

AIN 2010



Product Support Survey

PART ONE • AIRCRAFT

by Matt Thurber

Gulfstream once again takes the number one slot for jets (those built in the U.S.); Hawker Beechcraft takes the top spot among newer turboprops and Bell claims the number one rating among helicopters.

Gulfstream took the lead again in the annual AIN Product Support Survey, coming out ahead in both the newer and older (more than 10 years old) categories and also in the combined newer and older aircraft. Bombardier's ratings for all models climbed over last year's.

Although the company ranked low in the newer and older jet categories, its improved scores may reflect that it dropped a controversial program under which customers flying older aircraft had to pay extra fees for product support of classic aircraft. The model with the largest percentage growth in rankings compared to last year is Bombardier's newer Learjets, up 7.61 percent, to 7.95.

One change this year involved realigning the Gulfstream models to reflect their pedigree more accurately. Now the U.S.-built large-cabin Gulfstream jets (GII through G550) and the Israel Aerospace Industries-built models (Astra, Galaxy, G100 to G200) are clearly separated. The realignment means that last year's Gulfstream numbers are not compared to this year's rankings.

For newer business jets, Gulfstream's large-cabin models topped the rankings at 8.31, followed by Cessna's Citations, up more than 5 percent, to 8.22. Bombardier's Learjet line made a big leap this year to third place, moving past last year's finish behind Dassault Falcon, Hawker Beechcraft (Premier, etc.) and the Challenger line. Bombardier's Global line also saw a healthy jump of more than 6 percent this year, to 7.16.

In fourth place this year is Gulfstream for its IAI-built jets, at 7.75, followed by Dassault Falcon in fifth place at 7.68. Hawker Beechcraft's newer jets climbed strongly to 7.66 this year, up by more than 5 percent.

Unfortunately, we did not receive enough responses this year to include all of the turboprops. Mitsubishi's MU-2 held its lead with a small jump to 8.90, Hawker Beechcraft's newer King Airs climbed almost 3 percent this year, to 7.61, while its older models declined by more than 3 percent, to 6.82.

Helicopters saw big gains this year, with Bell again at the forefront with a 13.5-percent jump to 7.91. AgustaWestland climbed more than 9 percent to 7.48, while Sikorsky edged up 3 percent to 7.09. Eurocopter's ranking dropped this year by about 5 percent, to 6.17.

It is interesting to see that in all the aircraft categories overall aircraft reliability is the predominant high-scoring ranking for all the manufacturers. In the newer jet category, however, Bombardier Learjet scored highest for technical reps, and the Global series ranked much higher when comparing technical reps with overall reliability. Among many of the other jet manufacturers, technical reps received the second-highest score, which shows not only that the reps are doing a good job but also how important they are in the product support spectrum. With business aircraft, the personal touch is clearly critical.

What about the lowest rankings? As is always the case, cost of parts received the lowest scores for every manufacturer, for both newer and older jets, turboprops and helicopters, except AgustaWestland. □

All the reader comments about product support are available online at www.ainonline.com/resource-center/

The results of the avionics survey will run next month; the engine results will run in the October issue.



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Overall Average Ratings of Newer and Older Aircraft Combined (in order of 2010 ratings)

The chart below provides the overall average rating of each manufacturer when the newer and older aircraft scores are combined. This gives OEMs and readers a glimpse of a manufacturer's overall support ratings for all its products. The chart is broken down by jets and turboprops, as the level of service and support can vary widely between the two segments.

	Overall Average 2010	Overall Average 2009	Rating Change from '09 to '10	% Change
JETS				
Gulfstream (GII through G550)	8.23	N/app.	N/app.	N/app.
Cessna (Citation)	7.91	7.65	0.25	3.33%
Gulfstream (Astra, Galaxy, G100, G200)	7.76	N/app.	N/app.	N/app.
Bombardier (Learjet)	7.69	7.26	0.43	5.93%
Dassault (Falcon)	7.64	7.38	0.26	3.53%
Hawker Beechcraft (Hawker except 400XP)	7.44	7.19	0.25	3.43%
Bombardier (Challenger)	7.41	7.16	0.25	3.48%
Boeing (BBJ)	7.37	7.80	-0.43	-5.53%
Hawker Beechcraft (Premier I, Diamond, Beechjet 400A, Hawker 400XP)	7.19	7.04	0.16	2.23%
Bombardier (Global Express/XRS, Global 5000)	7.18	6.73	0.45	6.67%
TURBOPROPS				
Mitsubishi (Marquise, MU-2, Solitaire)	8.90	8.81	0.09	1.02%
Hawker Beechcraft (King Air)	7.14	7.14	0	0.00%

Compiled by Jane Campbell with data provided by Forecast International of Newtown, Conn.

Bold indicates highest number in each category.

*The Gulfstream rating category changed this year, and therefore a direct comparison cannot be made between this year's and last year's ratings.

Source: AIN 2010 Product Support Survey

How the Survey Was Administered

Continued weakness in the business aviation market appears to be reflected in a low response rate to the 2010 **AIN** Product Support Survey. This year's survey invited 17,284 **AIN** readers to participate but only 921 completed the survey, for a return rate of 5.3 percent. Previous participation levels were 12 percent in 2009, 10.28 for 2008 and 10 percent in 2007. According to Forecast International of Newtown, Conn., which helped design and administer the survey with **AIN**, "While this response is a valid basis for determining subscriber opinion, the decrease in participation is discouraging and appears to be a cumulative, strong result of the poor condition of the business aviation community over the past few years."

The **AIN** Product Support Survey is conducted entirely on the Internet, although some participants are invited via postcard. **AIN** did not, however, have e-mail addresses for all invited participants, so the return rate for those with e-mail addresses (11,050) is higher, at 8.3 percent.

It should be noted that **AIN** has asked airframe manufacturers to provide customer lists so that some models that don't typically receive high enough response rates to be included might qualify for inclusion. This also will help with new models entering service, such as Embraer's new Phenom 100 and 300, and with out-of-production

aircraft. In all of these cases, the manufacturer, if electing to participate, is required to provide a complete list of those customers, and **AIN** invites those customers who qualify to become subscribers. Not all of those lists include e-mail addresses, which explains the difference between the 8.3 percent participation rate for participants with e-mail addresses and the 5.3 percent rate for the total number of invited participants. Last year, for example, 14,948 people were invited to complete the survey, while this year that number jumped to 17,284, swelled by lists provided by manufacturers.

This year's survey was accessible from April 23 to June 13, with time added to encourage additional participation. One change that might have made a difference this year is that respondents were initially required to provide registration numbers of the aircraft they operate. **AIN** changed this requirement during the survey and made providing registration numbers voluntary on May 20, but this might still have discouraged participation. This year, **AIN** also added questions about where the aircraft is serviced and the type of service facility.

The survey asks **AIN** readers to rate their aircraft, engines and avionics in 10 categories. On the one-to-10 rating scale, one is inadequate and 10 is excellent. To be listed in the results, a

manufacturer had to garner at least 20 ratings.

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.

The aircraft results are published in this issue, while the avionics report will be featured next month and engines in October. —M.T.

2010 RATINGS

Aircraft are listed in the order of their 2010 overall averages.

	Overall Average 2010	Overall Average 2009	Rating Change from '09 to '10	% 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
NEWER BUSINESS JETS ✈														
Gulfstream (GIV through G550)	8.31	N/app.	N/app.	N/app.	7.96	8.24	8.44	6.35	8.58	8.55	8.24	8.74	8.71	9.08
Cessna (Citation)	8.22	7.81	0.41	5.24%	7.78	8.28	8.33	6.93	8.43	8.40	8.04	8.56	8.41	8.79
Bombardier (Learjet)	7.95	7.39	0.56	7.61%	7.69	7.78	7.90	6.51	8.13	8.41	7.91	8.82	8.00	8.38
Gulfstream (G100 to G200)	7.75	N/app.	N/app.	N/app.	7.70	7.54	7.32	6.60	7.81	8.07	7.84	8.26	7.80	8.38
Dassault (Falcon)	7.68	7.52	0.16	2.18%	7.55	6.94	7.71	6.27	8.07	8.07	7.56	7.97	8.03	8.47
Hawker Beechcraft (Hawker except 400XP)	7.66	7.29	0.37	5.11%	7.84	7.90	7.07	6.23	7.28	8.27	7.31	8.24	8.25	8.26
Bombardier (Challenger)	7.63	7.56	0.07	0.94%	7.65	7.48	7.24	6.08	7.72	7.87	7.66	8.29	7.90	8.30
Hawker Beechcraft (Premier I, Hawker 400XP)	7.41	7.40	0.01	0.09%	8.11	8.29	7.13	5.52	7.18	7.27	7.62	7.59	7.76	7.92
Bombardier (Global Express/XRS, Global 5000)	7.16	6.73	0.43	6.38%	7.40	7.16	6.77	5.63	7.18	7.39	6.88	8.20	7.44	7.52
OLDER BUSINESS JETS ✈ ✈														
Gulfstream (GII through GIV)	8.14	N/app.	0.38	5.28%	7.96	7.76	8.35	6.14	8.65	8.27	8.23	8.61	8.61	8.76
Dassault (Falcon)	7.59	7.21	0.38	5.28%	7.91	6.97	7.73	5.61	7.92	7.35	7.33	8.11	7.91	8.84
Cessna (Citation)	7.46	7.39	0.07	0.97%	7.58	7.08	7.70	5.86	7.53	7.22	7.70	7.58	7.79	8.32
Bombardier (Learjet)	7.35	7.11	0.24	3.33%	7.32	6.58	7.34	6.00	7.67	7.04	7.64	7.74	7.92	8.01
Hawker Beechcraft (Hawker)	7.18	7.03	0.15	2.08%	7.33	6.89	6.92	5.62	6.98	6.87	7.27	7.93	7.95	8.06
Bombardier (Challenger)	7.06	6.66	0.40	6.00%	7.79	6.86	6.71	5.29	7.03	6.76	7.16	7.45	7.74	7.93
Hawker Beechcraft (Premier I, Diamond, Beechjet 400A)	6.94	6.74	0.20	2.92%	7.25	7.25	6.95	5.58	7.06	7.00	6.26	6.77	7.33	8.05
NEWER TURBOPROPS ✈														
Hawker Beechcraft (King Air)	7.61	7.41	0.20	2.67%	7.74	6.77	7.02	6.31	7.51	7.97	7.81	7.91	7.93	8.77
OLDER TURBOPROPS ✈ ✈														
Mitsubishi (MU-2, Marquise, Diamond, Solitaire)	8.90	8.81	0.09	1.02%	9.35	9.47	8.83	7.74	8.82	9.00	8.78	8.87	8.81	9.57
Hawker Beechcraft (King Air)	6.82	7.06	-0.24	-3.41%	7.35	6.45	6.85	5.65	6.48	6.59	7.04	6.66	6.79	8.07
ROTORCRAFT (All Ages)														
Bell	7.91	6.97	0.94	13.54%	8.29	7.93	7.68	6.32	7.87	8.06	8.13	8.48	8.29	8.46
AgustaWestland	7.48	6.85	0.63	9.18%	8.52	8.13	6.54	6.13	6.79	7.70	8.29	8.25	5.90	8.00
Sikorsky	7.09	6.88	0.21	3.08%	7.10	6.95	6.58	5.92	6.88	7.32	7.54	7.74	7.24	7.68
Eurocopter	6.17	6.50	-0.33	-5.06%	6.18	5.53	5.26	4.76	6.00	6.18	6.68	7.33	6.00	7.51

Compiled by Jane Campbell with data provided by Forecast International of Newtown, Conn.

* Last year's ratings for Gulfstream are not included due to changes made to more accurately reflect Gulfstream's model breakdown.

Bold indicates highest number in each category.

✈ Less than 10 years old
✈ ✈ More than 10 years old



➔ What Have You Done for Me Lately?

by Matt Thurber

Some manufacturers responded in detail to AIN's query about what they have done during the past year to improve customer service; some kept mum. In one odd about-face, Bombardier has dropped its policy of charging customers with airplanes older than 10 years, while Hawker Beechcraft instituted a new policy implementing fees for older-aircraft product support.

The case is clear, though, that the manufacturers have maintained spending on product support, despite reduced sales and cutbacks on the manufacturing side.

➔ Airbus Corporate Jets did not respond

AgustaWestland

AgustaWestland added six new authorized service centers last year, bringing the total to nearly 70, and the company has approved 12 more authorized facilities and is evaluating another 10. The service center network is managed by more than 30 regional customer service managers, and "each CSM is responsible for a particular region or specific countries and acts as the coordinator and contact point for operators," the company noted.

Last year, AgustaWestland doubled the size of its logistics center in Lonate Pozzolo, Italy. The AgustaWestland fleet operations center supports AOG customers 24/7. In Brazil, the company's new AgustaWestland Do Brasil subsidiary is under construction and will provide maintenance, logistics, spares, repair, overhaul and modifications.

Bell Helicopter

Bell Helicopter has realigned its affiliate companies under the customer service and support division, including Edwards & Associates, Aeronautical Accessories and Rotor Blades. In February, Bell purchased Prague-based Aviation Service to expand its helicopter service capabilities in the European helicopter market.

Bell has created a new "legacy ship" program management function, which is designed to address parts availability for older helicopters and work with industry to develop upgrades to improve mission capabilities.

Bell is planning to work more

closely with its affiliates and third-party providers to develop upgrades, STCs and licensed spares under the FAA-approved parts manufacturer approval (PMA) process.

Other developments at Bell include a new AOG order policy "to better control prioritization of spares ordering" and delivery of all Bell commercial technical manuals in electronic format.

➔ Boeing Business Jets did not respond

Bombardier

"During the last three or four years we've been driving hard and improving dispatch reliability," said James Hoblyn, Bombardier president of customer services and specialized and amphibious aircraft. The company now has 42 authorized and seven factory-owned Bombardier Aviation Services facilities globally and spares depots in São Paulo, Frankfurt, Singapore, Dubai, Chicago and Mumbai. Earlier this year, Bombardier held a grand opening for its first non-U.S. wholly owned service center in Amsterdam.

The big news for Bombardier is that it has dropped the charges for product support of older legacy aircraft. "Our intention is not to isolate them," said Hoblyn, "but to build a business to support them. We're not going to do that by charging for technical support." Bombardier recognizes that its out-of-production fleet keeps growing, and providing integrated solutions such as parts, training and maintenance for these owners helps pay for product support. "The

fixed cost is there for supporting the fleet," Hoblyn explained. "The incremental cost of supporting a Learjet owner [of a legacy airplane] is not high, and we want that owner to come back and buy another."

One way that Bombardier is keeping support costs more reasonable is with electronic "smart manuals," which it is developing for all of its aircraft types, including older airplanes.

This effort helps customers look up information in manuals before calling a Bombardier technical rep. Bombardier has also made a special effort to implement changes in manuals quickly. "We used to have a backlog of customer requests for changes in the thousands," Hoblyn said. "Now there's no backlog; we jump on it and resolve it."

At its factory-owned Business Aviation Services facilities, Bombardier has attacked a persistent and complex problem, invoicing errors. "We had to do a lot of workshops to solve the issue," said Hoblyn. "Three or four years ago when we visited customers, we used to hear about invoicing," he said, "and now we don't. When you're a customer and that happens every month, it doesn't make you happy."

Cessna

Cessna says its new ServiceDirect initiative is proving popular with customers, by taking maintenance to the customer instead of having the customer fly to a Citation service center for every problem. "It's hard to ask a customer to spend \$3,000 worth of fuel to get \$2,000 worth of maintenance done," said Stan Younger, v-p of service facilities.

ServiceDirect includes mobile service units, of which there were eight by July; Cessna plans to have a total of 15 in the U.S. Another is being added in Lyon, France. ServiceDirect also helps customers stay at home by offering to provide maintenance technicians who will work at the customer's hangar, to help with scheduled maintenance events or other tasks. This can include Cessna technicians

In analyzing the comments from readers who completed AIN's 2010 Product Support Survey, we tabulated the number of positive or negative comments received. Available space does not allow publishing all of the comments, and those chosen are intended to be informative and representative. All reader comments are online at www.ainonline.com/resource-center/.

Factory Service Centers

Bombardier (positive: 33, negative: 14)

■ "I use Bombardier Hartford. It has problems sometimes that are probably related to the ebb and flow of the more experienced technicians who move on. Lately it has been top notch, best in years."

—Ken Lavine, director of maintenance, Whitewind, Challenger 604/605

■ "We primarily use BAS Dallas and have had great service. Recently had a maintenance event at BAS Tucson and also had a good experience. The recent changes in customer focus are evident at every level. Technicians from both locations are true professionals."

—Robert Kleinschmidt, manager of maintenance, Jet Aviation, Global Express/XRS

Cessna (positive: 46, negative: 25)

■ "We have noticed a marked uptick in performance at the Orlando service center and more so at the Wichita service center. The downturn seems to have made Cessna focus more on customer service and quality."

—name withheld by request, Citation CJ3

■ "They try to put the aircraft back to delivery standards. They over-inspect and look at stuff they shouldn't be to try and run up the bill."

—Dewey Forker, Jet Spec, Excel

Dassault Falcon (positive: 14, negative: 23)

■ "DAS Reno has started up a nice facility. It has been accommodating and professional. The labor rate is high and they are limited to where they can get their parts. The parts ordering and the work quoting process were not smooth. The location is convenient. I appreciated their ability to get me in on short notice."

—Andy Lindborg, director of maintenance, Falcon 900B

■ "Dassault Falcon Service Centers Wilmington and Little Rock, horrible service, [difficulty] sticking to previously set schedules, terrible customer relations/support personnel, particularly in Little Rock. Had a 2C/gear overhaul there recently; the aircraft was in maintenance twice as long as the estimated five weeks it was supposed to take."

—name withheld by request, Falcon 50EX

Embraer (positive: 7, negative: 3)

■ "Embraer Mesa has an amazing staff, great techs, great management."

—Shawn Pacheco, crew chief, Legacy 600

■ "We have been using the Embraer factory facility in Brazil for seven years. However, problems [linger]. Lack of knowledge of the Legacy 600 and systems, constant turnover in the hangar workforce, difficult bureaucracy to remove parts from factory stock to [fix an] AOG."

—Edison Loredo, maintenance manager, Legacy 600

Eurocopter (positive: 2, negative: 4)

■ "For some questions they are helpful, but if they don't know, it's a call to France that might or might not yield an answer."

—name withheld by request

Gulfstream (positive: 29, negative: 17)

■ "Factory service in Savannah is always excellent. Gulfstream assigns the same lead and team to the aircraft so there is continuity that is invaluable."

—Nitish Iyengar, pilot, G550

■ "Appleton is by far the best service center that I have used. Attentive and aggressive to make sure things are done correctly. Long Beach has slipped to the bottom of the barrel. A lack of leadership has given to poor quality."

—name withheld by request, GV

Hawker Beechcraft (positive: 23, negative: 12)

■ "HBS San Antonio has been instrumental in the support of this aircraft. If it were not for them, and my field service rep John Frees, we would have dumped this aircraft a long time ago."

—Erling Brabaek, director of flight operations, Hurd Enterprises, Premier I/IA

■ "Hawker Beechcraft Tampa: I feel it is more concerned with its own bottom line than with my bottom line. There are no common-sense considerations when dealing with replacing parts and so on."

—name withheld by request, King Air 350

Authorized Service Centers

Bombardier (positive: 20, negative: 7)

■ "Duncan Aviation: The Challenger team at Duncan Aviation Lincoln are highly trained and experienced on the Challenger series. Our experience with Duncan has always been positive."

—name withheld by request, Challenger 604/605

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Bell

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Cessna Citation CJ1+

spending time after delivery with a customer or deploying a “shop-in-a-box” equipped with tools and spares to a site to support one or multiple customers.

Cessna is building a new factory-owned Citation service center in Valencia, Spain, due to open in 2012. Last year, Cessna moved its Long Beach, Calif. service center to Mesa, Ariz., and that facility’s staffing has already grown 20 percent since opening.

New products available from the Cessna service center network include the RightNow interior refurb program, which offers quick-turn cabin makeovers using pre-stocked materials at the service center locations. Cessna is also offering Waas upgrades for a number of Citation models as well as the Adviz glass cockpit upgrade with IS&S displays.

On the parts front, Cessna opened AOG spares distribution centers in Amsterdam and Singapore in partnership with sister company Bell Helicopter. More important, all Cessna service centers, mobile service units and parts warehouses are connected electronically, so parts are visible within the Cessna system.

Cessna appointed three new authorized service facilities recently, in Hong Kong, Turkey and the UK and is planning to enhance its support infrastructure in Asia.

Daher-Socata: See correction after page 7.

Dassault Falcon

Dassault Falcon is launching a system to tap into the central maintenance computer (CMC) installed on modern airplanes such as the 7X and EASy-equipped jets to diagnose and troubleshoot problems remotely, under the company’s E-Maintenance program. Both the Falcon Technical Center or service centers can access the CMC data via a laptop computer hooked up to a wireless or satcom network. E-Maintenance is scheduled for implementation early next year, once the communications systems are set up at Falcon factory-owned and authorized service centers.

Dassault Falcon has expanded its parts distribution network to bring parts closer to customers all over the world. Twelve spares facilities are located in China, Australia, Asia, India, Latin America, Europe, Africa, the Middle East and the U.S. Another facility is planned in Russia.

A new service center strategy centers around three levels of authorized service centers, line maintenance, major (all maintenance on certain models) and heavy (all maintenance on all models). There are now 26 service centers, with new facilities under discussion in India and Moscow

plus two or three more. “More customers are buying aircraft in China and India,” said Jacques Chauvet, senior v-p of worldwide customer service, “and there are lots of transient aircraft. It’s important to have support there.”

Eclipse Aerospace

While it hasn’t yet resumed manufacturing very light jets, Eclipse Aerospace, which bought the assets of bankrupt Eclipse Aviation, is providing welcome relief to the owners of 260 EA-500 twin-jets that for a while were without any formal support. Since forming Eclipse Aerospace in September 2009 the company has established service centers in Chicago; Albuquerque, N.M.; Boca Raton, Fla.; and Istanbul, Turkey. And EA-500 owners finally can have their airplanes upgraded to the latest configuration, including flight-into-known-icing and the AvioNG 1.7 avionics package. According to co-founder Michael Press, “We are working on a plan to get back into production so the [Eclipse 500] is not an orphaned airplane.” Meanwhile, Eclipse Aerospace is offering used EA-500s with a Total Eclipse package of upgrades for \$2.15 million with factory warranty.

Embraer

With its fleet of business jets growing rapidly around the world, Embraer has been adding service capabilities. New authorized service centers are located in Australia, Canada, Germany, India, South Africa and the U.S., and the company has added a factory-owned service center in São José dos Campos, Brazil. Embraer now has six factory-owned service centers, and authorized service centers for the Legacy models number 27, for the Phenoms 22 and for the Lineage five.

Last year, Embraer opened two new parts distribution centers in

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Drawing Winners

In appreciation of readers’ participation in the annual **AIN** Product Support Survey, each year we hold a drawing and award prizes to survey respondents. This year, **AIN** has added new drawing prizes, which include three Sennheiser noise-canceling headsets and 10 \$100 retail gift cards.

Winners of the three Sennheiser headsets this year are:

- Neil Taylor, flight department manager, Rosewood Resources, Dallas
- Dirk Tanis, captain, American Resources, Rock Hill, S.C.
- Gregory Simon, owner/manager, Winged Horse, Santa Ynez, Calif.

Winners of the 10 retail gift cards are:

- Wayne Pliss, chief pilot fixed wing, Aviation Services, Yucca Valley, Calif.
- Hemet Patel, line captain, Betman, Gainesville, Va.
- Eddie Yell, aviation dept. manager, Boyd Aviation, Eufaula, Ala.

- Jamie Stember, aviation dept. manager, CP Management, Lititz, Pa.
- Kimberlie Miller, pilot, Jynair, Washougal, Wash.
- Tony Fishlock, manager of avionics mods, Kelowna Flightcraft, Kelowna, B.C.
- Wesley Violet, aircraft technician, Occidental Petroleum, Newhall, Calif.
- Steve Chapel, Qwest, Grand Junction, Colo.
- Morgan Michel, helicopter pilot, MST Aviation, Ashland, Ky.
- Lindsay Olsen, company administrator, MTC Aviation, Prairie Village, Kan.

Cessna (positive: 25, negative: 7)

- “West Star Aviation Grand Junction is our primary maintenance facility, with knowledgeable staff and fair pricing.” —Skip Thigpen, chief pilot, Citation III

Dassault Falcon (positive: 25, negative: 3)

- “We have used Midcoast Aviation at St. Louis Downtown almost exclusively for our maintenance. It has been terrific in all respects. Dassault has unfortunately removed [Midcoast] from the list of authorized service centers. I’m sure the fact that Midcoast is owned by a competing manufacturer did not help their case in keeping their Falcon repair authorization.”

—name withheld by request, Falcon 50EX

Embraer (positive: 10, negative: 2)

- “Constant Aviation in Cleveland is by far the best authorized service center we have visited. Real professionals.” —David Regan, chief pilot, Legacy 600

Eurocopter (positive: 2, negative: 1)

- “We are fortunate to have two excellent maintenance facilities in the area. The one we use most is Advanced Helicopter Services in Vacaville, Calif. It works hand and hand with the airframe and engine manufacturers.”

—Robert Johnson, director of aviation, Concord Jet Service

Gulfstream (positive: 9, negative: 4)

- “Duncan Aviation, Battle Creek. Good, dependable, within budget and no surprises!” —name withheld by request, GIV-SP
- “Metrojet (Hong Kong). Poor service and expensive.”

—name withheld by request, G450

Hawker Beechcraft (positive: 23, negative: 5)

- “Stevens Aviation GSP: More than excellent airframe and engine support.” —David Young, Standridge Color, King Air 350
- “We use Duncan Aviation and are satisfied with the work and cost control they offer.” —Mark Jones, director of maintenance, Cozzens & Cudahy Air, Hawker jet

Parts Availability

Bombardier (positive: 22, negative: 24)

- “Worldwide parts availability has vastly improved over the past five years.” —Ronald Earl, lead technician, Citigroup, Global Express/XRS
- “Sometimes available, but the dead-on-arrival rate is annoying.”

—name withheld by request, Global Express/XRS

Cessna (positive: 39, negative: 16)

- “25 years operating Citations, never a delay waiting for parts.” —name withheld by request, Citation X
- “You can’t beat Citation CPD for availability and great service, but there are several outside vendors with better pricing. CPD’s guaranteed number of landings for brake exchange is a great program.”

—name withheld by request, Citation V

Dassault Falcon (positive: 30, negative: 11)

- “Dassault has improved considerably over the past several years. And it continues to improve.” —name withheld by request, Falcon 50
- “Some parts are not always in stock. Several cases of new parts failing a short time after installation. Same problem with overhauled or exchange parts.”

—Tim Larsen, chief pilot, Capital Flight, Falcon 900B

Embraer (positive: 6, negative: 6)

- “Parts availability has stayed on the upward trend line it has shown.” —name withheld by request, Legacy 600
- “Embraer needs to ramp up. Still waiting for the -3 brake computer. I was the third Phenom in the U.S. over 1.5 years ago.”

—Bryan Elhardt, chief pilot, Heaven Leasing, Phenom 100

Eurocopter (positive: 3, negative: 10)

- “Eurocopter parts availability is usually good from the factory, but I have seen long lead times on parts not in country. Eurocopter is issuing service bulletins that require part replacement and then it does not properly plan part availability for compliance.” —name withheld by request

Gulfstream (positive: 27, negative: 8)

- “Availability is excellent; however, a lot of replacement parts come with ‘no fault found,’ but it is still there. We find it.” —name withheld by request, G450

Hawker Beechcraft (positive: 19, negative: 29)

- “They always find a way to solve a parts issue.” —Mike Strader, chief pilot, Regal Beloit, Hawker jet
- “Poor. Parts are stocked only in production [line], [and are] limited, to no spares availability, down to a simple screw. Biggest problem so far with the program.”

—name withheld by request, Hawker 4000

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Singapore and Dubai, and this year the company plans to add business jet spares in mainland China.

Embraer has expanded its Embraer Executive Care (EEC) hourly maintenance cost program to cover all models and regions where its business jets are operated.

All parts transactions now take place through Embraer's E-parts system on the FlyEmbraer customer support Web portal, including ordering, warranty management, exchanges, order tracking and checking stock.

Last August, Embraer opened a new customer support contact center staffed 24/7, based at Embraer headquarters in São José dos Campos.

Embraer jets are equipped with central maintenance computers, and Embraer is taking advantage of the available data with a new aircraft health analysis and diagnosis program called Ahead, which will be launched during the second half of this year. Flight hours and cycles and any new maintenance issues can be transmitted while airborne or while on the ground, either wirelessly or by downloading a memory card. "We can see and anticipate problems, analyze data, troubleshoot and easily locate components that need to be replaced," said André Kovacs, service center network manager.

Eurocopter

American Eurocopter last year introduced its customer service and fleet operations center in Grand Prairie, Texas. The introduction of the new Keycopter online account management system has been successful, with more than 50 percent of American Eurocopter customers signed up. And Eurocopter has improved logistics and supply chain systems with the Streamflex initiative, which forecasts and fulfills orders and shipments. According to American Eurocopter, "The initiative has already resulted in steady increases in order fill rate, on-time delivery and on-time requested delivery."

Gulfstream

"Even in what has been a challenging time, we have continued to innovate," said Mark Burns, Gulfstream president of product support. Last September the company opened its newest facility, the second phase of a new factory-owned service center at Gulfstream headquarters in Savannah, Ga.

The second phase adds another 700,000 sq ft and holds 34 airplanes under roof, more than double the 16 in the original facility. "When we built the new facility," said Burns, "we planned for the inevitable." This meant

providing compressed air, power and wireless Internet at 16 spots on the ramp to handle the inevitable outdoor work. Another lesson learned was that tools and equipment tends to clutter the hangar, so the new service center includes a 100,000-sq-ft equipment building, which has the added benefit of lowering the incidence of damage.

A new 24/7 call center was opened in July last year and located inside the new service center so technical reps can be close to the maintenance action.

Gulfstream's PlaneConnect system is standard on new G450s and G550s and sends a download of in-flight data to the Gulfstream call center at top of descent.

Technical reps have been posted to China, Mexico, Singapore, Russia, India and other locations. The airframer is also working closely with its General Dynamics sister company Jet Aviation to fulfill support needs around the world. Overseas parts inventories are also growing, with \$60 million being invested in spares stock in

continue to grow and the demands for technical support on these expanded fleets and newer models continue to escalate."

HBC will charge operators of Class airplanes for requests for data that is already published in HBC manuals, single-system wiring diagrams, advice or troubleshooting and drawing research for modifications. To help customers deal with these costs, HBC implemented a new Web-based tool allowing limited pay-per-view access to manuals without having to buy an entire maintenance library.

In January, HBC consolidated all of its customer support functional groups under the new Hawker Beechcraft Global Customer Support entity. This incorporates four groups: Support Plus; Hawker Beechcraft parts and distribution; Hawker Beechcraft Services; and product support. HBC also established cross-functional teams to help make sure projects get done in five key areas, including AOG response; international support expansion; parts availability, cost



Hawker Beechcraft King Air 350

Savannah, Madrid, Hong Kong and 10 additional feeder locations.

"We want to be the service provider for every customer and know their experience. You don't get that with a third-party [provider]," said Burns.

Hawker Beechcraft

To be able to continue to support older airplanes, Hawker Beechcraft (HBC) implemented the classic legacy aircraft service and support (Class) program, which adds fees for support of certain legacy models. These include older piston models, certain King Airs through the 300 series (all FA and FF serial number prefixes), MU-300s and straight 400s and 125 series from model 1/1A through 800A/B and 1000. HBC supports more than 38,000 airplanes and averages more than 12,000 inquiries per month. "Some of these models were delivered over 40 years ago," the company noted. "We receive inquiries regularly for services and information. At the same time, our new fleets con-

and distribution; aircraft performance, reliability and resale value upgrades; and support infrastructure, like the new factory-owned service center in Mesa, Ariz., and a new facility in Indianapolis.

✈ **MD Helicopters did not respond**

Mitsubishi

There are more than 400 Mitsubishi MU-2 twin turboprops still operating worldwide, with more than 300 of them in the U.S., and Mitsubishi remains dedicated to their ongoing support. Last year, Intercontinental Jet Services of Tulsa, Okla., completed the prototype MU-2 Limited Edition, an MU-2 with Honeywell TPE331-10 engines, overhauled propellers, all wear items brought to new standards, interior furnishing and soundproofing upgrades, fresh paint, optional Sagem glass cockpit, new windows and other improvements. The Limited Edition MU-2 is now available.

Every other year, Mitsubishi
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Cost of Parts

Bombardier (positive: 4, negative: 23)

■ "Average, but would be willing to pay more if only they worked."
—name withheld by request, Learjet 36

Cessna (positive: 16, negative: 33)

■ "Batteries that I used to buy from Concorde for \$1,100 are now \$2,500 and can be purchased only from Cessna." —name withheld by request, Citation X

Dassault Falcon (positive: 13, negative: 31)

■ "They continue to bring costs down and are competitive with other sources." —Andy Lindborg, director of maintenance, 900B
■ "Ridiculous is an understatement. As my boss and the airplane owner says, 'That's why not too many people own aircraft.'" —name withheld by request, 50EX

Embraer (positive: 0, negative: 1)

■ "Expensive. Overall, we can buy parts from vendors at a significant discount from what Embraer charges." —name withheld by request, Legacy 600

Eurocopter (positive: 1, negative: 9)

■ "A plastic cover about two square inches costs \$1,000?"
—Pieter Koster, check/instructor pilot

Gulfstream (positive: 2, negative: 28)

■ "The cost of the parts for this airplane runs the range from moderately overpriced to grossly overpriced. It's virtually impossible to create a budget that reflects how much it's going to cost to operate the airplane with respect to unscheduled repairs."
—Michael Magnani, director of maintenance, Central Management Services

Hawker Beechcraft (positive: 6, negative: 37)

■ "The lav tank was a stunner at \$3,100. I see absolutely no reason for that."
—name withheld by request, King Air 200

AOG Response

Bombardier (positive: 36, negative: 8)

■ "Field service has always been Bombardier's strong suit. Now, with the addition of a world-class parts organization and a state-of-the-art customer response center, Bombardier's AOG response truly is best in class!"
—Ronald Earl, lead technician, Citigroup, Global

Cessna (positive: 32, negative: 5)

■ "Very good. Has sent technicians both by personal service vehicles as well as company aircraft to correct issues." —name withheld by request, Sovereign

Dassault Falcon (positive: 27, negative: 5)

■ "The only thing they lack is having a team and parts ready to go in their own AOG support aircraft." —name withheld by request, 2000EX

Embraer (positive: 8, negative: 4)

■ "Factory is fast but FedEx is slow...makes overall delivery slow sometimes."
—name withheld by request, Legacy 600
"Not great yet." —Bryan Elhardt, chief pilot, Heaven Leasing, Phenom 100

Gulfstream (positive: 47, negative: 6)

■ "One of the best features of Gulfstream customer support."
—Jorge Barroso, Tag Aviation, G550
■ "Second-to-none AOG response. I only wish that the AOG response was not preceded by a poor service-center visit resulting in aircraft issues and AOG situations." —Casey Childers, G150

Hawker Beechcraft (positive: 26, negative: 12)

■ "Slow on responding to AOG situations."
—Jeffrey Miller, chief pilot, Hawker jet
■ "The people at Hawker Beechcraft have handled every issue. We don't have down days due to parts or technical knowledge."
—Mike Strader, chief pilot, Regal Beloit, Hawker jet

Warranty Fulfillment

Bombardier (positive: 23, negative: 7)

■ "Excellent as long as you continue to make known your problems."
—name withheld by request, Challenger 300

Cessna (positive: 18, negative: 4)

■ "Excellent. Has covered all items without question to date."
—name withheld by request, Sovereign

Dassault Falcon (positive: 24, negative: 4)

■ "Dassault has used common sense and gone beyond the written commitment for us when requested." —name withheld by request, 2000

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Embraer (positive: 7, negative: 3)

- "In the U.S. warranty fulfillment is not a problem at the service centers. Outside the U.S. the service centers do not want to start warranty work until they have warranty approval from Embraer. This need for a preapproval takes time, usually at least 24 hours, which is unacceptable. This problem stems from the service centers not getting paid for all of the warranty work that they perform." —name withheld by request, Legacy 600

Gulfstream (positive: 18, negative: 5)

- "Industry-leading for a reason: they simply perform. Gulfstream takes ownership of the problem and does not stop until the issue is fully resolved." —John Griffin, director of operations, G450

Hawker Beechcraft (positive: 17, negative: 4)

- "Good as long as you explain in detail the troubleshooting and reason for replacing a suspect part." —name withheld by request, Hawker jet

Technical Manuals

Bombardier (positive: 20, negative: 17)

- "Getting better but still typos and errors on a mature program. Kind of hard to get a hold of anyone." —Francois Faust, AME, Challenger 604/605

Cessna (positive: 23, negative: 8)

- "The upgraded Cesview computer program along with uploadable DVD maintenance manuals has vastly improved." —name withheld by request, Citation V

Dassault Falcon (positive: 16, negative: 13)

- "I am satisfied with their manuals and am pleased they are going to be going to Web-based manuals in the fall." —Andy Lindborg, director of maintenance, 900B

Embraer (positive: 9, negative: 2)

- "A tour de force when it comes to maintenance manuals. Once you get the manual wired you can find it quickly. Information is accurate and complete most times." —name withheld by request, Legacy 600

Gulfstream (positive: 23, negative: 6)

- "Many errors. We send in corrections but don't see the manual updated quickly." —name withheld by request, G450

Hawker Beechcraft (positive: 17, negative: 11)

- "Poor. Maintenance manuals are out of date and have very limited useful information, making troubleshooting very difficult." —name withheld by request, Hawker 4000

Technical Reps

Bombardier (positive: 36, negative: 9)

- "They gave us classic aircraft operators field reps again, but apparently they're not boosting the plane-to-rep ratio here in the U.S. My local rep keeps getting sent overseas to handle other projects." —Doug Gordon, director of maintenance, Pittco, Challenger 601-3R

Cessna (positive: 31, negative: 9)

- "Don't have experience on aircraft as much as needed, rely too much on what troubleshooting program states. I usually end up doing better on my own." —name withheld by request, Citation II

Dassault Falcon (positive: 37, negative: 11)

- "Some are super-excellent. Others seem to be reading the troubleshooting printout at me." —name withheld by request, Falcon 50

Gulfstream (positive: 46, negative: 2)

- "These gentlemen are knowledgeable, professional and responsive; go above and beyond to assist." —name withheld by request, GIV-SP

Hawker Beechcraft (positive: 30, negative: 12)

- "Tech reps good, knowledgeable and experienced, but they want to charge a fee for help on older aircraft, which is absolutely unacceptable." —name withheld by request, King Air 90

Maintenance Tracking Programs

(sample comments)

Bombardier

- "Camp. Good but a little spendy." —name withheld by request, Challenger 300
- "Use Avtrak and will not use any other tracking program." —John Gaines, director of maintenance, Challenger 601-1A

Cessna

- "The switch from the old Cescom to the Camp/Cescom system has created some mistakes in the aircraft status with respect to maintenance intervals and next maintenance due. From time to time new mistakes are detected, so at the moment it is hard to trust the system." —name withheld by request, Cessna Mustang
- "Camp took over Cescom so we will see. My beef with Camp is they send you a requirement and I must determine if it is applicable." —Dewey Forker, Citation Excel

Dassault Falcon Jet

- "Camp does an excellent job of keeping up with time-oriented parts as well as providing logbook security within its program." —Roy White, chief pilot, Falcon 100
- "Avtrak good. We were the first Falcon 7X so there were some growing pains." —name withheld by request, Falcon 7X

Embraer

- "Flightdocs is a good platform to work from, with ease of access and entry. Data not always the most accurate or complete. A lot of hands-on needed to help things flow right." —name withheld by request, Legacy 600

Gulfstream

- "Avtrak powers CMP and does a fantastic job with its product. Great customer support and ever-expanding system." —Casey Childers, G150
- "CMP is not very good and needs much improvement... we switched to Camp." —name withheld by request, G200

Hawker Beechcraft

- "Avtrak is a great tracking program." —name withheld by request, Hawker jet
- "Have used Camp for years and the improvements are welcome and appreciated." —Mark Jones, director of maintenance, Cozzens & Cudahy Air, Hawker jet

Overall Reliability

AgustaWestland (positive: 1, negative: 0)

- "Generally good to excellent for a helicopter." —Robert Steinbrunn, aeromedical pilot

Airbus (positive: 2, negative: 0)

- "Perfect." —name withheld by request, ACJ

Bell Helicopter (positive: 4, negative: 0)

- "Our Bell 206s have been reliable and dependable aircraft. As I've been told before, 'They work well and last a long time.'" —Carl Boylan, chief pilot, Consumers Energy

Boeing (positive: 7, negative: 0)

- "Without question, the finest aircraft flying." —name withheld by request, BBJ/737

Bombardier (positive: 45, negative: 19)

- "More new-airplane bugs than you can shake a stick at, both in the cabin systems and base airframe." —name withheld by request, Global Express/XRS
- "Aircraft reliability has improved due to Learjet's continued commitment to improvement." —Randall Bogerding, chief of aircraft maintenance, Learjet 45/45XR

Cessna (positive: 51, negative: 9)

- "I have zero confidence this airplane will fly trouble free between maintenance cycles. I rate it an F-." —name withheld by request, Citation Encore/Encore+
- "The proven reliability of the Citation V can't be beat. Simplicity, loved by mechanics and pilots alike." —name withheld by request, Citation V

Daher-Socata (positive: 5, negative: 0)

- "No dispatch problems last year at all." —Jerry Fussell, owner, TBM700/850

Dassault Falcon (positive: 50, negative: 9)

- "Aircraft has been unreliable. Ours is one of the first. The updates are extremely expensive, and why does Dassault build an aircraft that has to have so many updates? It is like it is not complete when it is built and they build it after you own it. I would never buy an aircraft new with a low serial number." —name withheld by request, Falcon 7X
- "Continuously performs flawlessly, even when there are long periods of idle time between flights." —name withheld by request, Falcon 2000

Embraer (positive: 16, negative: 3)

- "Overall very good for a new aircraft. There are systems though like the flaps and brakes that have been a problem from the beginning and continue to be." —Ronald Gruner, president, Vallex Investments, Phenom 100
- "Day to day the aircraft is a pleasure to operate. There is no other aircraft out there that can do the things we need on the market. This super-midsize aircraft does what is asked without too much downside. Workmanship on the airframe is just as good as any Falcon product I've worked on." —name withheld by request, Legacy 600

Eurocopter (positive: 8, negative: 0)

- "This helicopter has never let us down." —Robert Johnson, director of aviation, Concord Jet Service

Gulfstream (positive: 51, negative: 6)

- "The G200 has come a long way in reliability over the last 10 years." —John James, aircraft manager, G200
- "The best airplane on the market for dispatch reliability, bar none." —Sean Leary, chief pilot, Harbour Group Industries, GIV

Hawker Beechcraft (positive: 47, negative: 13)

- "Due in part to lack of replacement parts availability, some of our flights have been canceled." —name withheld by request, King Air 350
- "Good until something breaks. Pilots like it, passengers like it." —name withheld by request, Hawker 4000

Mitsubishi (positive: 12, negative: 0)

- "The airplane is always ready to fly. No canceled trips this year due to maintenance." —Bruce Abel, president, Caltherm Aviation, MU-2F

Plaggio (positive: 1, negative: 1)

- "Fortunately for us, we have had a 100-percent dispatch rate the last year." —name withheld by request, Avanti II

Pilatus (positive: 6, negative: 2)

- "Good thing here is that although parts are expensive the aircraft does not break often." —Nicholas Fells, vice president, Fells & Associates, PC-12

Piper (Cheyenne) (positive: 1, negative: 1)

- "Not the best. We have more aircraft than we need, just to ensure our dispatch reliability." —name withheld by request, Cheyenne IIXL

Twin Commander (positive: 2, negative: 1)

- "Acceptable. The pressurization systems are needing more work and the avionics are causing more problems. They need new systems but the aircraft have reached a value where the upgrades are hard to justify." —Reed Lamb, director of maintenance, Tamarack Flight Management, Commander 840

Sabreliner (positive: 2, negative: 1)

- "Extremely good for an aging aircraft. Never missed or cancelled a trip due to a mechanical issue." —Thomas Windham, aviation department manager, Sabre 60

Sikorsky (positive: 4, negative: 0)

- "No reports of dropped flights due to maintenance." —name withheld by request

sponsors the free Pilots Review of Proficiency seminars for MU-2 pilots and anyone considering buying an MU-2. Three Prop seminars were held this year.

→ **Piaggio did not respond**

Pilatus

Pilatus owners now have new airframe life limits that will

extend the utility of their PC-12 single-engine turboprops. Pilatus's life-extension program has increased the safe-life limit to 25,000 hours/30,000 landings from 20,000/27,000. Pilatus also developed a supplemental structural inspection program that sets a damage-tolerant limit at 50,000 hours/60,000 landings.

Pilatus also added two new

service centers and four new satellite centers.

→ **Piper did not respond**

Sabreliner

Sabreliner has reestablished the Sabreliner operator advisory panel, "which provides for enhanced communications between aircraft operators and the mainte-

nance technicians and engineering/service/parts departments at Sabreliner," according to the company. Other Sabreliner developments include a new Web site for operators that includes the jet's history, performance data, service bulletin history and available upgrades. Sabreliner has also hired a current Sabreliner operator as a field service and technical support

advisor to add more technical expertise to the support team.

Sikorsky

In the information arena, Sikorsky Aerospace Services says it has improved its interactive electronic technical manuals by adding the capability for immediate updating of temporary revisions so data is completely current. Sikorsky added dynamic maintenance work cards, which include summaries of airworthiness requirements and maintenance procedures that reduce maintenance man-hours and facilitate FAA compliance audits, according to the company.

AOG support was improved by creating a system for verification of delivery of spares to customers, with 24/7 live communications and a team of delivery specialists working with all Sikorsky entities. This includes enhanced monitoring of AOG status and tracking fed to the Sikorsky customer portal.

Twin Commander

Twin Commander Aircraft now has 15 service centers in the U.S., two in Australia, two in Europe and three in Mexico and South America, providing ongoing support for the long-out-of-production Twin Commander turboprop. "It is an older airframe," said a spokesman, "but one that Twin Commander always wants to maintain as contemporary as possible."

To keep the fleet flying, Twin Commander issues service bulletins to fix what might seem like small items but that are important for safety and reliability. One example is a new nut with a seal where the condition and power lever cables attach to the cockpit levers, which helps prevent pressurization leaks.

Twin Commander has completed 50 Renaissance Commander upgrades. Every system in the airplane is restored and engines are upgraded to the latest Honeywell TPE331-10 configuration.

"The key to this game is to make sure that parts are out there," the spokesman said. "If a particular part price is getting out of line," he said, "we work with new suppliers to see if we can reengineer it and lower the cost."

Last year, Twin Commander moved its headquarters to Creedmoor, N.C., adding space for new inventory and supply systems. Service centers can now view the spares inventory online.

Every year, Twin Commander holds an event for owners, operators and service centers, alternating between Twin Commander University and the service center symposium. "We don't want our owners to feel like they're flying an orphan," said the spokesman. □

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Daher-Socata

Daher-Socata has expanded its service center network with four new centers (two in the U.S. and two in Europe) and plans to add centers in Chile, Mexico and Singapore during the coming year. At Socata North America, the company has increased inventory levels more than 25 percent and the company has expanded the number of components that can be exchanged to more than 120 part numbers and added a link on the mysocata.com <<http://mysocata.com>> Web site to services that customers can source directly from suppliers. To help lower costs, Socata

added free online access to all maintenance documents, including supplier component maintenance manuals and the illustrated parts catalog. Maintenance costs will also be lower due to implementation of a less expensive periodic inspection and cycle-based landing gear overhaul program to replace the former calendar-based program. Finally, Daher-Socata has increased customer communication via service information letters, and will hold its first technical seminar at this year's NBAA Convention and is increasing participation at TBMOPA events. □