



Four Good Reasons to Get an iPad

Integrated aviation applications

I'M FINDING MANY AVIATION uses for my Apple iPad. Last month, I wrote about the Aero Charts (CONUS) and SkyCharts Pro applications that are useful substitutes for sectional charts. They're only \$20 each, though they don't keep your airplane centered on a chart. Three integrated applications, ForeFlight, SkyRadar, and WingX, include true moving maps that keep the aircraft symbol centered on a map, and they include weather and airport information. A fourth app, Pilot My-Cast, includes similar features, but lacks a moving map. All of the apps are evolving rapidly, and I recommend you try them with the free trials most offer.

SKYRADAR

SkyRadar, formerly SkyScope, is the least expensive, with an annual subscription of \$24.95. Like Aero Charts, it stores chart data as vector graphics, essentially a database of points, lines, and curves used to create map images. That keeps the database small enough to include it in the application, so you don't have to download individual charts. It's one of two



When used with the optional ADS-B receiver, SkyRadar displays in-flight weather and some traffic. Here, the cursor was moved 51 miles from my aircraft position to see Miami weather. Clicking the down arrow would display Miami runway information, frequencies, and notices to airmen. The light blue arrows show aircraft and their relative altitudes. www.SkyRadar.net



ForeFlight excels as a preflight route and weather visualization tool. Dozens of weather charts are available when you have 3G connectivity. In flight, sectionals or IFR en route charts are used to monitor your position. Tabs along the bottom let you select airport data, file a flight plan with a flight service station, or write notes with your finger on a scratch pad. www.ForeFlight.com



Garmin's Pilot My-Cast is a good preflight route and weather visualization tool that includes airport information. Unlike the other applications, it doesn't include a moving map for showing aircraft position in flight. www.My-Cast.com

apps with a terrain database that displays yellow or red if you get too close to the terrain below.

Like the other integrated apps, SkyRadar includes runway data and a list of frequencies for each airport. I like that it displays private airports on its map, something rarely found in glass cockpit avionics. A direct-to function draws a course line from your present position to a destination, though it doesn't support multiple waypoint flight plans. Airspace information, like altitude limits, is available by panning the map cursor.

All four apps display METAR (aviation routine weather report) and TAF (terminal area forecast) data whenever you have 3G connectivity, meaning it's often unavailable in flight. But SkyRadar is unique in that it connects to an optional \$1,200 automatic dependent



WingX's moving map lets you add or subtract airspace, airways, runway extensions, terrain, and weather data. Here, higher terrain is shown southeast of the aircraft. The top data bar displays groundspeed and altitude, and a flight plan displays updated en route and arrival times. Windowing lets you view the moving map or an approach chart using a full or split screen. www.HiltonSoftware.com

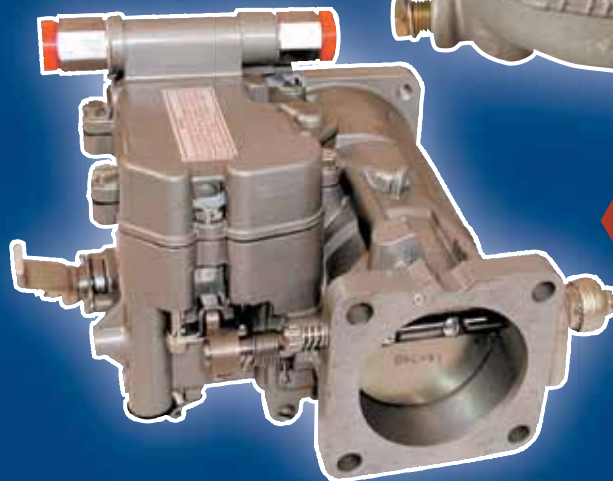
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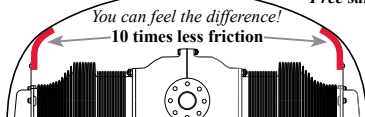
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SkyRadar's \$1,200 ADS-B receiver includes a plug-in, WAAS-capable GPS receiver to get an accurate aircraft altitude to aid in displaying vertical distance from terrain and traffic.

surveillance-broadcast (ADS-B) receiver so you can get in-flight weather data, provided you're in an ADS-B service area. Currently, service is available in Alaska, Philadelphia, Oregon, southern Florida, and western Colorado, but it should be available along the entire east and west coasts by the end of September.

I tried the ADS-B receiver with SkyRadar in southern Florida and easily received weather information. Traffic data is also displayed, but it's not as useful as you might guess. To conserve bandwidth, ADS-B only transmits traffic threats for aircraft equipped with an ADS-B transmitter. Two aircraft near Miami had



Sportair USA recently announced itself as an importer and distributor of the iCub from Zlin Aviation, featuring a panel mounted iPad aviation information center. The iPad comes loaded with WingX Pro7, ForeFlight Mobile HD and ForeFlight Charts, iHUD, and MotionX GPS HD.

ADS-B transmitters, and I could see traffic near those aircraft, but I couldn't see any traffic near me since I didn't have an ADS-B transmitter. Most aircraft will be required to equip with an ADS-B transmitter by 2020, so the receiver should show close to 100 percent of traffic by then.

FOREFLIGHT HD AND WINGX PRO7

ForeFlight and WingX are the leaders in integrated aviation applications for smart phones. WingX has been around longer, having originated on Windows Mobile and later appearing on BlackBerry smart phones, but ForeFlight was the first of the two to appear on the iPhone and iPad. Either will meet the needs of the majority of pilots, though there are significant differences in their features.

Keep an open mind, explore these applications, and I think you'll be pleasantly surprised by both.

I suspect there are strongly loyal users of both products, and lest I attract the ire of either user group, let me point out how primacy applies: People tend to prefer the application they learned to use first. Keep an open mind, explore these applications, and I think you'll be pleasantly surprised by both.

Co-founder Tyson Weihs describes ForeFlight HD for the iPad as "a solution that covers pre-flight really well and then works as a great cockpit companion.... Even though we have moving map capability (greatly enhanced shortly), it's not a place where we want pilots to be focusing their time and attention." To that end, ForeFlight's relative strength is as a weather visualization tool for preflight planning. It also has the strongest set of weather maps and airport information for international locations.

For example, when you have 3G connectivity, ForeFlight lets you overlay a multiple waypoint flight plan on 10 different weather maps so you can see how your planned flight path compares with current weather. Maps include next generation radar (NEXRAD), satellite imagery, winds, dew point spread, and lightning data. In a separate imagery section, ForeFlight accesses most any type of aviation

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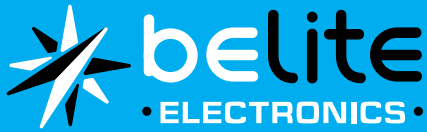


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weather map you might find on the Internet. A separate airport data section lets you type in an airport identifier to retrieve Airport/Facility Directory (A/FD) and AOPA Airport Directory (AAD) data and zoomable instrument approach charts you download prior to flight.

All four applications are rich in features too numerous to cover in this column. And if you don't own an iPad, ask yourself, "Why not?"

In the air, a moving map lets you see your position and flight plan route on any sectional maps or instrument flight rules (IFR) en route charts you've downloaded prior to the flight. A flight plan summary that integrates winds aloft data to show your planned time en route to each waypoint can be displayed in the upper right, though it doesn't update in flight to show actual estimated arrival times based on current GPS ground-speeds. ForeFlight is sold on a subscription basis for \$24.99 for three months or \$74.99 for a year.

WingX Pro7's relative strength is as an in-flight moving map with terrain data and flight plans that update in real time. It has an excellent set of textual and graphic weather images that will meet most flying needs, though it has fewer images than ForeFlight (both had more than I cared to count). It also includes instrument approach charts and A/FD and AAD data.

Its moving map and windowing, which lets you see other data while viewing the map, are exceptional. The moving map uses vector graphics, so all data is downloaded with the application, and only instrument charts need to be downloaded prior to flight.

Layering keys lets you add and subtract map data like you would on a portable GPS. Choices include airspace, airways, runway extensions, terrain, and weather data. METAR data displays as colored circles over airports that you tap to read, provided you've downloaded weather data prior to flight or happen to get a 3G connection in the air. The top data bar shows ground-speed, heading, and altitude, and a flight plan shows distance, heading, and estimated time en route, based upon actual groundspeed, for flight plan waypoints.

A windowing system lets you divide the large iPad screen to display additional information. For example, the moving map can occupy the entire screen or share it with an editable flight plan, A/FD and AAD data, or an instrument approach chart. Approach charts can also occupy the full screen and be zoomed to examine details. WingX includes an E-6B, flight plan filing, and a documents section with the Federal Aviation Regulations, Aeronautical Information Manual, and a list of recommended endorsements used by flight instructors. The app is sold on a subscription basis for \$99.95 per year.

GARMIN'S PILOT MY-CAST

A fourth app to watch is Pilot My-Cast. I found it's the first app I turn to if I just want to see NEXRAD data for the entire United States, since I can reach the data just by opening the app. It includes 10 other maps with the weather data pilots use most. A flight plan section lets you enter a flight plan and see it overlaid on any of the maps. It also includes information for U.S. airports.

The key thing this app lacks is a moving map, but Garmin knows a lot about moving maps, so the product bears watching for new features. It's available on a subscription basis for \$9.95 a month or \$99.95 a year.

All four applications are rich in features too numerous to cover in this column. And if you don't own an iPad, ask yourself, "Why not?" *EAA*



Max Trescott, EAA 531980, is an aviation author and publisher and was the 2008 National CFI of the Year. For more pictures and details on these iPad applications, visit www.MaxTrescott.com.