



Gulfstream once again holds the number one slot for jets. Hawker Beechcraft takes the top spot among new turboprops, while Mitsubishi takes the overall t-prop title. Bell leads among helicopter OEMs.

Readers rate OEM product support

by Matt Thurber

In the perennial effort to keep customers so happy with their aircraft that they stay with the brand when they move up, original equipment manufacturers (OEMs) have to spend enormous resources on post-delivery support. Every year, the OEMs' product support organizations grow in sophistication and capability, and the march of technology allows OEMs to be more proactive than ever to solve customer problems.

Of course, with added technology comes added complexity, and it's interesting this year to see more complaints about modern avionics and electronics-based systems. It is also interesting to see that most OEMs are building more factory-owned facilities and allowing more authorized service centers to open, all in an effort to make sure service is available for customers. This is increasingly the case with facilities in China and even India, where significant numbers of new aircraft are headed. Product support is clearly a worldwide need, and the OEMs that embrace this will be at the head of the pack.

Each year, AIN surveys qualified readers for their opinions about the service provided by OEMs (see facing page for survey methodology). While opinion surveys are somewhat subjective, the results point to interesting views of the OEMs' support efforts and specific elements of those efforts.

The Combined Ratings

Despite a drop, Gulfstream's large-cabin jets retained the lead this year in newer and older aircraft with an 8.01 overall average, down from 8.23 last year. The top three, in fact, are the same as last year, with Gulfstream large-cabin aircraft followed by Cessna at 7.87 (down from 7.91) and Gulfstream mid-cabin jets at 7.86, up from 7.76 last year.

Making a big jump this year is Boeing Business Jets in fourth place, with a 7.70 rating, up from last year's 7.37 and supplanting Bombardier's Learjet series. This pushes Dassault Falcon to fifth place with a slightly diminished rating of 7.54, down from 7.64 last year, followed by the Bombardier Challenger (7.53) and Global (7.42). The Challenger and Global ratings are both up from last year (7.41 and 7.18, respectively).

Hawker Beechcraft's smaller jets (7.31) follow just ahead of Learjets (7.30) and Hawkers (7.29), a three-way statistical tie. Embraer's executive jets received enough responses this year to be rated for the first time, at 7.19.

The turboprops category shook out similarly to last year, with the consistently highly rated Mitsubishi MU-2 on top with a significant jump to 9.43, the highest rating in any category. This year the Pilatus PC-12 received enough ratings to be included, with a rating of 7.94, followed by the Hawker Beechcraft King Air line at 6.98, down from 7.14 last year.

New Business Jets

This year, Gulfstream (large-cabin segment) and Cessna topped the Newer Business Jets list, with each earning a rating of 8.11 (both were lower than last year's ratings). Gulfstream's mid-cabin jets follow with a rating of 7.84, then the Falcon series at 7.80, followed closely by Hawker Beechcraft's smaller jets at 7.79.

In near proximity are the three Bombardier lines, first the Challenger (7.77), then Learjets (7.48) and Globals (7.39). Hawker Beechcraft's Hawker jets scored a rating of 7.34, and the newly rated Embraer jets enter the fray at 7.19.

Older Business Jets

In the Older Business Jets category, Gulfstream again leads the pack, with a rating of 7.86, down from last year's 8.14. Cessna jumps up a spot with a bigger rating (7.56) compared with last year (7.46), followed by Bombardier's Global series, also jumping up in the rankings to third place with a rating of 7.55.

Dassault's Falcons take fourth place (7.27), followed by the Hawker jets (7.23). The Learjet and Challenger lines are close behind with 7.18 and 7.14, respectively, followed by the smaller Hawker Beechcraft jets at 6.94.

Turboprops

Newer turboprops are dominated by Hawker Beechcraft's King Airs (7.38, down from last year's 7.61).

In the Older Turboprops category, the MU-2 took top spot with a rating of 9.43, followed by the King Air at 6.84.

Rotorcraft

The rotorcraft rankings switched around slightly this year, but Bell Helicopter remains at the top with a rating of 7.49, down from last year's 7.91. AgustaWestland dropped to 6.71 from last year's 7.48, relinquishing second place to Sikorsky (6.79), followed closely by Eurocopter (6.76).



Table of Contents
Readers rate 22
Overall Average Ratings..... 22
2011 Ratings..... 23
What have you done..... 24
Customers' own words 28
iPad winners..... 28

Table with 5 columns: Aircraft Model, Overall Average 2011, Overall Average 2010, Rating Change from '10 to '11, % Change. Rows include JETS (Gulfstream, Cessna, Boeing, Dassault, Bombardier), TURBOPROPS (Mitsubishi, Pilatus, Hawker Beechcraft), and ROTORCRAFT (Bell, Sikorsky, Eurocopter, AgustaWestland).

Bold indicates highest number in each category.

Source: AIN 2011 Product Support Survey

How the Survey Was Administered

Response to the 2011 AIN Product Support Survey improved this year compared with last, reflecting, one can at least hope, what appears to be a steady resurgence in business aviation flying. This resurgence is taking place in a travel environment that is increasingly hostile to travelers in terms of misapplied security protocols at commercial airports and growing scrutiny of private travel.

The AIN Product Support Survey is conducted entirely on the Internet, and participants are invited via email and, for those who don't provide email addresses, by postcard. This year's survey was accessible from April 25 to June 7, with time added to encourage additional participation. The minimum number of ratings for a manufacturer to be included in the results is 20 ratings.

The aircraft results are published in this issue; avionics will be featured next month and engines in October. The following are the 10 ratings categories, including explanations

(1,180 completed survey returns), a better rate than last year's 5.3 percent (921 completed returns). A total of 2,500 individual aircraft received ratings in 2011, compared with 1,871 in 2010.

According to Forecast International of Newtown, Conn., which helped design and administer the survey with AIN, "This response is a valid basis for determining subscriber opinion."

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The following are the 10 ratings categories, including explanations

of the key points that survey participants were asked to consider when submitting their opinions.

- Factory Service Centers—cost estimates versus actual, on-time performance, scheduling ease, service experience.
- Authorized Service Centers—same as above.
- Parts Availability—in stock versus back order, shipping time.
- Cost of Parts—value for price paid.
- AOG Response—speed, accuracy, cost.
- Warranty Fulfillment—ease of paperwork, extent of coverage.
- Technical Manuals—ease of use, formats available, timeliness of updating.
- Technical Reps—response time, knowledge, effectiveness.
- Maintenance Tracking Programs—cost, ease of use, accuracy, reliability.
- Overall Product Reliability—how the product's overall reliability and quality stack up against the competition's.

—M.T.

2011 RATINGS (revised 09/08/11)

Aircraft are listed in the order of their 2011 overall averages.

Table with 15 columns: Aircraft Model, Overall Average 2011, Overall Average 2010, Rating Change from '10 to '11, Percent Change, Factory Service Centers, Auth. Service Centers, Parts Availability, Cost of Parts, AOG Response, Warranty Fulfillment, Technical Manuals, Technical Reps, Mx Tracking Programs, Overall Aircraft Reliability. Rows include NEWER BUSINESS JETS, OLDER BUSINESS JETS, NEWER TURBOPROPS, OLDER TURBOPROPS, COMBINED NEWER AND OLDER BUSINESS JETS, and COMBINED NEWER AND OLDER TURBOPROPS.

The Boeing BBJ received a total of 22 responses; 9 of these are for newer BBJs and 13 are for older BBJs and therefore were not qualified to be rated in the newer business jets and older business jets categories (which required 20 responses each). They did qualify for the combined ratings and that is why they are listed here. The Pilatus PC-12 received a total of 25 responses; 17 of these are for newer PC-12s and 8 are for older PC-12s and therefore were not qualified to be rated in the new business jets and older business jet categories (which required 20 responses each). They did qualify for the combined ratings and that is why they are listed here. N/R—not rated last year. Compiled by Jane Campbell with data provided by Forecast International of Newtown, Conn. Bold indicates highest number in each category.



Source: AIN 2011 Product Support Survey

What have you done for me? OEMs enhance support

by Matt Thurber

AgustaWestland

AgustaWestland's goal is to continue building customer support infrastructure closer to operators of its helicopters, and the company has opened new service centers in Russia, France and Greece and plans 10 more by year-end. The total number of service centers and blade repair centers is more than 70, and more than 70 onsite technical representatives and customer support managers are available to help AgustaWestland customers.

During the past year, AgustaWestland added a new fleet operations center in Lonate Pozzolo, Italy, near the Avioport Logistic Park. The center operates 24/7 to support AOG and other urgent issues and is staffed by a multi-disciplinary team. The center's tools include a dedicated control room that tracks the worldwide AgustaWestland fleet using a modern data management system.

AW139 operators can now use the new health and usage monitoring system web services, developed by AgustaWestland in collaboration with GE Aviation. Data on helicopter transmission health is gathered automatically and transmitted to the data repository, where artificial intelligence-driven anomaly-detection technology does an initial assessment of the data. Customers can view their data online.

Bell Helicopter

Bell's big move early this year was consolidating many of its subsidiary aftermarket service businesses under one umbrella, including Edwards & Associates, Aeronautical Accessories, Rotor Blades, Acadian Composites, Bell Aerospace Services and US Helicopter. The move provides customers one-stop service, according to Bell. The company opened a new service and support facility in Prague, Czech Republic.

Another key effort is "strengthening operational performance, which has resulted in optimized spares availability/

distribution and reduced turn times and has driven cost out of the business, ultimately improving helicopter operating cost and uptime."

Operators of older Bell helicopters should see improvements as the company has tasked its legacy spares, engineering and program management departments with coordinating industry partnerships, developing product upgrades and retrofits and gathering feedback through focused customer user groups.

Boeing

Boeing Commercial Airplane Services has added services for BBJ operators,



Cessna Citation X

including making the GoldCare support program for the 737NG available for the BBJ.

Landing-gear exchanges due at 12-year inspections are now available for the BBJ. The exchange takes fewer than five days instead of the normal 60-day overhaul process.

More spare parts and distribution centers are located worldwide "to better serve our customers' spare parts needs with Boeing- and Aviall-branded solutions."

Bombardier

Bombardier surveys its customers annually then uses the results to formulate

plans for product support improvements. Bombardier says its focus during the past year has been on quality, responsiveness and international deployment.

As part of the quality issue, Bombardier has tackled the age-old problem of parts that get returned as defective, but are not found to have a fault (NFF or no-fault-found parts). Bombardier identified the top-ten worst parts performers for each platform (Learjet, Challenger, Global) and worked with support teams and suppliers to drive down the NFF rate. The resulting progress was so good that Bombardier now guarantees that if a part is "dead on arrival," the operator

won't have to pay labor and shipping cost to return it. Bombardier also launched a reliability improvement program for the Global series and replaced more than 1,000 components free of charge with new components that are more reliable.

To improve responsiveness, Bombardier hired a third party to train more than 1,000 employees in customer focus issues. Like many OEMs, Bombardier uses business aircraft to send parts and mechanics to fix AOGs. In the U.S., Bombardier uses its Flexjet subsidiary. Bombardier expanded Parts Express to Europe in 2009 and earlier this year based a dedicated Challenger 601 in Dubai to deliver AOG parts and services in the Middle East.

To serve a growing international fleet of more than 3,800 aircraft, Bombardier has been adding service centers. The company has 62 total around the world, nine of which are factory-owned. One of the recent additions was the first China mainland-based CAAC-approved line maintenance authorized service center in Jinan. Bombardier has also strengthened its international support team, which now numbers more than 170 people around the globe. A new parts depot in Hong Kong is Bombardier's ninth such facility, part of a \$180 million investment in inventory growth, mostly outside the U.S.

Cessna

Cessna is expanding its service network outside the U.S., breaking ground on a factory-owned center in Valencia, Spain, and teaming with sister company Bell Helicopter on a facility in Prague and a service/parts facility in Singapore. The Paris service center is one of the first in Europe to offer 24/7 service. And Cessna has added more mobile service units in the U.S. and Europe and a fleet of service trucks.

New interior offerings include the RightNow program, which brings the interior to the next block point or current production configuration. New in-flight entertainment options as well as cockpit upgrades are available, including satcom, FMS, autothrottle, synthetic vision, flight data recorders and so on. Glass cockpit upgrades are now available, including the Garmin G1000 for the Citation 525; AdViz (Innovative Solutions & Support) for the 500, 550, S550, 560 and 650 (in process); and Honeywell Primus Elite for the 750.

Daher-Socata

Last year, Daher-Socata added a new UK and Ireland distributor, a company launched by TBM850 owner John Merry. His new company will also provide maintenance, technical support and spare parts provision.

Earlier this year, Daher-Socata appointed Aviatec of Oveido, Spain, its newest sales and service center for Spain and Portugal. Aviatec's main maintenance base is at Cuatro Vientos Airport in Madrid.

Daher-Socata has delivered more than 550 TBM700s and 850s, and the aircraft have logged more than 830,000 flight hours. This year Daher-Socata celebrates 100 years of aircraft production, beginning with its predecessor company, Aeroplanes Morane-Saulnier.

Dassault Falcon

The Dassault Falcon global support network has added facilities in Mumbai, India, and Vienna, Austria, and opened new authorized service centers in Hong Kong and Shanghai. The company's spares organization is expanding inventories to more than \$700 million worth of parts at locations around the world to speed delivery to customers.

Dassault Falcon has expanded testing of its in-flight FalconBroadcast system for reporting faults and ground-based FalconLink remote access diagnostic system to speed up technical

Continues on page 26 ►



Boeing BBJ



Support enhancements

► Continued from page 24

assistance and AOG response.

More than 600 people attended 13 maintenance and operations seminars during the past year, and Dassault Falcon has expanded its E-Forums “to discuss model-specific issues with pilots and maintenance staff.”

Embraer

Embraer’s service network is also growing in regions outside the U.S. as its fleet expands, and the company has plans for new authorized service facilities in Brazil and expansion of Embraer’s factory-owned facility in Brazil. Last year Embraer had 37 service centers, and that number now stands at more than 50, including Embraer’s factory-owned facility in Bradley, Conn., which can now serve all the needs of the Embraer business jet series.

Embraer expects new authorized service facilities in Mainland China to open

the iPreFlight iPad app for Phenom flight dispatch, which includes access to Aircraft Performance Group’s runway analysis program, preflight weather and flight planning data as well as access to aircraft manuals. The Legacy jets will be added later this year.

To handle more Asia-based business jets, Embraer has added an executive jet parts distribution center to its regional jet facility in Singapore and added Phenom parts to its facility in Dubai.

Lessons learned from recent new-aircraft launches have led to a change for the upcoming Legacy 500 and 450. The new customer maturity program is already under way, evaluating all the procedures, parts support requirements and so on for service entry of the new jets.

Eurocopter

American Eurocopter has expanded its D-level capabilities in the U.S. so that operators of all helicopters (except the EC225) can have D-level blade and main gear-



Bell 429

by year-end. Many new field representatives have been added during the past year, and the service organization has added 50 percent more personnel. The customer contact center, which opened two years ago, is averaging more than 10,000 interactions per month.

The FlyEmbraer customer portal has been improved to make it easier to use and also to speed performance because so many new users have been added. New features include making the aircraft health analysis and diagnosis system service available for Phenom 100 and 300 operators. Some of the FlyEmbraer portal features are also now available via mobile devices, including

box work done. The EC225 is supported by the Super Puma facility in Europe. American Eurocopter has added EC130 tailboom MRO capability to the existing airframe and tailboom services for the AS350/AS355, EC135 and EC145 models.

To improve customer service at the customer service and fleet operations center, American Eurocopter introduced single point-of-contact lines for AOG, spares and technical support as well as substantial investments in personnel and facilities. This includes the company’s FAA organization designation authorization, which helps speed development of supplemental type certificates. Eurocopter continues



Mitsubishi MU-2



Gulfstream G550

its investment in the Streamflex system for order forecasting and fulfillment and Key-copter customer portal, which help speed service and shorten turnaround times.

Gulfstream

Gulfstream is building new mobile repair teams called field and airborne support teams (Fast) to handle customer problems quickly. The teams use the airborne product support unit (which now has a back-up aircraft, three pilots and two technicians) and mobile support vehicles to tackle AOGs around the world. The first Fast group is based in Europe, and more are planned in other regions.

New parts warehouses have been added to Gulfstream’s facilities in Madrid, Spain, and Luton, UK. Total European inventory is worth \$110 million. Parts stores in Asia were also beefed up. Last June Gulfstream expanded the PlaneParts spares subscription service to large-cabin jets, helping operators smooth out maintenance costs by removing the risk of cost overruns.

Gulfstream’s in-flight support center opened in February, to help the technical operations department accelerate in-flight troubleshooting. The department’s 40 call center technical/system specialists keep the department open 24/7 and use three flight-deck simulators to replicate and troubleshoot in-flight problems.

Gulfstream operators can now access summary fleet information compiled from the PlaneConnect air-to-ground maintenance datalink system. PlaneConnect data generated by the crew alerting system and central maintenance computer can be reviewed by model or a customer can review its own data, but fleet data doesn’t include any aircraft or operator identification information.

Hawker Beechcraft

Hawker Beechcraft (HBC) has consolidated product support efforts by forming a “global experience team” composed

of “expert technicians, field support and management personnel.” Incorporating all areas of the global customer support (GCS) network, the team is “empowered with the authority and tools to get the job done,” according to HBC. GCS is now led by Andy Balser, the new customer excellence vice president. HBC has also created a customer advisory board of customers and non-customers “to guide the company’s new product development and aftermarket programs.”

HBC is building a new factory-owned service center in Wilmington, Del., returning to the northeast U.S. in response to customer requests. HBC has added mobile technical service teams in the western and northeast U.S., with vehicles and maintenance teams capable of removing engines on HBC’s largest airplane, the Hawker 4000. Plans call for adding teams in international locations to support the growing HBC fleet.

HBC has opened new parts distribution centers in Dubai, Singapore and London and held maintenance and operations meetings in Dubai; Lagos, Nigeria; and Johannesburg, South Africa. “These locations often do not see such support sessions, and feedback from customers was positive.”

A new effort by HBC is investing in upgrade programs such as the King Air 200GTR, Hawker 400XPR and Hawker 800XPR, as well as avionics and cabin retrofits for various aircraft models.

Mitsubishi

Support for the 400 remaining Mitsubishi MU-2s is provided by Turbine Aircraft Services on behalf of the Mitsubishi Heavy Industries America (MHIA) Aircraft Product Support Division. The controversial turboprop twin has a loyal following of owners and operators that appreciate its performance and the strong support, even though the airplane has been out of production since 1986.

Continues on page 28 ►



Hawker Beechcraft Hawker 850XP



Pilatus PC-12

Support enhancements

► Continued from page 26

MHIA supports approved MU-2 service centers and owns MU-2 specialist Intercontinental Jet Service in Tulsa, Okla.

Every two years, the MU-2 Pilot Review of Proficiency Program (Prop) is held at multiple locations, offering free training and safety sessions for MU-2 pilots and owners or those interested in buying an MU-2. The 2012 Prop sessions are now in the planning stage and will include new segments on aerodynamics.

The MU-2 is subject to a special FAR issued by the FAA, requiring specific initial, recurrent and requalification training for MU-2 pilots. A flight instructor's seminar is planned, "aimed at review of the requirements of the SFAR and to guard against complacency among both the instructors and students."

Pilatus Aircraft

Pilatus Aircraft has added new services for owners and operators of PC-12 single-engine turboprops and added two new authorized service centers to its worldwide network.

New owners of PC-12/47E models now receive an Apple iPad 2 loaded with delivery documents, owner's manuals and aviation applications such as ForeFlight Mobile and My Radar Pro.

Pilatus launched the MyPilatus.com web portal, which provides secure online access to electronic technical documents, subscription status, aircraft defect reporting and the online publication task sheet. Also available online is a new website for PC-12/47E engine and aircraft exceedance-related data review.

Piper Aircraft

The Piper service network includes 38 dealers and 65 authorized service centers worldwide. Piper parts are now supplied not only by Piper dealers but also by the Aviall distribution network. Piper technical support specialists are available 24/7 and they interface with engineering, manufacturing, quality assurance, purchasing, the FAA and Piper suppliers to handle problems.

Sabreliner

Sabreliner Corp is the original manufacturer of the Sabreliner jet (military T-39) and provides extensive support for the remaining fleet of the more than 400 jets that were built.

Earlier this year, Sabreliner began accepting reservations at the new paint shop at its Perryville, Mo., operations center. It employs a steam-stripping process and electrostatic paint guns. The shop is housed in a new 27,000-sq-ft hangar built to handle increasing amounts of refurbishing work, expected to add as many as 400 jobs in Perryville.

Sabreliner services for owners of its jets include maintenance, interiors, paint, avionics, components and accessories, parts sales and technical services.

Sikorsky

The goal for Sikorsky Aerospace Services is a 25-percent reduction in helicopter operating costs by 2015. Recent improvements toward that goal include increasing the interval time for major recurring inspections on the S-92 to 1,500 from 1,250 hours, "effectively eliminating one in five inspections."

Since last September, when Sikorsky



Sikorsky S-434

PRODUCT SUPPORT: IN THE CUSTOMERS' OWN WORDS

AIN's annual Product Support Survey is readers' chance to sound off on the service they have received in the past year from the OEMs that built their aircraft and its engines and avionics. Below is a sampling of their comments on the airframers. It's a taste of what can be found in full online at www.ainonline.com/PSS2011comments.

"One of the factory centers doesn't seem to care for the customer until you get to deal with the techs; they are great."

"Always good service and techs are great; getting the invoice on time is another issue they need to address."

"Always excellent work, often a little sticker shock at the end. They often appear as if they are trying to rebuild an older aircraft back to new."

"Big improvement from 2007 to the present day. Today it is possible to ask for parts and believe the delivery time."

"Had to wait four weeks for just five bolts, finally had to find them myself in Canada!"

"The OEM does NOT support the aircraft in the field; we get better service from outside vendors than we do the OEM."

"For an airplane that has been out of production for more than 25 years, the parts situation is excellent."

"Have had to acquire multiple airframes just for the parts to keep our fleet flying."

"... is making great strides in improving availability while simultaneously lowering the price of the parts used most often."

"Response time to AOG is excellent! The mobile service units are strategically located and have responded several times for us, always with great results!"

"I would rather wrestle an alligator than file a warranty claim!"

"Very keen to wriggle out of warranty on the basis of 'wear and tear' even when items fail before inspection."

"Hard to get any response, and if they reply they change their mind later."

"Subscription renewal costs absolutely ridiculous. Raised prices in going from paper manuals to electronic or Web-based. No incentive-based structure to 'go green.'"

"We operate more than 100, and overall aircraft reliability is very good."

"Very reliable. We've flown 3,600 hours since 2006 and have had to cancel a trip only twice for mechanical issues."

"This OEM is serious about being best in class when it comes to aircraft reliability!"

"We've operated this aircraft model for nearly 10 years. Dispatch reliability is 100 percent. They're bulletproof."

Aerospace Services added an organization to expand internal and external repair capabilities, the company has lowered repair turnaround time by 34 percent for customer units.

Twin Commander Aircraft

Twin Commander is another example of a company providing support to keep out-of-production aircraft flying safely and efficiently. In April, the company held its Twin Commander University, which saw 144 participants, including owners, operators, factory representatives, authorized service centers and product and service providers. Subjects covered included weather radar, using Nexrad, operational techniques, factory

engineering initiative updates, the Grand Renaissance refurbishing program and a proposed leasing program for the Honeywell TPE331-10T upgrade.

Twin Commander also holds biennial service center symposiums for its 20 worldwide service centers. The most recent two-day session was held in 2010 in Oklahoma City, updating service center technicians and executives on product upgrades, parts and service issues and new inspection, repair and upgrade techniques and procedures.

A new feature on the Twin Commander website is the "kit finder," which lists all component and kit upgrades for piston and turboprop Twin Commanders. □

iPAD WINNERS

The following people were randomly selected as winners of an Apple iPad for participating in our annual Product Support Survey: **Mark Conrad**, Plano, Texas; **Galen Baird**, chief pilot, First Magnus Financial, Green Valley, Ariz.; **Jack Gore**, chief pilot, Air Orange, Santa Ana, Calif.; **Garrett Krambs**, chief pilot, F. Korbel & Bros., Guerneville, Calif.; **David Kleinman**, v-p and chief pilot, Bedford Hills, N.Y.; **Greg Cayon**, director of aviation and business travel, Kohler, Sheboygan, Wis.; **Carl Margraff**, chief pilot, Procter & Gamble, Cincinnati; **Randy Presley**, corporate pilot, Mount Pleasant, Texas; **Michael Magnani**, director of maintenance, Central Management Services, Camarillo, Calif.; **Patrick Benjamin**, aircraft maintenance technician, United Parcel Service, Port St. Lucie, Fla. The iPads come with free subscriptions for the following apps: LogTen (LogBook); Wing X (moving map); and APG WB (runway analysis). □



APG WB
Runway Analysis,
Weight and Balance



LogTen
Pilot's Digital
Logbook



WingX
Moving Map,
Charts and
Weather