Cessna is fully Instrument Flight Rules (IFR) capable.

Cronk is a big believer in ADS-B Out and In. He equipped his aircraft early on with a Garmin GTX 330 ES transponder combined with a hard-mounted Garmin GDL 39R receiver with a built-in Wide Area Augmentation System GPS receiver and an extended squitter. "I needed a new transponder anyway," he said, "so I decided just to do it all at once."

"Just about every time I fly, I'm glad I have ADS-B Out and In," said Cronk. "It's invaluable. When you are flying in the mountains, see and avoid is especially important, and with ADS-B the range is about six miles. Coming out of a canyon, for example, it's nice to have."

Cronk believes there are many benefits to both ADS-B Out and In that pilots do not yet realize. "Anyone with an ADS-B receiver will receive traffic alerts. That's a good thing," he said. "And with ADS-B Out, someone following me can see exactly where I am. That's a cool benefit."

Some of Cronk's flight training is at night. "It is critically important at night, because out here in Colorado it's so black at night. Additionally, with the forest fires and all the smoke we have to deal with out west, it helps a lot."

Cronk cites another benefit to ADS-B. On a recent trip, he flew over the Snake River Plain heading northwest into the mountains near Friedman Memorial Airport in Hailey, Idaho. He was at 10,500 mean sea level with VFR flight following. Air traffic control (ATC) called and asked if he had ADS-B. He said "affirmative." The controller said, "I had to ask because we usually lose radar contact with Visual Flight Rules (VFR) flights well before they get to your present position." Cronk said that "with ADS-B Out and In installed in my airplane, ATC was able to provide traffic advisories where otherwise they would not have known my position."

"I have a lot of friends who want to install ADS-B," said Cronk, "which is great because the real benefits are yet to come when everyone has it."

### **Commuting with ADS-B**

C.K. Haun is an experienced pilot who regularly flies a 1980 Mooney M20K 231 from San Jose to Boise, which means typically crossing three different weather patterns. Although he does not yet have an aircraft-mounted ADS-B installation, he uses a Stratus unit with an iPad for ADS-B Out and In. He has found ADS-B extraordinarily useful in both VFR and IFR operations.

"The weather data benefit is huge," said Haun. "I've had XM weather for a while but the ADS-B connection is more robust. The weather overlay on my charts on the iPad has the immediate, most real impact — lots of detail and lots of expandable

screen real estate to see the nuances of the satellite view and the radar picture.” Haun continues, “ Also very interesting is the ability to get the METARs quickly for my destination airport, and seeing two hours away what my landing will probably be like at Boise is very useful. Knowing, with a high probability, what approach might be necessary hours ahead of time allows a lot of prep and thinking time. It’s very useful.”


Haun said that ADS-B offers very rapid updates. “And even better, I know what direction the reported traffic is going and so the ability to plan ahead expands. When ATC calls traffic for me, I can get better situational awareness by glancing at the iPad screen than I get from ‘traffic, 3 o’clock, five miles.’ The graphical depiction of the traffic makes it more real to me and I know much better where to look if I’m in [Visual Meteorological Conditions].”

“Finally, knowing the aircraft speed from the ADS-B readout is huge. I’ve seen traffic at 140 knots and thought, ‘Ok, I’ll keep an eye out for a little guy

in the area.’ Then I’ve seen traffic at 350 knots and thought, ‘big guy, moving fast, be very alert here.’”

According to Haun, ADS-B is clearly beneficial for both VFR and IFR. However, in IFR the rapid weather reporting and graphical display — together with detailed traffic information — adds to the situational awareness and comfort when he is in the clouds.

The FAA is urging operators to equip soon with ADS-B Out to avoid a last-minute crunch, given a limited number of qualified repair stations. The equipment is available and the prices have come down considerably. When you equip, consider adding ADS-B In as well. The safety benefits are immeasurable — whether you are flying VFR or IFR.

For more information on how to equip for ADS-B, access [www.faa.gov/nextgen/equipadsb](http://www.faa.gov/nextgen/equipadsb). 

*Clifton Stroud is a contract writer/editor for Beacon Management Group assigned to the FAA NextGen Performance and Outreach office.*

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