

2006 AIN Product Support Survey

Gulfstream again scored the highest overall rating among business jets, Boeing edged out Cessna for second place. Mitsubishi continued to lead among turboprops and Bell aced the helicopter category.

PART ONE | AIRCRAFT

by Gordon Gilbert

Partly as the result of a 10-percent survey return rate (which experts consider statistically significant) and partly because we have improved our survey methodology, this year's report contains more depth, including the addition of several OEMs to the ratings list. These changes notwithstanding, for the fourth consecutive year readers gave **Gulfstream** the highest marks for both newer business jets (less than 10 years old) and older business jets (10 years or older).

In addition, readers placed OEM customer service of GILs, Gills and the Westwind/Astra series—now supported by Gulfstream sibling **General Dynamics Aviation Services (GDAS)**—in second place behind Gulfstream for support of its older GIVs and GVs.

Boeing, which appears in the survey for the first time, dislodged **Raytheon** (for its Hawker 400XP and Beech Premier support) for a second-place finish among newer business jet manufacturers. Boeing also edged out **Cessna** for second place in the overall rating for combined scores (where appropriate) of both newer and older business jets. **AIN** received responses from operators of 48 Boeing Business Jets, more than half the number of BBJs in service.

Cessna retained its third-place standing among newer business jets but dropped from second to third position among older business jets, behind new entry GDAS. The overall score of support for older Gulfstreams and IA1 jets resulted in a 21.69-percent increase in overall average rating over last year. GDAS took over support of the Gil and Gill in January and is in the survey for the first time as an OEM product-support provider.

Dassault logged the greatest percentage increase in the overall average among newer business jet OEMs, but the French manufacturer did not move up the ratings ladder and retained its fourth-place position. The higher overall average ratings it received, combined with lower overall ratings by some of the other OEMs, also kept Dassault in fifth place (behind GDAS) in the combined newer and older overall average ratings.

Raytheon had mixed and perhaps the most surprising results. In the category of newer business jets, the company's overall average rating for support of Beechjets, Hawker 400XPs and Premiers decreased 1.56 percent from last year's survey, helping to pull down this OEM's product support standing from second among newer business jets last year to fifth position this year—behind Dassault and ahead of its own support for the Hawker 800/850/1000 series.

According to survey results, overall support for the Hawker 800/850/1000 series improved more than 4 percent, but the higher score of new entry Boeing served to relegate Raytheon from fifth to sixth place among newer business jets. Further, a 6.11-percent decrease in support of older Hawkets and the higher rating of new entry GDAS conspired to oust Raytheon from third place among older business jets to fifth and eighth positions.

The overall rating for customer support of older Diamonds and Beechjets landed Raytheon in the fourth position, tied

with Dassault, for support of older business jets. But the OEM slipped from third to seventh among the combined newer and older aircraft ratings—again partly due to the higher ratings of new entries Boeing and GDAS.

Embraer also dropped a couple of positions—from sixth last year to eighth this year among the newer business jets (despite an overall rating improvement), and from fourth to sixth compared to the combined overall scores of manufacturers that must support both newer and older airplanes.

Bombardier was the only other jet OEM to have an overall score this year that decreased from last year among manufacturers of newer business jets. For example, the overall rating for support of newer Learjets and Globals decreased 4.75 and 1.28 percent, respectively. This contributed to Bombardier's remaining at the bottom of the product support ratings.

Further, the overall score this year for support of newer Challengers increased 3.45 percent, but that didn't do anything to elevate the Bombardier Challenger from its seventh overall position among the newer jets. What's more, Bombardier slipped from fifth to seventh place for its overall support of older Challengers.

If not for new entry **Sabreliner**, Bombardier would have retained its last-place position when comparing the scores of combined newer and older business jets.

New entry **Sabreliner** received the lowest overall rating among all business jet OEMs—5.58.

Mitsubishi, Pilatus Still Reign

In the older turboprop category, **Mitsubishi** retained its lead position despite the fact that its overall average rating decreased from 8.76 last year to 7.87 this year. The overall rating for newer **Pilatus** PC-12s also dropped (from 8.11 to 7.19 year over year), but the Swiss manufacturer still held the number-one position among newer propjets and the number-two slot for ratings of combined newer and older airplanes.

Cessna got edged out again—this time from third to fourth place in the older turboprop segment and from fourth to fifth place in the combined newer and older segment—partly because of its decreased overall score and partly because of the higher score of new entry **Twin Commander Aircraft (TCAC)**. The overall rating of 6.27 for support of Twin Commanders propjets placed TCAC in fourth position among older turboprops and in fourth position among newer and older manufacturers combined.

As it has in past surveys, **Piper** rated last for its support of Cheyennes. However, the company's score improved by more than 25 percent year over year.

The Return of Rotorcraft

A statistically invalid response from helicopter operators last year prevented a report on this segment of the industry in **AIN's** 2005 Product Support Survey. Such is not the case this year. Operators of nearly 350 rotorcraft submitted sur-



Gulfstream G450

Combined Aircraft Ratings

(in order of the highest 2006 ratings)

This chart shows the average ratings when the overall scores for newer and older business airplanes (where applicable) are combined. Raytheon Aircraft was the only manufacturer to score less this year than last year for support of its newer and older jets. The OEM also dropped several levels in the standings. However, Raytheon Aircraft improved its rating for turboprops this year versus last year, although its standing remained the same.

JETS	2006	2005 ¹	Change from 2005
Gulfstream	7.53	6.79	▲
Boeing	7.41	—	—
Cessna	7.06	6.85	▲
GDAS ²	7.04	—	—
Dassault	6.58	6.41	▲
Embraer	6.47	6.24	▲
Raytheon	6.42	6.53	▼
Bombardier	6.18	6.13	▲
Sabreliner	5.58	—	—

TURBOPROPS

Mitsubishi	7.87	8.76	▼
Pilatus	7.30	8.11	▼
Raytheon	6.72	6.45	▲
Twin Commander	6.27	—	—
Cessna	5.52	5.56	▼
Piper	5.29	4.21	▲

¹ No rating in 2005 means these are new additions in 2006.

² General Dynamics Aviation Services supports the Astra and Westwind and since January 1 this year the Gil and Gill.

veys, ranking **Bell** in first place and **MBB** in last place.

Aerospatiale and **MBB** are supported by **Eurocopter** but were graded separately in this report to show the difference in support levels that readers say the French-German company provides to its newer aircraft (rated under Eurocopter) and the two older aircraft models (Aerospatiale and MBB) for which it is responsible.

The operators of Eurocopter-built aircraft rated OEM support better than did the operators of the older aircraft that were built before their respective OEMs merged. □

2006 RATINGS

Products are listed in the order of their 2006 overall averages.

	2006 OVERALL AVERAGE	2005 OVERALL AVERAGE	PERCENTAGE CHANGE	AUTH. SERVICE CENTER	FACTORY SERVICE CENTER	PARTS AVAILABILITY	COST OF PARTS	AOG RESPONSE	WARRANTY FULFILLMENT	TECHNICAL MANUALS	TECHNICAL REPS	OVERALL AIRCRAFT RELIABILITY
NEWER BUSINESS JETS ★												
GULFSTREAM (all models)	7.50	7.06	6.23%	7.26	7.34	7.61	5.91	8.02	7.78	7.28	8.15	8.14
BOEING (BBJ)	7.41	N/A	N/A	6.71	6.97	7.33	6.71	7.54	7.36	7.85	7.85	8.34
CESSNA (Citation)	7.12	6.97	2.15%	6.98	7.14	7.27	5.65	7.16	7.40	7.33	7.40	7.78
DASSAULT (Falcon)	6.96	6.75	6.75%	7.00	6.42	6.92	5.00	7.17	7.55	7.06	7.69	7.84
RAYTHEON (Beechjet, Premier I, Hawker 400XP)	6.95	7.06	-1.56%	7.09	6.71	6.98	5.63	6.83	7.44	7.03	7.72	7.13
RAYTHEON (Hawker 800/850/1000)	6.77	6.50	4.15%	6.64	6.66	6.17	5.50	6.69	7.28	7.05	7.17	7.77
BOMBARDIER (Challenger)	6.60	6.38	3.45%	6.70	6.25	5.78	5.25	6.38	7.33	6.89	7.23	7.57
EMBRAER (Legacy 600)	6.47	6.42	0.78%	5.15	5.77	5.67	5.87	5.74	6.42	7.67	7.74	8.21
BOMBARDIER (Global Express/XRS/Global 5000)	6.19	6.27	-1.28%	6.54	6.14	4.71	4.83	5.72	6.68	6.74	7.43	6.91
BOMBARDIER (Learjet)	6.02	6.32	-4.75%	6.62	6.20	4.84	4.69	5.66	6.25	6.44	7.02	6.44
OLDER BUSINESS JETS ★★												
GULFSTREAM (GIV-SP through G550)	7.70	7.23	6.50%	7.26	7.50	8.00	6.19	8.51	7.90	7.45	8.23	8.27
GENERAL DYNAMICS (Westwind, GII, GIII)	7.07	5.81	21.69%	6.73	6.66	6.97	5.44	7.60	6.89	7.42	7.85	8.10
CESSNA (Citation)	6.84	6.68	2.40%	6.77	6.71	7.02	5.76	6.69	6.70	7.23	7.05	7.58
DASSAULT (Falcon)	6.60	6.06	8.91%	6.79	6.32	6.45	4.60	6.86	6.55	6.70	7.39	7.73
RAYTHEON (Diamond, Beechjet 400/400A)	6.60	N/A	N/A	6.57	6.42	6.45	5.06	6.55	6.63	6.88	7.37	7.51
BOMBARDIER (Learjet)	6.29	5.93	6.07%	6.19	5.82	6.21	5.36	6.32	6.03	6.39	6.81	7.45
BOMBARDIER (Challenger)	6.18	5.93	4.22%	6.58	6.08	5.61	4.74	6.04	5.99	6.46	7.10	7.00
RAYTHEON (Hawker)	5.99	6.38	-6.11%	6.50	5.71	5.60	4.76	5.81	5.67	5.96	6.50	7.35
SABRELINER	5.58	N/A	N/A	5.18	5.27	5.48	4.65	5.65	4.88	5.64	6.30	7.21
NEWER TURBOPROPS ★												
PILATUS (PC-12)	7.19	8.11	-11.34%	7.29	7.16	7.23	6.03	7.31	7.05	7.03	7.31	8.28
RAYTHEON (King Air)	6.97	6.48	7.56%	7.03	6.14	7.04	6.06	7.44	7.11	7.41	6.63	7.88
OLDER TURBOPROPS ★★												
MITSUBISHI (MU-2)	7.87	8.76	-10.16%	8.48	8.28	7.22	6.61	7.87	7.44	8.04	8.67	8.24
RAYTHEON (King Air)	6.64	6.42	3.43%	6.60	6.45	6.72	5.46	6.58	6.54	6.84	6.90	7.64
TWIN COMMANDER	6.27	N/A	N/A	6.08	5.61	6.26	4.73	6.58	6.00	6.12	7.19	7.89
CESSNA (Conquest)	5.52	5.56	-0.72%	5.75	5.83	4.72	4.82	5.63	5.25	5.62	4.82	7.26
PIPER (Cheyenne)	5.29	4.21	25.65%	5.72	4.76	4.56	4.83	4.97	4.14	6.08	5.35	7.19
ROTORCRAFT												
BELL	6.92	N/A	N/A	6.62	6.64	6.82	5.49	6.99	7.23	7.50	7.39	7.65
SIKORSKY	6.80	N/A	N/A	6.79	6.66	6.43	5.26	6.80	6.76	7.16	7.50	7.84
AGUSTA	6.04	N/A	N/A	5.60	5.75	5.88	4.35	6.46	6.55	6.00	6.88	6.89
EUROCOPTER	5.90	N/A	N/A	5.54	5.49	5.21	4.19	5.74	6.37	6.11	7.31	7.14
AEROSPATIALE	5.67	N/A	N/A	6.33	6.18	5.18	4.14	4.73	6.38	5.23	5.86	7.05
MBB	5.39	N/A	N/A	5.20	5.50	4.94	4.24	4.83	5.19	6.33	6.00	6.28

★ Less than 10 years old

★★ More than 10 years old

Bold Type indicates highest rating in each category.



How the Survey Was Done

The intent of the annual **AIN Product Support Survey** is to give readers as highly accurate and complete a picture as possible of how well the OEMs and their authorized service facilities provide customer support.

Past surveys were done entirely on paper via mail and faxes. This method proved satisfactory, but this year we decided to conduct the survey electronically via the Web and e-mail. To help us do this properly we contracted with Newtown, Conn.-based Forecast International, a 32-year-old provider of data for the aerospace industry.

With Forecast International's assistance, **AIN** designed an electronic survey form similar to a paper form we mailed or faxed to those few readers we could not contact by e-mail. Those receiving a "paper" survey were invited to go to a specific Web site to complete the survey online.

As in the past, we asked readers to apply values from 1 to 9 in nine separate categories, with less than 2.5 defined as "inadequate" performance, 5.0 representing "average" performance and 8.5 to 9 designated "excellent."

We also asked for comments in each of the categories. To help focus the responses, here were the key points we asked respondents to consider within each rating category:

Authorized/Factory Service Centers—cost estimates versus actual, on-time performance, scheduling ease, overall service experience.

Parts Availability—in stock versus back order, shipping time, paperwork.

Cost of Parts—value for price paid.

AOG Response—speed, accuracy, cost.

Warranty Fulfillment—ease of paperwork, extent of coverage.

Tech Manuals—ease of use, formats available, timeliness of updating.

Tech Reps—response time, knowledge, effectiveness of visits.

Overall Product Reliability—How the product's overall reliability and quality measured up to your expectations and the provider's promises.

More than 16,000 **AIN** subscribers were selected to take the survey. Vindicating our decision to take the process electronic, we received a

10-percent response, by far the highest of any **AIN** product support survey. The more than 1,600 respondents operate a total of 3,483 aircraft. In addition to the numerical rating, virtually all respondents provided at least one comment.

The data provided by **AIN** readers and "crunched" by Forecast International is so voluminous that to provide a quality report on each of the main product segments—aircraft, engines and avionics—it is necessary to split them into separate articles. We believe that only by doing this can we present the complete and qualitative analysis that the survey results deserve.

With that in mind, this month's article will cover survey results pertaining solely to airplanes and helicopters. Survey results for turboprop, turbojet, turboprop and turboshaft engines will be the subject of an article in the September issue. And in an October article we will deal with the survey results for avionics.

Because some aircraft models date back as far as 40 years, aircraft age can be a significant factor in ratings. This year, as in the past, we've separated aircraft into two segments—"newer" (less than 10 years) and "older" (10 years or older).

In some cases, a particular manufacturer's (such as Raytheon or Bombardier) aircraft are separated into multiple groupings to reflect possible differences in the level of support for aircraft models acquired through acquisitions and mergers over the years.

Gulfstream Aerospace no longer has product-support responsibility for GIIIs and GIIIs, factory support for these aircraft having transferred to Gulfstream sibling General Dynamics Aviation Services on January 1.

The change addresses operators' concern that their GIIIs and GIIIs sometimes take a backseat when competing with newer models for maintenance attention at Gulfstream's factory-owned service facilities. GDAS is already responsible for supporting the Westwind/Astra fleet.

Finally, our readers are a vocal and critical group when it comes to product support. In most cases, the top three ranked companies received overall average scores in the 7.06- to 7.87-range, while the bottom three ranked companies earned overall average scores between 4.86 and 6.42. Mitsubishi received the highest score in a single category—8.67 for technical reps. —G.G.



In their own words

AUTHORIZED SERVICE CENTERS

In addition to giving a numerical value to OEM service and support, survey respondents submitted hundreds of comments about their support experience. AIN regards the comments as anecdotal insight into why respondents voted the way they did.

Vendor companies that scored higher were not without their critics, and companies that scored lower had their fans. It's important to remember that squawks voiced in the comments are often based on a single or small number of incidents and might not represent a vendor's or OEM's overall performance in product support.

However, that said, the comments overall supported the numerical scores. The majority of comments were positive for Boeing, Cessna, Gulfstream, Mitsubishi and Pilatus. The majority were negative for Bombardier and Piper. And they were generally split down the middle for Dassault and Raytheon.

In past AIN product support surveys we received fewer comments and they were organized by type of aircraft and manufacturer because we had only one space for comments on each survey form. This year, to improve both the quality and quantity of comments, we asked readers for a response to each of the nine rating categories. That resulted in a response rate beyond our expectations.

Readers clearly took advantage of the ability to focus their responses on specific topics. Because of this focus, the comments are arranged in order of the rated categories. Unfortunately, space does not allow AIN to print every one of the several hundred responses submitted. Therefore, AIN took care to select a sample of nearly 150 that we believe are useful, pertinent or insightful. The names of respondents and their companies are included

Bell 407



Pilatus PC-12



The chief pilot for a Wilson, N.C. flight department that operates a **Citation 550** wrote: "Citation service centers are the worse [sic] at inaccurate prices and inaccurate downtimes. How do these places stay in business treating people and airplanes the way they do? Most everything they have 'fixed' has had to be repaired somewhere else."

The chief of maintenance for a company in Blue Grass, Iowa, that flies a **Citation V** said: "Authorized service centers appear to have same expertise as factory centers and will do the same job for a better price."

Maintenance technician Michael Hudgin of Swagelok Flight Operations, Highland Heights, Ohio, who maintains a **Challenger 601-3A**, wrote: "General Dynamics [Aviation Services] in Appleton, Wis., is high on my list of service facilities that have the capability to do a job not far off of the original quote. Excellent people to work with."

Midcoast Aviation got two thumbs up for **Challenger** work from two Midwest companies, as well as a **Falcon** operator, although the Falcon operator, a large charter/management company, believes "Dassault needs to authorize more" facilities. This operation also believes some facilities are "quite good" for the **Global Express**, "but some are lacking in willingness, ability and concern for product support," particularly in overseas operations.

Midcoast also got a good word from maintenance manager Bob Bauer for a **Global Express** operated by United Technologies. Midcoast is the "best in class for facilities and personnel. A pleasure to do business with."

Duncan Aviation received praise from several operators of **Learjets**, **Citations**, **Challengers** and **Hawkers**. But not from an aviation manager for a **Citation VII** operation: "Duncan's strength is the large inspections. They are weak on troubleshooting systems. Not impressed by the recent paint job."

A senior captain for a Midwest operator of a **King Air** wrote: "Elliott Aviation at Des Moines International Airport maintains the King Air and does a very acceptable job. Parts seem to be becoming harder to come by, but Elliott Aviation seems to always find what we need, although often at a steep price. They also have experienced mechanics that know King Airs and are very good at getting us in at a moment's notice."

Larry Richards, aviation manager for a southern-based operator

of a **Falcon 10** and **Falcon 20**, said: "Landmark is good. Premier Aviation in Alton, Ill., blows everyone else away in service and technical expertise with respect to Falcons."

Joel Felker, director of maintenance for a southern-based operator of a **Falcon 50** and **900EASy**, wrote: "Good support from several authorized service centers around the states. Two stand out—Jet Aviation PBI is excellent. Garrett [now Landmark] at LAX is good also."

David Fortin, chief pilot for Shinn Enterprises, Oklahoma City: "General Dynamics Aviation Services in Dallas has been a pleasure to work with on our **Gulfstream HSP**. Its mechanics seem to be very experienced, and its pricing is very competitive with other shops." Mark Gardner, a **Gulfstream G200** operator and aircraft manager for charter/management firm Executive Jet Management in Fort Worth, Texas, voiced essentially the same opinion.

"General Dynamics [Aviation Services], Las Vegas, good overall service," wrote the chief pilot for a Northeast operator of a **Gulfstream IV**. "A little slow on parts delivery, but excellent technicians." However, a **GIV** operator based in the northwest had a different opinion: GDAS in Las Vegas, he wrote, "brings the average way down for service centers. No problems anywhere else."

Juergen Wiese, aviation department manager for a European-based operation that flies a **Hawker 800XP**: "Jet Aviation Zurich did a fantastic job of keeping our aircraft in perfect flying condition during the somewhat lengthy sales process. Jet Aviation Basel is doing great on the **Falcon 2000EX EASy**."

Ken Hall, director of operations for Ahern Rentals, wrote: "Premier Air Center, ALN, completed the RVSM and TAWS compliance on **Citation 525-0341**. Their quote was 27 percent below the cost of a bid from a factory service center. Shop completion standards were excellent. All work was completed on schedule and on budget, adhering to the quote precisely. All personnel from sales, engineering, maintenance and administration were very cordial and highly professional.

"In the past, I have been reluctant to venture outside the factory-owned service center network for major maintenance. Premier Air has changed my perception. Lower cost does not necessarily mean lower quality. I would highly recommend Premier Air Center, and I will continue to utilize their services for future maintenance."

FACTORY SERVICE CENTERS

Two **Challenger** operators wrote about their negative experiences with Bombardier's factory service centers.

Doug Gordon, director of maintenance for Pittco in Memphis, which operates a **601-3A**, said, "I have lost my confidence in dealing with most of the factory service centers."

The director of aviation and chief pilot for a Colorado-based company said about his **604**: "I would not recommend [Bombardier] Tucson to anyone. They are unprepared and very argumentative. Wichita didn't seem up to par either."

Capt. C. Dauber flies a **Challenger 601-3A** for a West Coast company: "The BAS Service Center in Tucson has



Cessna's Citation service center in Wichita is one of the largest maintenance facilities in the world.

experienced a decline in availability of

parts and personnel over the past several years. The effect on performance has been to slide from an outstanding service center five or six years ago to barely adequate. Our feeling is that this is a result of management activity in Montreal rather than the local team."

The director of aviation for a **Learjet**- and **Challenger 600**-operating Midwest-based industry wrote: "Factory service centers are consistently higher priced than authorized centers and rarely complete jobs on time. Billing is always difficult, requires a lot of time to dig through and get it right."

The chief rotary-wing pilot for a U.S.-based operation of an international charter/management firm had this to say about **Agusta A109** factory support: "overbooked, not enough technicians, unable to supply service in a timely manner. Lacking in quality control."

William Howell, v-p and director of maintenance for a financial institution, said, "all Cessna factory service centers are very good."

Jay Jacobs, chief pilot for **Beechjet** operator Swing Plane Aviation in Ball

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M7 Aerospace in San Antonio is the factory-authorized service center for the more than 750 Fairchild and Swearingen Metros and Merlins still flying. The number of responses from Metro and Merlin operators, however, did not meet our threshold for inclusion in this year's survey.



Bell was rated highest among rotorcraft and Pilatus scored best for newer turboprops.



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Cessna Citation Sovereign

What Have They Done For You Lately?

In response to a request by AIN, aircraft manufacturers submitted what they considered to be three recent and significant product-support developments at their respective companies. (Bell, Bombardier, Eurocopter, Piper and Sikorsky did not respond.)

Boeing

- BBJ regional field rep added in Kuala Lumpur, Malaysia.
- Jet Aviation in Dubai and Singapore appointed BBJ service centers.
- More part numbers added to spares exchange pool program.

Cessna

- Expanded service center capacity by more than 40 percent, including construction of a 443,000-sq-ft service center in Wichita that can hold more than 100 Citations simultaneously.
- By year-end will have increased its number of field service engineers by more than 60 percent since 2004.
- Introduced the Sovereign with an MSG3 maintenance program. In April received FAA approval for MSG3 for the Citation X, and it expects FAA approval for an MSG3 program for the XL and XLS by early next year.


Dassault Falcon Jet

- Established 98-percent spares availability level. Parts service life guaranteed to TBO. AOG service averages two-hour "pick-to-ship."
- Launched "Reliability Plus," a program aimed at enhancing dispatch reliability.
- Increased number of field service reps and customer service managers by 33 percent over the last five years.

Gulfstream

- More than 1,000 Gulfstream operators use CMP.net online maintenance tracking service, which is also applicable to non-Gulfstream aircraft.
- Relocated portions of spares inventory to strategic locations in U.S. The company is also seeking overseas locations for parts distributors.

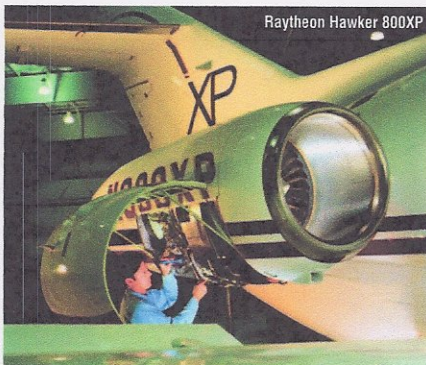
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 The overall rating for Cessna Citation service in 2006 improved over 2005, but not enough to overtake Gulfstream or newcomer Boeing.


but the service reps are thieves. [They are] constantly making errors that are always in their favor." A Northeast operator of a Beechjet 400A claims the San Antonio factory service center "never meets the deadline."

The manager of flight operations for a company that flies a Learjet 60 had this to say about Bombardier Wichita: "This center is very good; however, its sense of urgency is low until it is ready for you to leave. We had an instance where a rudder cable was caught under a fluid line, and they were so ready to move us out of the hangar, they were slow to troubleshoot the problem."

Ken Hall, director of operations who flies the Citation 525 and 501SP for Ahern Rentals: "Sacramento Cessna Citation Service Center—flawless. Always on schedule and highly professional. Cost can be uncomfortably high for major events, but we always leave on deadline with no remaining discrepancies."



Raytheon Hawker 800XP

 Support for newer Raytheon Aircraft Hawkers was rated better than for older Hawkers.

A maintenance manager for a West Coast-based company operating a Citation 560XL wrote: "Cessna service center management doesn't know what customer relations means.

I spent three weeks in a CCSC and never met the management above the lead man running my job."

David Vegh, line captain for a southwestern-based Citation 560XL operator, said: "All but one center has been terrible in completing the checks on time. More than once we have delivered the crew to pick up the aircraft at the time we were told only to have them wait for several hours and as long as a day-and-a-half. Very frustrating. And it is frequent."

Paul Hansrote, captain at a southern base for an international charter/management firm: "Cessna Citation Service Centers are by far the best OEM service centers for any of the light and medium jets. Nonetheless, there is huge room for better quality in nearly all areas. It is a shame that General Dynamics sold Cessna to Textron. It's fun to imagine what the aviation world would look like if Gulfstream and Cessna had been paired."

Roger Lipcamon, director of operations for an upper Midwest company: "If I were rating the MKE Citation Service Center, they would rate 9+ across the board. As for ICT, 5 at best. Accounting/invoicing for work completed rates 1. Over five years of using the facility, with visits for minor items to Phase 1-5 and engine Check 3s, we have yet to receive an invoice that was without problems. The overcharges were properly credited but only after multiple phone calls for each."

Chief pilot Ephraim Ingals of a West Coast company wrote: "Turbomeca engine factory repair experience has been completely unsatisfactory, with two engines returned to Turbomeca four times for rework after in-flight failure. Customer support reps from Turbomeca fail to return calls and to follow up on agreed-upon agendas and procedures."

From the manager of aircraft maintenance for a recreational vehicle manufacturer: "Factory Hawker service centers do a pretty good job most of the time."

Director of maintenance for a southern-based service company: "Factory service centers vary widely in their abilities. Citation appears a little better than Raytheon, but both (in our region) are lacking in customer service, timeliness and communication. Once either aircraft is dropped off for work, it takes a lot of effort on our part to determine when the aircraft will be ready.


Both [companies] have shown evidence of rushing through the authorized work, failure to properly identify a problem and unnecessary repair.

"This was not the case when we had some work done by the Citation service center in the Carolinas. They were not only on time and communicated all problems but kept me in the loop throughout. The work was very good, and they beat their estimated time by several days."

Alex Goodwins, chief of maintenance for a UK-based Gulfstream G550 operation, had this to say: "[I] only use Savannah facility. All my experiences have been generally good. GAC lets itself down with parts supply sometimes. Having a UK-registered plane is sometimes also a problem



Bell service center

 There was only a 0.12 difference in the overall average between top-scoring Bell Helicopter and second-place Sikorsky Aircraft.

because the company's return-to-service personnel aren't quite up to speed with EASA. But then who is?"

PARTS AVAILABILITY

Doug Gordon, director of maintenance for Challenger 601-3R operator Pitco of Memphis, had this to say about parts availability at Bombardier: "You would think that Bombardier would know what parts they do or do not have in stock, that are high-failure items and that are in high demand, and stock accordingly. Being forced to purchase parts from Bombardier's competition when I am on Smart Parts is not a good thing."

The chief of maintenance for an international electronics concern that operates a Challenger wrote: "No availability issues on either aircraft; however, parts reliability out of the Smart Parts system for a 601 has been very poor, often requiring several components to get one good one."

An aviation manager with TAG Aviation said this regarding its Global Express: "Strange, but items that you would think would be hard to get seem to come through in a timely manner, but parts that are more subject to failure we have difficulty getting."

A maintenance technician for a
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• Added field service reps in Dubai, Hong Kong, Singapore and Zurich. As part of the company's call center upgrade "experts answer within two rings."

MD Helicopters

- Reduced AOGs by 50 percent and filled more than 86 percent of AOGs in an average of one week.
- Increased weekly spares fill rate to an average of nearly 80 percent.
- Improved parts supply chain flow and availability and increased monthly inventory receipts by 86 percent.

Piaggio

- Fielded two more Avanti tech reps.
- Added three service centers.
- Increased spares inventory.

Pilatus

- Signed an agreement with Camp Systems International to provide maintenance-tracking services for PC-12 operators.
- Establishing a dedicated AOG coordinator to streamline the process of getting customers flying as soon as possible.
- Promoting customer feedback through direct contact, regional operator conferences, online surveys and an owners group.

Raytheon Aircraft

- Created the position of president of global customer service and support.
- Instituted customer-service training from The Ritz-Carlton Leadership Institute.
- Since 2002, has spent \$9 million to improve support, including the ability to fulfill spares at 10 orders simultaneously and delivering 96-percent order fill rates.

Socata

- Created online access to parts database, allowing instant access to parts numbers and list prices.
- Provided direct links with TBM Owners and Pilots Association.
- Established formal customer service review process that allows customers and service centers to provide direct feedback. Service centers are surveyed regularly for spares delivery quality and timeliness.



Dassault Falcon 2000EX EASy

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Northeast-based flight department wrote: "Global Express parts availability for 2005 was pitiful at best. Don't sell aircraft you can't support."

The director of aviation for a Midwest manufacturer that operates a Learjet wrote: "Bombardier is trying hard to rectify parts shortages. It is saying the right things and apparently putting a lot of resources into this problem. This has been a long-time problem that can't be fixed overnight, but we are seeing progress."

The manager of flight operations for a company that operates a Learjet 60 said: "It seems that since the Bombardier parts center has moved to Chicago (our home base), the parts are not any more easily available. The parts are always in the computer as available, but when the parts center people go to the shelf, the parts are not there."

From the director of maintenance for a southern-based flight department that has a Learjet 45: "Continuing problems with lack of stock, particularly with T/R harnesses, flight-control cables; vendors out of business."

Chief pilot Ephraim Ingals of a West Coast company had this to say: "I think Eurocopter goes out of its way to destroy parts en route to the customer. The shipping containers are terrible."

Carl Fagerberg, lead mechanic for the operator of a large fleet of helicopters and airplanes, wrote: "AS 350B2 and B3 airframe parts availability is pretty good. Engine parts are a different story for Turbomeca. EC 135P2 great service so far, new model less than two years in service."

Christopher Peachey, deputy technical manager for an Asia-based operator, wrote: "Boeing has excellent AOG parts support. Bell parts support is slow and MDH parts support is limited."

Regarding its Falcon 20, a multinational charter/management company had this to say: "Only remanufactured parts available. Exceptionally poor quality control on rebuilt parts. We usually go through at least one rebuilt unit to get one that works."

James Tuck, general manager at US Steel: "Gulfstream G450 parts are not up to the excellent past performance of Gulfstream."

The captain for a Midwest-based company wrote: "The age of the Gulfstream II is beginning to have a greater effect on parts availability each year."



Dassault support of newer Falcons showed the greatest improvement of any OEM supporting newer jets during the past year.

The chief of maintenance for a Northeast company said: "Gulfstream does not support in-service aircraft with parts. They use the parts just-in-time approach, which works in the factory but not in the field. We lose valuable days every inspection waiting for parts."

Tim McQuain, director of maintenance for RCR Air in Lexington, N.C.,

from Raytheon is exorbitant."

The chief pilot for a Virginia operation said: "B200 parts are through the roof."

Marcus Bruninger, captain at a European company, wrote: "All Falcon parts are expensive."

Of the BBJ, one director of maintenance wrote: "BBJ parts are extremely high. Limited vendors to get



Mitsubishi MU-2



Thanks mainly to Turbine Aircraft Services, the long out-of-production Mitsubishi MU-2 continues to receive high marks for product support.

wrote: "Hawker 700 parts are starting to become harder to find, with unreasonable lead times. If a manufacturer is going to purchase an aircraft line, it should become responsible for the older models as well. I realize there is a cutoff point, but there are a vast number of 700s still in service. Something as simple as meters, gauges, windshields and many other parts should be available."

A pilot for an upper northwestern-based company that flies the Hawker 700 had this to say: "Had a gear overhaul and paid well in advance but there was a scramble for parts, and when it came time to do the work Duncan couldn't get some parts and we were left out to dry for an extra 45 days. We did our part to assure the gear would get done in a timely manner, but someone else didn't."

The Northeast operator of a Beechjet 400A wrote: "Rapid [Raytheon Aircraft's parts department] never has a thing in stock. It's always on back order."

From a Hawker 800XP operator in the South: "Rapid has nothing on the shelf. AOG situations are better dealt with by outside vendors, if the part is available to vendors."

COST OF PARTS

Regarding the cost of parts, the director of maintenance for a Northeast company that flies a Beechjet 400A had this to say: "I can get most parts at a better price than Rapid from an outside source."

Jay Jacobs, chief pilot at Swing Plane Aviation, Ball Ground, Ga.: "Absurd. Just paid \$362 for a placard for a Beechjet."

Wrote a captain from a Missouri-based flight department: "Anything

parts from; usually have to get all parts from Boeing."

An aviation maintenance technician for a large consumer services company had this to say: "Bombardier's cost of parts is considerably higher than other vendors. But they have you stuck in your Smart Parts contract so all you can do is complain."

An international electronics firm took issue with Bombardier's parts program: "Smart Parts for the Challenger 601 is convenient but way over-priced. Can often find better parts at less than half the cost at other locations. As an example, Smart Parts quoted over \$200,000 for aileron PCUs, but we were able to get exchange units from PCU manufacturer for less than \$8,000."

Paul Hansrote, Citation Encore captain at an international charter/management operation, wrote: "The cost of parts is less annoying than the reliability. Cessna does not effectively track for rogue parts. One large fleet operator began tracking R&Rs of individual parts and found that Cessna had sent the same part up to 17 times, only to have the rogue fail every time in a very short amount of time. Every time the offending item returned, the paperwork stated the thing had been bench checked and ops checked OK. This is not isolated and requires calls for prompt action in Wichita."

From a Falcon operator: "Dassault is making efforts to listen to the customers' requests about parts pricing. Dassault has asked customers to tell it other vendors' prices and they listen. When possible Dassault tries to change pricing. It has also in the last year or so informed operators when prices on model-specific parts have been lowered. We are willing to pay a slightly higher price for the

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Embraer Legacy 600

As Time Goes By

How old an aircraft is and how much it is used are factors in how much product support is required and how costly that support is going to be in both dollars and downtime. This chart shows the average aircraft age and annual hourly usage of the respondents' aircraft. For that portion of the total fleet, the average age for most business jet models is more than five years (beyond typical new-aircraft warranty periods) and most are in the air more than 500 hours a year.

Aircraft	Average Age (Years)	Average Annual Hourly Usage ¹
Astra/Westwind	22.34	641.27
BBJ/737	7.97	729.97
Beechjet/Hawker 400XP	8.29	546.62
Challenger	9.25	617.89
Citation	10.56	437.27
Falcon	12.11	564.78
Gulfstream	9.13	575.62
Hawker	10.54	503.08
Learjet ²	11.88	555.78
Legacy 600	3.54	736.59
Premier	2.14	247.85
Sabreliner	25.78	306.66

¹ Includes private, charter and fractional usage.

² Does not include Learjet 20 series.



Raytheon Premier I



Embraer's standing for support of the Legacy 600 improved this year, due to its better marks and Raytheon's worse marks.

higher level of customer support, and knowing that Dassault will find ways to help keep its product flying."

An international charter/management operation said this about its **Falcon 20**: "Some components priced three times higher than the exact same part from Cessna Citation parts department." The same operator's comments on **Global Express** parts: "Wow, [Bombardier] thinks an awful lot of its parts."

Citation CJ2 operator: "The airplane is covered under Proparts so parts pricing has usually never been an issue. For example, our coffee pot broke around the lid and a replacement was \$3,000 with the old core returned. I would not have been happy about that if we weren't on Proparts. \$3,000 for a coffee pot is absurd."

The aviation manager for a West Coast **Gulfstream 200** operator wrote: "Nav light bulbs, \$426 each. Outrageous."

A pilot for a Midwestern company that flies a **Hawker 1000**: "\$28,000 for a windshield? I'm in the wrong business."

Tim McQuain director of maintenance for RCR Air of Lexington, N.C., which operates a **Hawker 700**, wrote: "When Raytheon started pulling discounts from the service centers, our discounts went away as well. This way Rapid can sell more parts. The operator absorbs the cost difference. I am just glad we operate only one each of these aircraft and not three, like our Embraer 120s."

The director of maintenance for an Indiana company had this to say about the cost of parts for busi-



Raytheon support for the Premier and Beechjet lost ground considerably over the past year.

ness aircraft: "I believe there will always be complaints about the cost of parts. I try to remind myself that the components on a corporate aircraft are usually produced in fairly small lots, as compared to an aircraft with high production rates such as the 737 or a mass-produced automobile. However, you're still paying for the same research and development costs, certification costs, tooling and manufacturing costs, and the ever growing cost of liability...there's just less production to dilute [costs] over."

AOG RESPONSE

The director of aviation for a large manufacturer said: "Although **Bombardier** understands that AOG response is critical to customer satisfaction, there is still a lack of responsiveness from the 'front line.' The passion to do it better needs to shift down through the organization and hasn't quite made it from the leadership to all of the front-line people who deal with customers."

The line captain for a multinational foods supplier wrote: "**Cessna** AOG re-

lenger 601-3A part(s) ship out slow at times. Proper documentation with parts has been an issue."

Doug Gordon, director of maintenance for **Challenger 601-3R** operator Pittco of Memphis, said: It's a "good thing we don't fly much, otherwise I'd have to stock a spare airplane. Chicago warehouse was a poor location, due to delays caused by weather when trying to get parts shipped out."

An aviation manager with TAG Aviation, which flies the **Global Express**, wrote that the topic was a "tough one to discuss since we just had an AOG situation in Japan. Got pretty good response from Montreal but they were still confused as to whether they sent the part and whether it was the right one. Doesn't bolster our confidence."

A representative of an international supplier of office equipment said, "**Gulfstream** really shines. **Bombardier** should be ashamed of itself."

Captain Barry Newsham, Newsham Holding, flying the **Hawker 800B**: AOG "poor. Recently AOG 11 days with transponder problem and seven



Gulfstream G100



Gulfstream's dedicated customer support G100 N247PS provides 24/7 product support.

response is good. **Gulfstream** AOG response is excellent with the AOG aircraft it uses." Gulfstream has dedicated a G100 to respond with parts and technicians for AOG situations.

The vice president and director of maintenance for a U.S.-based financial institution wrote: "**Dassault** and **Learjet** are the worst when it comes to AOG performance. **Gulfstream** is the best so far."

Alex Goodwins, chief of maintenance for a UK-based operation, is satisfied with **Gulfstream** support "whether it be technical assistance or parts. If they have the part we can sometimes get it more quickly from Savannah than Europe. Also with the use of its response plane, Gulfstream is really trying to help its customers. Technical services, a 24-hour help center, is really helpful and the staff are very knowledgeable."

Michael Hudgin, maintenance technician at Swagelok Flight Operations, Highland Heights, Ohio, wrote: "**Chal-**

days with engine problem." On the flip side, the manager of aircraft maintenance at a Midwest-based recreational vehicle concern wrote, "**Hawker** AOG response is excellent."

Tim McQuain of RCR Air, which operates **Raytheon** aircraft, said: "AOG good if it's during working hours. Never met a **Beech 200** tech rep in 30 years. Only seen **Hawker 700** rep once in five years of ownership. I remember the days I would get a visit from a rep about twice a year. Even once a year would be OK. The one visit I did get was about 10 minutes long. [The rep] had more people to see in as little time as possible. I also remember when the reps knew your aircraft and its brief history. Those were the days."

Per Landeck, chief pilot for Yates Petroleum, Artesia, N.M., operating the **King Air 350**, wrote of Raytheon:

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BBJ

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AOG is "absolutely fantastic. Much better than most."

The chief pilot for a Midwestern firm that has a **Learjet 25G** had this to say: "Aircraft AOG for 30 days waiting for throttle cable. When part was delivered to Learjet, they lost the paperwork."

The director of corporate aviation of a southwest-based industry wrote: "**Gulfstream** [General Dynamics Aviation Services] has done a very good job of supporting its **Westwind** stepchild. It is an improvement over IAI." But for the **Challenger 604**, "Let's say **Bombardier's** idea and my idea of the urgency of AOG are two different things."

WARRANTY FULFILLMENT

Of the **Citation Bravo**, Boyd Roberts, line captain for a Texas-based company, said: "Cessna was OK on the warranty, but every time we went in for warranty [work], they had to run the engines for its pre-work checklist and burn precious fuel. Not in for engine problems, might I add."

Ken Hall, director of operations for Ahern Rentals, operating the **Citation 501, 525 and 560XL**, wrote: "Warranty fulfillment is in perfect agreement with Cessna's contractual obligations. Factory and service center personnel are knowledgeable of those obligations and always perform as agreed. The warranty system is very well organized, and the documentation burden is minimal. Great warranty service."

On the other hand, this from a chief pilot for an upper Midwest flight department that operates a **Citation CJ2** and **XLS**: Cessna "warranty paperwork is lengthy and cumbersome."

The director of maintenance for a Midwest firm flying the **Challenger 600/604** wrote: "**Bombardier** does a poor job of informing the customer of warranty issues, and SBs are written poorly so that timelines are misunderstood."

An aviation maintenance technician for a Northeast flight department said: "We are often charged by **Bombardier** for items that should be under warranty. Each bill must be scrutinized to ensure proper billing. Months of wasted time often go into correcting billing errors."

William Howell, v-p and director of aircraft maintenance for a financial institu-



The Boeing Business Jet, a newcomer to the survey, displaced Cessna for second place.

tion, wrote: "**Bombardier** has to be forced to go back to its vendors on items that should be warranty without question. Nordam and APC are the worst suppliers."

The aircraft maintenance manager with a large Midwest company had this to say: "**Learjet** [Bombardier] is pretty fair with us. When I contest warranty coverage issues they are reasonable. I think the existing **Learjet 60** warranty is ambiguous. I would like the coverage to be five years nose to tail on everything on the airframe."

Juergen Wiese, aviation department manager for a European-based operation: "**Dassault** is excellent in fulfilling warranty requests."

Paul Birkey, manager of aircraft maintenance for a Midwest firm and a **Gulfstream V** operator, wrote: "Gulfstream has elected to charge for some Customer Bulletins if the aircraft is out of warranty. A Customer Bulletin [can] cover an important issue that wasn't manufactured correctly in the first place. Now we the customers get to pay for that."

A line captain for a **Hawker 800** operator said that warranty coverage is "poor." But chief pilot Roger Brant of Taylor Companies, Michenry, Md., also a **Hawker 800B** operator, said Raytheon warranty coverage is "superior."

The chief pilot on a **King Air 350** for a Nevada-based flight department had this to say about Raytheon: "Very flaky. We usually have to fight with Raytheon to get things covered under warranty. Sometimes it's something that may be borderline, but other times it's an obvious warranty issue and they try to slip it by us and see if we're paying attention. Not a good way to do business."

The director of maintenance for a Southeast-based company wrote: "**Raytheon** warranty is horrible to deal with. They need to get their online programs in tune with today's technology and train their people to operate them. Lately, it has been a little better, but they seem reluctant to forge ahead."

"**Citation** warranty is better, but Cessna lacks internal coordination. Why can one of their departments tell me what part and serial number I have in the aircraft, and then the next department call and fax me for verification of the same?"

TECHNICAL MANUALS

Angel Soto, director of maintenance for a large helicopter operator, had this to say about Eurocopter's tech manuals: "**AS 350** technical manuals are too complex. Need six books to do one thing."

William Howell, director of aircraft maintenance for a financial institution, said: "**Bombardier Learjet** [manuals] are the worst when it comes to being interactive."

Ken Hall, director of operations for **Citation** operator Ahern Rentals, wrote: "We have abandoned paper manuals and switched to electronic media (CD-ROM) for technical publications. The availability of technical publications on computer media reduces cost, facilitates easy mobility, and makes it very easy to search for information on a specific topic. Links to parts order forms are automatic. The electronic media technical publications from Cessna have achieved maturity. They are simple to use, very clear, complete and concise. Overall, they represent a terrific value."

Darryn Zawitz, NetJets **Citation 750** line captain, wrote that the tech manuals are "OK, I guess. Cessna seems to always be changing them, but maybe the trouble lies more with my company's slowness in disseminating the information to the flight crews rather than any real trouble with the manuals."

The director of maintenance for a West Coast concern wrote: "Cessna technical manuals (maintenance) for the **Citation S550** are too vague, not precise and definitely not corporate-jet caliber. Maybe the new aircraft have better manuals."

Jay Veronko, a police pilot based in the Northeast, had this message for **Euro-**

dures for important component changes."

James Tuck, general manager with US Steel, wrote: "Good manuals for **Hawker** and **GV-SP**. **Gulfstream G450** manuals are not complete and contain a large amount of incorrect information."

Mark Meidlein, aviation maintenance technician, said: "**GV** much better but still has mistakes. **G200** hopefully will get better as Gulfstream starts to edit them."

Director of maintenance William Howell provided this comment: "I wish GAMA [General Aviation Manufacturers Association] would get it together and force similar logbooks, technical manuals, Service Bulletins, and Service Letters across the board. No commonality. Best **Cessna**; worst **Gulfstream** and **Bombardier**."

The director of maintenance for a Southeast-based flight department said: "**Raytheon** comes up short on clarity, and sometimes necessary information is difficult to find because it is not well covered in a particular chapter. Information on a subject is usually too broadly defined and requires digging for the answer."

"**Cessna** has come a long way towards making the information easier to find, but typically it has reverted to, 'see CMM' for an unusually large amount of maintenance information. Both [companies] have problems relaying procedures at the manual level, although Raytheon is definitely worse."

TECHNICAL REPS

Survey respondents were outspoken about the quality of the OEMs' technical representatives. Ken Hall, director of operations with Ahern Rentals, wrote: "Our [**Citation 525** and **560XL**] technical reps have maintained a close relationship with our flight department. They visit our operation approximately every six months and have proved to be very knowledgeable and professional. Tech reps are available 24/7/365, and they have assisted in preventing schedule interruptions, even in remote areas."

A **Citation 560XL** pilot for Pinnacle Aviation Management in Scottsdale, Ariz., commented: "Tech reps have been slightly disappointing. Our private maintenance staff for our aircraft often know more than our regional tech reps and do not call on them on a regular basis because they know that they won't get the proper answer to their difficulty."

The chief pilot for a West Coast-based financial institution said: "**Citation X** team doesn't seem to have the depth of experience to respond quickly to questions. It needs to keep better database info for reference. With

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Raytheon's King Air line maintained its No. 3 position among newer and older turboprops combined.

copter: "Please write tech manuals in English; do not [just] translate from French."

Gary Matthees, chief of maintenance for a Midwest operator of the **Falcon 900**, commented: "Maintenance using the field CD-ROM method is much quicker than using a manual. Dassault needs to get in the service centers and double-check the accuracy of maintenance contents and procedures, and in many cases create proce-



2006 AIN Product Support Survey

Camera Drawing Winners

As we did with our FBO Survey earlier this year, we offered to enter qualified AIN readers who participated in the 2006 AIN Product Support Survey into a drawing for three Canon SD400 five-megapixel digital cameras. Shown here are the winners of the cameras, selected in a random drawing of the 1,619 readers who completed and returned survey questionnaires (via the dedicated Web site, mail or fax) to Forecast International. Jim Brightbill, chief pilot, Citation II, for Daystar Television Network (left) and Kenneth Fallon, lead mechanic/avionics specialist, CL604, for a Fortune 500 company in the Southeast, were among the winners. Joe Nichols, maintenance supervisor, CL604, for TAG Aviation USA, won the third camera.



enough referrals to other shop folks, an answer can usually be found."

The line captain for a food giant had this to say: "Just heard from a Cessna rep first time in five years. Gulfstream rep is great—he visits regularly."

The director of maintenance for a South-east-based corporation wrote: "Citation factory tech reps are pretty good but disconnected from the field. It seems they get trend information much later than the field reps. Raytheon tech support is slightly better. Neither is capable of 24/7, as advertised. Sometimes you get one that specializes in avionics answering the phone after hours when you need an airframe person."

Russ Erickson, chief pilot for a West Coast Beech Premier 1 operation, commented: "The tech reps have been the best. They call me to check on the aircraft periodically."

Craig Kinmon, director of maintenance for a Midwest firm that operates the Westwind Astra, wrote: "Gulfstream is the best. They go way over the top to find a solution to your problem." But Daniel Carrigan, owner-operator of Danair, had this to say: "I think Gulfstream has orphaned the Westwind."

Aircraft manager for a Midwest company: "Gulfstream tech rep Mark Solomon does an outstanding job."

An aviation manager for international charter/management firm TAG Aviation: "Disappointed [with Bombardier]. We had a problem in Japan recently and tech rep was contacted. However, he had a trip out of the country in a couple of days and wouldn't be able to help us. He didn't offer any alternatives for assistance. This didn't sit well with us or our owner, as he is ordering a new Global XRS. [We are] now wondering whether an airplane called

'Global' can actually make it around the globe if manufacturer reps can't assist us."

Patrick Dye, pilot/manager for a Western-based Challenger 300 operator, commented: "John Stoller is the best field service rep I have ever met. He sets a new standard for all others."

Roger Lipcamon, director of operations for an upper Midwest company that operates a Learjet, said that his field service rep is the "best I've seen in more than 20 years of flying."

The manager of flight operations for a Learjet 60 operator commented: "We have some very good and knowledgeable reps to help us. For example, Bob Newhouse." But an aircraft maintenance manager with the same company said: "Mostly helpful, but it's frustrating to me that they [tech reps] don't have a lot of documented history regarding operational problems with the Learjet 60."

"You call the help desk and it says, 'Never heard of that one before.' We can't be the only operator having these problems. There has to be a better way to collect information and have it available to the operators."

Captain of a Falcon operation based in New England: "Dassault tech rep B. Curtis [provides] outstanding support."

The director of maintenance for a Midwest company said: "Dassault Falcon Jet field service is quite simply top-notch. A direct reflection of all of the hard work John Loh has put into the Dassault field service organization." [John Loh, previously manager of field service, in May was named director of technical support for Dassault Falcon Jet.—Ed.]

An aircraft technician for a Midwest-based Falcon operator wrote: "Charles Boler goes out of his way to offer as much assistance as needed to fix the problem."

Chief pilot Ephraim Ingals of a West Coast company: "Eurocopter reps are marginally more available than Turbomeca reps."

OVERALL RELIABILITY

The director of maintenance for a Canadian company had this to say about the overall reliability of the aircraft he operates: "All the types [we operate] work well, even the Global Express airframe. But the GEX interior is always breaking. We spend 75 percent of our working and repair time on interior squawks."

C. Dauber, Challenger 601-3A captain for a Southeast operation: "Outstanding [reliability]. In more than 17 years with this airplane we have experienced about six delayed or canceled flights, none of them while on the road."

Darryn Zawitz, a NetJets Citation X line captain, wrote: "Obviously you folks don't have a lot of experience with the Citation X. Otherwise you'd have backup tickets booked on the airlines for every flight." He did not elaborate. However, the chief pilot for a financial institution that operates a Citation X said the airplane's overall reliability is

"very good. Have missed only about four flights in four years for maintenance. A few more were delayed but completed."

Paul Hansrote, a Citation Encore captain at an international charter/management operation, wrote: "We have experienced a large number of scrubbed trips for a new aircraft. Teething problems lasted well beyond the first 300 hours and first year of operation. Problem areas were seen in all the major systems. Quality was clearly not what it should be."

The maintenance supervisor for a multinational charter/management company commented: "Falcon 20F-5 is reliable when it flies a lot, but has 'issues' intermittently when it sits. Getting concerned about having aircraft grounded for extended periods due to parts availability." Capt. Jeb Fetters, who flies the Falcon 20 for USA Jet Airlines, said: "Reliability would be much better if there were parts available."

Representative for a large charter/management firm commented: "Falcon 900B dispatch reliability above 99 percent. Falcon 900EX dispatch reliability below 95 percent."

A Canadian company that operates Falcons wrote: "[Our] Falcon 900B has been bulletproof with excellent reliability. [Our] Falcon 900EX has been mostly reliable but has experienced two nicad battery failures, engine carbon seal problems, including an engine failure related to seal problems."

"The Honeywell electronics seem to still have bugs. The aircraft cabin temp control is unreliable and the cockpit temp control must sometimes be run in manual. We have experienced false aft compartment fire warnings. Dispatch reliability year to date is 92 percent. Our current and previous 900B models were always 99 percent or better."

The pilot for a North-east aircraft operation commented: "Dispatch reliability for the Gulfstream IV has been 99.7 percent." The president and CEO of an aviation services company noted: "GIV-SP and GIV dispatch reliability over several companies operating these aircraft is excellent—99-plus percent."

The aviation manager for a West Coast-based corporation said: "Gulfstream G200 reliability completely unacceptable. S/N 37 problems with Gulfstream originate from 'walnut row.' The maintenance folks are quite good."

Large charter/management operation: "Global Express overall has been pretty reliable. Success of aircraft is largely due to our maintenance supervisor's extensive knowledge of the aircraft. Would hate to rely solely on manufacturer for timely assistance and knowledge."

A West Coast-based charter/management company had this to say about the

aircraft in its fleet: "Global Express is getting better. I hear the later serial number aircraft are great. Falcons are very reliable. The 900 seems to have more small maintenance issues than the 2000. The 200 doesn't break that often."

A Hawker 1000 pilot for a Midwest flight department commented: "Fortunately it's a Hawker and is built like a tank. Unfortunately when it breaks it's hard to get fixed."

The chief pilot for a Western company that operates a King Air 350 wrote that the overall reliability is "not good. Our airplane is only 18 months old and we've had seven fuel indicator failures, numerous avionics issues and approximately 400 to 500 leaking rivets that caused our paint to 'pop off' at that many separate rivet locations. We love the safety and the capability of the King Air 350, but Raytheon has some very serious quality-control issues that need to be addressed immediately."

The senior pilot for a Midwest firm noted: "King Air has had a 99.9-percent dispatch rate, with nothing major keeping us from taking a flight. Citation has kept us home only two or three times for malfunctions over a four-year period."

A chief pilot who flies a Learjet 25G said: "Fortunately the Learjet is as reliable as Bombardier/Learjet [support] is unreliable."

The aircraft maintenance manager for a large Midwest company commented: "We have operated two Learjet 60s for close to five years. The aircraft reliability has been very disappointing and frustrating at times. The basic design of the aircraft creates situations that make maintenance difficult and time consuming. When you couple the



Factory support for Bombardier's Global Express scored higher than for the company's other models.



aircraft design with poor component reliability, extensive Chapter 5 requirements, and lengthy MM return-to-service procedures, the aircraft can become an unattractive proposition at times." □

Part 2 of the 2006 AIN Product Support Survey will cover turbine engines and appear in next month's issue. Part 3 will cover avionics and appear in the October issue.