



AVIATION APPS

EFB apps gaining features and functions

Nearly six years ago, in April 2010, Apple began delivering the iPad, and since then pilots have adopted mobile devices seemingly faster than any other new technology introduced in aviation. While many pilots were first exposed to this kind of technology with purpose-built electronic flight bags (EFBs), the iPad and then Android tablets introduced much more powerful, less costly and easier-to-upgrade devices that quickly made dedicated EFBs almost obsolete (although they are still used in many large aircraft).

John Zimmerman, writing in the [Air Facts blog](#), believes that the iPad is not popular just because it is convenient and relatively inexpensive but also because it has made flying safer. He pointed out that for pilots who fly different aircraft, each equipped with unique avionics systems, "Tablets democratize avionics. If Garmin adds an incredible new feature to the G1000, the vast majority of pilots don't have access to it. With tablet apps, though, every pilot can have that new feature overnight—often for free. Cutting-edge avionics are a reality for anyone with a \$500 tablet and a \$75 app, not just owners of new airplanes."

Safety features are also a bonus with mobile devices, Zimmerman noted, bringing inexpensive yet powerful terrain awareness and onboard weather services via ADS-B IN to general aviation cockpits.

Yet light airplane pilots aren't the only ones flying with tablets and ADS-B IN receivers; these devices work equally well on business jets, and bizav pilots

appreciate their benefits. During a recent Phenom 300 flight, this writer tested an Appareo Stratus 2S ADS-B IN/AHRS device, and it worked well at all altitudes, including receiving ADS-B ground stations while flying in the vicinity of Puerto Rico.

While aviation app developers have been hard at work upgrading their products and offering new features, there have been some changes in the aviation app world and few new blockbuster developments. Some companies have added rich new features, while others have expanded the types of device their apps will run on, including Amazon's incredibly inexpensive Fire tablet. There has been a slowdown in the ranks of new flight planning and navigation app developers, but there are plenty of these already, and for pilots already accustomed to using an app, switching to a different one is a big step.

One disappointment in the world of aviation apps is the lack of unique features available on the Apple Watch. Some developers were quick to make their apps Watch-ready and offered some useful features, but after that initial burst of enthusiasm last year, few new Watch-based features have been released. AerovieReports was the first EFB app to offer Watch features, and it remains at the forefront for aviation Watch applications. ForeFlight Mobile has also developed Watch features. One glaring missing item from aviation Watch apps, for example, is an easily settable countdown timer for timing an approach. The Watch can

play an audible alert and provide a haptic tap on the wearer's wrist at the end of the countdown. There are likely other useful Watch features that could be done, but so far, developers don't seem to be busy on that front, perhaps because the Watch adoption rate hasn't been as rapid as that of the iPhone, iPad and Android devices.

The reason the uptake of smart watches among pilots is low may be that there are few compelling apps. If app developers focus on making smart watches more useful in the cockpit, more pilots will add them to their gadget bags. Garmin has done a good job with this with its [D2 watches](#), which take full advantage of the small display real estate to show a moving map, HSI and multiple fields of flight information.

Hilton Software's WingX Pro7 was the first app to tap the smart watch market, on the Pebble watch. The Pebble integration was announced nearly two years ago, however, and Hilton Software hasn't done anything new in the watch arena, nor anything on Android or Apple watches.

When it comes to aviation, there are more than just Apple and Android devices; Microsoft's Surface tablets have made inroads with airlines, for which Jeppesen has written a Windows version of its Mobile Flitedeck software. But so far, there doesn't seem to be a huge demand for the Surface in business aviation, and app developers haven't rushed to port existing apps to the Surface, and as a result there are few new Surface-based aviation apps.

EFB apps

123west Software Naviator (● \$34.99/year)

Naviator is a full-featured Android EFB app, with geo-referenced maps and approach charts, synthetic vision and a worldwide database of more than 53,000 airports and nav aids. The database includes obstacles and towers in the U.S. (and its territories) and parts of Canada and Mexico. Naviator can be used for preflight planning, filing flight plans via Lockheed Martin, rubber-band route editing and navigation with a graphical HSI on a split-screen view. Flight recording is also available.



AerovieReports (● \$69.99/year)

AerovieReports has become a powerful EFB application at a reasonable price, with all the typical capabilities such as VFR and IFR charts, geo-referenced approach charts, Lockheed Martin flight plan filing, terrain awareness and depressurization detection (for iPads/iPhones equipped with the barometric



sensor). AerovieReports' Pirep submission feature sends reports directly into Lockheed Martin for quick dissemination into the National Airspace System. The feature is particularly useful now that more aircraft are equipped with in-flight Internet connectivity.

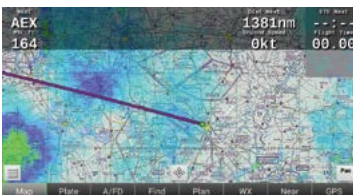
The vertical profile feature in AerovieReports shows not only terrain relative to the flight-planned route but also allows the user to view Airmets/Sigmets, winds, weather and the freezing level, all laid out on an easy-to-interpret diagram.

Where Aerovie really shines is its Apple Watch support, which is currently the most comprehensive of any aviation app.

On the Watch, AerovieReports has pages dedicated to count-up timers and a flight timer, an audio landing briefing for the destination airport set in the flight plan, checklists (which can be read out audibly or clicked through), instruments (GPS altitude and speed), weather radar with adjustable range and airport information that provides an airport diagram, weather indicator, frequencies and runways.

Avare (● free)

Avare was created and is supported by a volunteer group that



continually adds features and capabilities. There are no advertisements, and Avare is open-source, allowing developers to create AddOn Apps to extend Avare's abilities. One such example is the ChartSack, which allows users to add and navigate on any type of map, provided it is in the correct file format.

Avare features include geo-referenced maps and approach charts, weather (Metars, TAFs and TFRs) and Bluetooth connectivity to external GPS and ADS-B receivers.

AvPlan EFB Pro (● \$139/year)

AvPlan has added an Android version, and while this is in a Lite format, the full Android EFB should be available in the first half of this year.

AvPlan doesn't currently support Windows computers such as Microsoft's Surface tablet, but AvPlan might have something coming for that machine.



AvPlan is available with full coverage for Australia, New Zealand and the U.S. A worldwide edition is also available, with weather information, performance calculations and mapping for some regions in Southeast Asia; flight planning will be offered at some point.

The iOS version of AvPlan includes all maps and approach charts, with geo-referencing, Lockheed Martin and CSC Duats weather briefing and flight plan submission, terrain warnings and altitude callouts, a database of aircraft types and performance and weight-and-balance calculations. AvPlan's profile

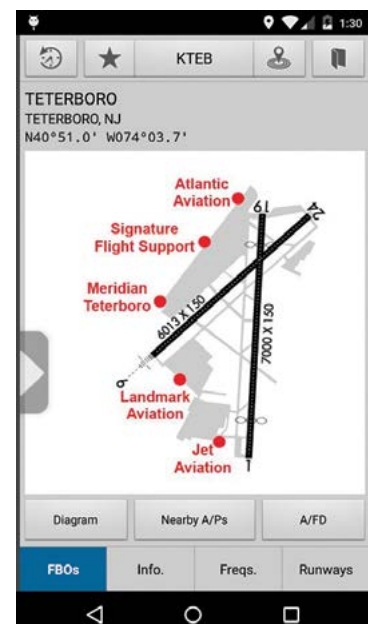
view displays flight path, terrain, special-use airspace and obstacles.

AvPlan is another of the few aviation apps that offer Apple Watch support. Watch features include UTC time; departure, destination and alternate airport distance, bearing and weather indicator; flight time and endurance remaining; four count-up timers; nearest airports with bearing, distance and weather indicators.

FltPlan Go (● free)

FltPlan.com keeps adding new features to its free EFB app, making it an excellent contender for either a primary or back-up EFB app. FltPlan Go is tightly integrated with the company's free Web-based flight planning service, and navlogs created on the website can be imported into the app. In addition to geo-referenced maps and approach charts, FltPlan Go includes a checklist function and a scratchpad for typing or drawing "doodles" that can be saved.

With FltPlan Go, users can draw not only on airport diagrams and approach charts but also on maps, something that no other app offers.





When drawing, say, a red circle around a TFR on a sectional chart, the drawing transfers automatically to the en route chart when the user switches between chart layers.

Another new feature on FlightPlan Go is a cloud-tops measuring tool.

ForeFlight Mobile (iPhone \$199/year)

ForeFlight Mobile has grown in sophistication, with many refinements added to its moving-map and chart capabilities, including synthetic vision, terrain and runway hazard advisor and FBO locations on airport diagrams. ForeFlight also offers full weight-and-balance, in addition to its longstanding flight-planning capabilities.

The big news this year for ForeFlight is its Graphical Briefing service, which delivers a comprehensive and easy-to-interpret preflight weather briefing. The new briefing is so well designed that it should help encourage pilots to spend more time evaluating conditions before take-off, instead of glossing over mind-numbing and virtually unreadable Notams or trying to remember obscure weather codes.

What makes ForeFlight's Graphical Briefing so simple is that it is

built around the standard briefing from approved government sources and includes adverse conditions, synopsis, current conditions, en route and destination forecasts, Notams and so on. After the user plans a flight, the briefing is laid out with the description on the left side and a plain-language (raw text is available) description on the right, along with the applicable diagram. As much as possible, ForeFlight has pulled out information to make the particular item readable and legible. Unfortunately, this doesn't include getting rid of all-uppercase lettering in some Notams, especially TFRs and general FDC Notams, or in convective outlooks. However, most other Notams are translated and much easier to read, including en route Notams of all types. Area forecasts are far easier to read in the Graphical Briefing, too.

Recent additions to ForeFlight include a logbook to complement the Track Logs recording feature as well as automatic Track Log recording, official Area Forecast Discussions in the airports section, a beta release of ForeFlight Web, optimization for running ForeFlight on the large iPad Pro, two-way flight plan transfer with Garmin avionics using Garmin's Flight Stream 210, and much more. ForeFlight works with the Stratus 1S and 2S ADS-B receivers.

Garmin Pilot (iPhone \$74.99/year U.S.)

Garmin Pilot has grown into a sophisticated flight planning and moving-map application, and in recent years has become more integrated with Garmin avionics. Garmin Pilot users will find familiar conventions when flying with the latest Garmin avionics, especially the touchscreen GTN navigators and



the touchscreen-controlled G2000 through G5000 flight decks.

Garmin has added Lockheed Martin flight plan filing integration and a beta VFR ICAO flight-plan-filing service, which is something pilots need to get used to as the FAA plans to require that all flight plans use the ICAO format starting October 1. Another recent addition is a log-book function.

Garmin offers a variety of chart coverages around the world, and its Global Premium service (\$199/year) includes Jeppesen Worldwide NavData, terrain with alerts (and obstacles with alerts in the U.S. and Europe), radar and satellite imagery in western Europe, Australia, Canada and the U.S. and worldwide lightning, Metars, TAFs, Airmets, Sigmet and winds aloft.

All versions of Garmin Pilot include the patented Nav Panel, which shows an image of instruments (ground-speed, HSI, GPS altitude, VSI) on a split screen window. Alternatively, the split screen can also display charts, terrain and flight plan information.

Garmin Pilot works with Garmin's own GDL 39 ADS-B receivers, and it can share flight plans with Garmin avionics via the Garmin Connex system. The GDL 39D with AHRS or a Connex-compatible configuration also drives Garmin Pilot's attitude indicator on the SynVis (synthetic vision) page. This is a full screen in Garmin Pilot and includes a graphical HSI and night mode. Garmin's Target Trend traffic is also available using the GDL 39 or Connex. Target Trend uses Garmin's relative-motion technology to help pilots more intuitively judge aircraft

trajectories and closure rates. Garmin's TerminalTraffic shows ground-based ADS-B-equipped traffic color-coded with distinct colors and symbols to differentiate it from airborne traffic.

A welcome feature in Garmin Pilot is Smart Airspace, which allows setting of altitude filters to eliminate annoying nearby airspace warnings. Garmin's Scratch Pad is also useful, offering not just a blank page for drawing on but also pre-formatted forms for ATIS, clearances and pilot reports.

Garmin Pilot allows users to set an alert at a waypoint. This is enormously useful as a reminder to make a position report, or if instructed by ATC to report crossing XX VOR or report 10 miles from the VOR and so on. This feature is available in both the iOS and Android versions.

While the Android version of Garmin Pilot offers most of the features of the iOS version, it currently doesn't include SynVis.

GlobalNavSource EFB (iPhone \$39.99)

GlobalNavSource offers a relatively low-cost EFB application with all U.S. maps and approach charts, weather overlays and moving-map/geo-referencing. Users can run a split-screen mode and view charts on one side and terrain or other charts on the other side. Unlike most other EFB apps, GlobalNavSource doesn't offer flight-plan filing.





WingX Pro7

(Apple \$149.98/year)

Hilton Software's WingX Pro7 full-featured EFB app pioneered many new developments in the aviation app field, including the first synthetic vision offering, passive radar altimeter and the newest feature, "traca" route-planning technology. Traca allows the user to trace a route on a map, and WingX automatically turns that into a flight plan defined by instantly created user waypoints. Hilton Software calls this "rubber-banding on steroids," and it is especially helpful when a quick reroute or diversion is required.



WingX was also first to release watch compatibility, with the original Pebble in 2014. These features include GPS speed, track, altitude and Waas flag, ETE, ETA, desired track and distance to next waypoint and destination, battery indicators and timer. The timer was the first countdown timer on a smart watch aviation application, and it vibrates when the time reaches zero. The watch can also be set to vibrate when the aircraft passes a fix on a route, at a pre-selected altitude and when the airplane descends below 1,000 feet agl as a reminder to run the pre-landing checklist.

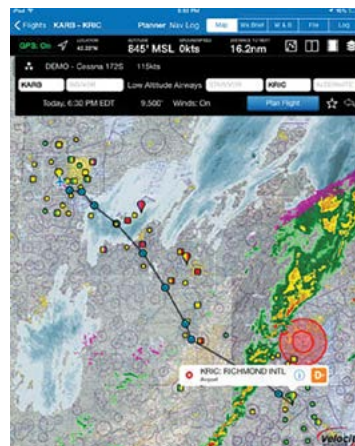
For the ultimate in low-cost EFBs, Hilton Software has developed WingX Pro7 for Fire, which runs on Amazon's \$49 Fire tablet. There is no extra charge for existing WingX Pro7 users, who can run the app on multiple devices.

iFlightPlanner Premium Plus

(Apple \$139.99/year)

The iFlightPlanner system is a combination of desktop or laptop planning on its website, integrated with the iFlightPlanner iOS app. Many of iFlightPlanner's features are available free, which gives buyers the opportunity to wring out the product before committing to a full Premium Plus subscription.

The Premium Plus iFlightPlanner online and iOS app includes weather and full flight-planning features such as intelligent auto-routing, rubber-band route planning, coded departure route, preferred route and tower route lookup, comparison of optimum altitudes, detailed navlogs and sharing favorite routes and custom waypoints with multiple users. The graphical weight-and-balance calculator and flight plan filing are also not available in the free version. Geo-referenced airport diagrams and approach charts are available only in the Premium Plus version. The iFlightPlanner logbook with pilot currency tracker is not available in the free version. All versions offer a cockpit voice recorder function, notepad and geo-referenced and seamless maps (VFR, IFR and terminal aeronautical charts).



Jeppesen Mobile FliteDeck

(Apple, free, but data subscription required)



Jeppesen's Mobile FliteDeck is one of the key EFB apps for global travelers, given the company's long experience creating maps and charts for airports and airspace around the world. Although Mobile FliteDeck doesn't offer flight plan filing or traffic display, it does permit route planning with rubber-band editing and includes preflight text and graphical weather downloads.

En route and approach charts and airport diagrams are geo-referenced. Users can set a speed-based switch for automatic display of the airport diagram on landing.

Recent additions to Mobile FliteDeck (Version 2.7) include recently cleared routes, flight plan importing improvements, customer-inserted charts capability, a VFR en route layer and Chart Check, which allows companies to monitor and verify data currency, and the FliteDeck version for flight department users. A new feature in Version 2.6 allows addition of SIDs and Stars in route plans, and these are then depicted on the en route charts.

Navtech iCharts

Navtech offers an alternative for commercial operators needing electronic chart and flight planning solutions, but its products haven't been targeted at the business aviation market. In December, however, [Airbus announced that it has agreed to purchase 100 percent of the shares of the Navtech group](#), and perhaps this will stimulate a move into business aviation to compete with Boeing-owned Jeppesen.

FlyQ EFB

(Apple \$119/year)

FlyQ EFB by Seattle Avionics is a comprehensive EFB app with customizable split-screen views and 3-D synthetic vision with a highway-in-the-sky path display. For flight planning, FlyQ includes a handy preflight checklist that ensures all needed information is downloaded for the planned trip.



FlyQ provides seamless sectional charts, geo-referenced maps and approach charts, compatibility with most ADS-B receivers, display of approach charts on maps and more than 700 geo-referenced Seattle Avionics airport diagrams. Recent developments include a substantial speed up of the 2-D mapping engine, a new user interface that maximizes screen space, a new GPS/weather and ADS-B connection status indicator and addition of a procedure button to airport searches for quick access to approaches.



ADS-B RECEIVERS

The portable ADS-B receiver market is one area in the aviation app field where new developments continue at a fairly rapid pace. The market was pioneered by companies such as Appareo/ForeFlight (Stratus), Radenna (SkyRadar), Garmin (GDL 39),

Sagetech (Clarity), Levil Technology (iLevil) and Dual Electronics (XGPS170). But other companies have joined the fray, and there are now more choices than ever, including a low-cost entrant from Bad Elf and a do-it-yourself

receiver called Stratux. Most of the key features (free ADS-B in weather and traffic) work only in the U.S., but with many apps now offering synthetic vision with attitude displays driven by electronic AHRS sensors built into the receiver, there is a market for these in other parts of the world. In the U.S. there are two ADS-B out/in frequencies: 978 MHz and 1090 MHz. The free weather

information provided by the FAA is delivered only on the 978-MHz ADS-B in frequency. While ADS-B ground stations rebroadcast traffic information on both frequencies, a portable receiver can receive air-to-air traffic only on the frequencies with which it is equipped. Both, however, will receive the rebroadcast information, which includes traffic that ATC sees on radar.

ADS-B Weather and Traffic Receivers

Business aircraft operators value the benefits of in-flight near-real-time access to weather information. While some aircraft are being equipped with ADS-B in receivers as part of ADS-B out installations, portable ADS-B in devices are easy to carry from aircraft to aircraft and offer wireless connectivity to mobile devices with free weather and traffic information as well as built-in GPS receivers. Note that some receivers offer one and others both ADS-B in frequencies (978 and 1090 MHz). Some also include AHRS sensors, which equip tablets and phones to serve as an emergency backup attitude indicator/PFD and also facilitate display of synthetic vision, when available.

Receiver	Apps	Other Features	ADS-B Frequency	AHRS	Wireless	Price
Appareo Stratus 1	ForeFlight Mobile	Replay, stores weather when iPad is off	978 MHz		Wi-Fi (multiple devices)	\$549
Appareo Stratus 2	ForeFlight Mobile	Replay, data recorder, pressure altitude sensor	978 and 1090 MHz	√	Wi-Fi (multiple devices)	\$899
Dual Electronics XGPS170	Avare, AvNav EFB, eKneeBoard, FlightPro, FitPlan Go, FlyQ EFB, iFlyGPS, Naviator, WingX Pro7	includes removable antenna, external available	978 MHz		Bluetooth (2 devices)	\$499
Dual Electronics XGPS190	Avare, AvNav EFB, eKneeBoard, FlightPro, FitPlan Go, FlyQ EFB, iFlyGPS, Naviator, WingX Pro7	includes removable antenna, external available	978 and 1090 MHz	√	Bluetooth (2 devices)	\$849
Flight Data Systems PathFinder	AvNav EFB, Avare, eKneeboard, FlightPro, FitPlan Go, FlyQ EFB, iFly GPS, Naviator, WingX Pro7	Includes suction mount	978 MHz		Wi-Fi	\$549
Flight Data Systems PathFinder 2	AvNav EFB, Avare, eKneeboard, FlightPro, FitPlan Go, FlyQ EFB, iFly GPS, Naviator, WingX Pro7	Includes suction mount	978 and 1090 MHz		Wi-Fi	N/A
Garmin GDL 39	Garmin Pilot	TargetTrend and TerminalTraffic	978 and 1090 MHz		Bluetooth	\$599
Garmin GDL 39D	Garmin Pilot	TargetTrend and TerminalTraffic	978 and 1090 MHz	√	Bluetooth	\$899
iLevil SW 2	Air Navigation Pro, Avare, AvNav EFB, FlightPro, FitPlan Go, FlyQ EFB, iFly GPS, Naviator, WingX Pro7	Roll, pitch, magnetic heading, rate of turn, inclination, and G-meter data; in/out serial communication, solar charging	978 MHz and 1090 MHz	√	Wi-Fi	\$1,195
Radenna SkyRadar-D2	SkyRadar, WingX Pro7, iFly GPS, FlyQ EFB, FlightPro	External power only (no battery)	978 and 1090 MHz		Wi-Fi	\$699
Radenna SkyRadar-DX	SkyRadar, WingX Pro7, iFly GPS, FlyQ EFB, FlightPro	External power only (no battery)	978 and 1090 MHz	√	Wi-Fi	\$849
Sagetech Clarity	AvPlan EFB, eKneeBoard, FitPlan Go, FlyQ EFB, GlobalNavSource, WingX Pro7	Includes gel pad and sun shade	978 and 1090 MHz		Wi-Fi	\$1,150
Sagetech Clarity SV	AvPlan EFB, eKneeBoard, FitPlan Go, FlyQ EFB, GlobalNavSource, WingX Pro7	Includes gel pad and sun shade	978 and 1090 MHz	√	Wi-Fi	\$1,249
SkyGuardTWX	iFly GPS, FlyQ EFB, Naviator, SkyRadar, WingX Pro7, Xavion	External power only (no battery)	978 and 1090 MHz		Wi-Fi	\$1,525
SkyGuardTWX Vision-Pro	iFly GPS, FlyQ EFB, Naviator, SkyRadar, WingX Pro7, Xavion	No battery. Includes 978 MHz ADS-B out (subject to FAA authorization testing). Squawk model available (detects onboard transponder).	978 and 1090 MHz	√	Wi-Fi	\$1,975



Gyronimo offers fully capable weight-and-balance and performance apps for a variety of helicopters and light aircraft. Prices range from \$13.99 to \$59.99. For light aircraft, features include weight-and-balance, takeoff and landing performance and climb and cruise performance; all of these use current weather for the calculations. Also included is a stall speed and load factor calculator that clearly illustrates load factor versus bank angle along with an airspeed indicator and flaps position gauge. The helicopter apps provide detailed weight-and-balance and performance information in an easy-to-use and -interpret format that will save pilots hours of poring over inscrutable graphs.



Textron Aviation

Textron Aviation offers a variety of apps for owners and operators of Cessna and Beechcraft airplanes. The Technical Publications app provides access to all technical documents such as maintenance manuals, parts catalogs, wiring diagrams, NDT guide, structural repair manuals, component maintenance manuals, service bulletins and letters and so on. The Direct Approach publication, available on mobile devices and on the Web, provides access to service documents, videos, technical articles and product information.

For Citation weight-and-balance and performance calculations, CLCalc and CPCalc offer approved data that simplifies pilots' preflight tasks. CPCalc users have access to better field performance and higher takeoff weights than are available using the AFM, according to Textron Aviation.

The Electronic Operating Manual helps Citation pilots calculate trip time, fuel and distance, and for many models GreenTrak technology for optimizing the flight parameters to minimize costs and fuel burn. Cessna flight manuals also have their own app, and these include updated information, checklists

and operating manuals. Checklists include hyperlinks to procedures and content such as temporary changes.

For Cessna single-engine aircraft, the iFlite app provides access to Cessna pilots operating handbooks and an E6B calculator.

FLIGHT BRIEFING/ LOGGING



CloudAhoy

The CloudAhoy flight briefing app continues to add features. Users can now embed their own action-cam videos into their CloudAhoy flight debrief, then show the video alongside the debrief. CloudAhoy now accepts flight log files from the ForeFlight app, Bad Elf and Dual XGPS160 portable GPSs, Garmin G1000 log files, Garmin Virb action cams, X-Plane over Wi-Fi and GPX files. Or pilots can use the CloudAhoy app running on iOS or Android devices to record flights.

The debriefs can be easily shared with anyone by sending a link to the debrief. And the debrief can show 3-D and 2-D IFR approaches; a synthetic vision ani-



mation of the cockpit view, which can be overlaid with glass gauges; an overlay on VFR or IFR charts, wind, airspeed and heading; and details of specific maneuvers.

CloudAhoy is an excellent tool for flight instructors to debrief students after a lesson, and also for pilots to evaluate their own performance.



Cockpit Apps iLog

In this age of electronic marvels, it's hard to believe that commercial pilots still have to fill out flight logs on paper. The Cockpit Apps iLog replaces paper forms and the logbook "can" with a simple-to-use iPad app that walks the pilot through a typical duty day.

The app automatically sets the "block out" time as one hour after activating the duty time, but this can easily be adjusted later if necessary. For the first flight of the day, iLog asks for current RVSM ground altimeter checks, but this can be switched off for non-RVSM aircraft. There is also a VOR check module.

After fuel quantity has been entered, the next step is for iLog to capture the actual block out time, then takeoff time. During the flight, the pilot must record altimeter settings for RVSM. After landing, the fuel burn for the leg is recorded. Pilots can also log the type of instrument approach. And iLog asks for APU total time for maintenance purposes.

One of the main purposes of the flight logs is to capture maintenance discrepancies, and iLog allows the pilot to record any problems at any time during the flight. Items can be deferred per the MEL as well. After the flight, all the data is sent to the appropriate company department.

WEATHER



Appventive Aviation Weather

This app was developed to tap into the experimental aviationweather.gov data and deliver information on the iPhone and iPad. The app's simple layout offers access to textual weather, hazards, radar, satellite, area forecast discussions, winds aloft and wind graphics, area forecasts and surface progs. While the

app includes a translator for Metars and TAFs, there is no translation available for other products such as area forecasts or Pireps. But this is still a useful tool to learn more about government weather products.



Honeywell Weather Information

Honeywell's Weather Information Service is accessed via a tablet mobile app, which is continuously updated with the latest weather, with a strong focus on hazardous conditions. While pilots can use the Weather Information app to view hazardous weather conditions on a map display, another function is to help optimize the flight path. In addition to updated weather information, the app offers a 3-D winds-aloft display so pilots can choose the most efficient altitude for their route. Dispatchers can also use the app so that they are looking at the same weather information as the pilots they are working with.

Other weather products are available on the app, such as Sigmet, Metars, TAFs, icing forecasts and ATIS broadcasts.



WSI PilotBrief Optima

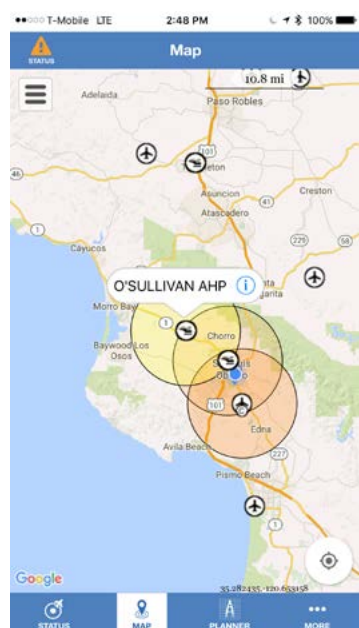
Pilotbrief Optima provides pilots with real-time in-flight weather, Notams and critical flight information procured from WSI's massive weather, airport and flight information system. The app also supports dynamic flight planning with forecast radar, a distance and bearing tool, ocean tracks visualization, forecast echo tops information and precise lat/long (seconds, not just degrees), as well as a more user-friendly interactive tool bar for accessing features. For in-flight use, pilots can update WSI weather data via connectivity systems (Gogo Business Aviation air-to-ground or satcom) or tap into SiriusXM or ADS-B IN.

DRONES



B4UFLY

The FAA released this app to help owners of radio control model airplanes and drones figure out where it's safe and legal to fly their machines. B4UFLY pops up a map, based on the location of the user, showing status of



that location in four categories: prohibited; use caution/check restrictions; warning/action required; and data unavailable. If the user were inside a TFR, for example, flight would be prohibited and clearly marked as such.

The most frequent category that comes up is the warning zone, usually because the user is within five miles of an airport; the app knows every private airport and heliport in the FAA's database. While it's not illegal to fly within five miles of an airport, model/drone pilots are required to notify the airport operator or tower, if there is one. However, B4UFLY provides no

information about how to contact anyone at airports and heliports, and it is up to the user to figure that out.

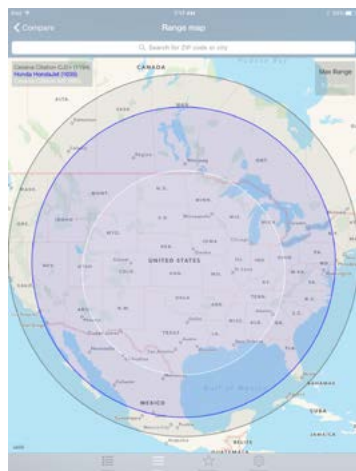
UTILITY



AirDB Civil Helicopters and Business Aviation Database

Sometimes you just want to compare a Falcon 900 to a GIV or an AS350 to a Bell 407, and AirDB's helicopter and business aviation databases are perfect for that. No need to go to a website from a computer, just open the app, select the manufacturer and model and compare away. There is a lot of useful information in the AirDB databases, but also a lot of missing information. Not all manufacturers publish information for every field in the database—for example, cabin volume—and gathering and keeping the information current is a massive job. But AirDB founder Slobodan Vuckovic has made a great start, and this is a useful tool to have on an iPad.

The AirDB Business Aviation Database opens with news and photos of various airplanes, and clicking on a photo brings up a summary of that airplane's



performance. The app contains multiple photos for each airplane, such as exterior, interior, cockpit and so on.

A useful field in the database for each airplane is the ICAO aircraft type designator for the airplane. Price is also provided in U.S. dollars, although it doesn't specify the year the price was set. All performance specifications can be viewed in U.S. standard or metric. A range-mapping function lets the user input a location and view both the maximum and full-seats range, another useful and fun feature. Even better, the range rings can also be compared between different aircraft types, all on the same map.

In the Civil Helicopters database, range maps are shown for maximum range. Like the business aviation database, when the user is running a comparison of multiple aircraft, the range maps are overlaid for a quick view of comparable range capability.

The full data is available only to those with a premium subscription, which costs \$19.99 per year for each database.



SocialFlight

The SocialFlight app consolidates aviation-related events and training opportunities, all in a simple interface keyed to the user's location. The app can either display all events in the local area, or the user can sign up for a weekly email that lists local events. Clicking on an event pulls up more information. SocialFlight has become the go-to app for anyone holding an aviation event.

AVIONICS TRAINING



Avidyne IFD

Touchscreen mobile devices such as the iPad

are ideally suited to avionics training, especially with suites such as Avidyne's touchscreen IFD540 and IFD440 GPS/com/navigators. Avidyne's IFD app works almost exactly like the real thing, although knob twisting is not exactly the same on the iPad. But for learning how to program frequencies, plan flights and modify flight plans and load approaches, the iPad app is an ideal format. Users can run a simulation mode to see how the IFD devices work in flight. And the app is free, so there should be no excuse for not learning how to use the system before taking off with the real thing.



Garmin GTN Trainer

Like Avidyne, Garmin has taken full advantage of the iPad format to replicate the GTN 750 navigator in a way that operates much like the real thing. This app is a great



way to try out the avionics before buying, and then learn how to use the product on the ground instead of head-down and not-looking-for-traffic while flying. The GTN Trainer includes simulation of interfaces with GDL 88 ADS-B IN traffic and weather, GDL 69 SiriusXM weather, GWX 70 weather radar, L-3 Stormscope lightning and more, giving users a deep dive into the power of the GTN 750. Garmin also includes its SafeTaxi airport charts, high-resolution terrain maps and aviation databases, obstacle databases with powerline alerting and Garmin FliteCharts. □