Gulfstream again claims the highest overall rating for jets, while Pilatus leads in the newer-turboprop category and Bell takes the top spot among helicopters.

by Matt Thurber

Aircraft manufacturers last year were struggling to build their service centers and capabilities to help a growing number of operators worldwide keep their aircraft flying safely and efficiently. Order backlogs were at record highs and manufacturing and product support resources were stretching thin.

Everything has changed since then, and now manufacturers are struggling to balance declining backlogs with shrinking workloads in their service centers while continuing to support their extensive fleets. This year both Gulfstream and Cessna closed factory-owned service centers (in Minneapolis and Toledo, respectively) and Hawker Beechcraft and Cessna each relocated facilities, consolidating former California bases in business-friendly Mesa, Ariz. Whereas maintenance shops used to be booked months in advance, now operators can easily get multiple competitive bids with much shorter notice.

Once again, in the newer business jets (10 years or younger), older jets and the combined category, Gulfstream Aerospace's overall average in the 2009 AIN Product Support Survey topped the charts. Readers rated Gulfstream’s overall averages for newer jet product support at 8.26, older jets at 7.77 and newer and older jets combined at 8.04. (This year, Embraer's Legacy support moved up to third place for newer jets this year at 7.80, nearly catching up to second-place Cessna with a jump from last year's 7.47. Bombardier’s newer-Challenger support made a substantial jump this year into fourth place with an overall average of 7.56, up from last year's seventh place and 7.07. This pushes Dassault Falcon into fifth place at 7.52, slightly down from last year's 7.64. Hawker Beechcraft’s Premier and 400 (née Beechjet) take sixth place with a ranking of 7.40, up from last year’s 7.36, followed closely by Bombardier’s Learjet series, making a significant jump to 7.39, up from last year’s 6.93. Hawker Beechcraft’s midsize Hawker series is next at 7.29, up by a positive 0.20 from last year. Embraer’s Legacy support continues to improve, climbing a substantial 0.39 to 7.22 this year. Bombardier’s Global line also climbed to 6.73 from last year’s 6.56. In the new-turboprop category, Pilatus and its single-engine PC-12 once again led the field, with a ranking of 7.72, up from last year’s 7.37. Hawker Beechcraft’s King Air series climbed to 7.41 from 7.23. The helicopter results show Bell Helicopter at the top of the list with a rating of 6.97, up slightly from last year. Sikorsky moved into second place this year with 6.88, jumping substantially from last year’s third-place 6.45. AugustaWestland came in a close third with 6.85, also a clear increase from last year’s 6.13. Companies that were not included in the chart this year due to insufficient responses were Airbus, Embraer, Embraer (Phenom 100), Piaggio and Socata.

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 Ratings of Newer and Older Aircraft Combined

#### (in order of 2009 ratings)

<table>
<thead>
<tr>
<th>JETS</th>
<th>Overall Average 2009</th>
<th>Overall Average 2008</th>
<th>Rating Change from '08 to '09</th>
<th>Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulfstream (Astra through G550)</td>
<td>8.84</td>
<td>N/A*</td>
<td>N/A*</td>
<td>N/A*</td>
</tr>
<tr>
<td>Boeing (BBJ)</td>
<td>7.80</td>
<td>7.47</td>
<td>0.33</td>
<td>4.47%</td>
</tr>
<tr>
<td>Cessna (Citation)</td>
<td>7.65</td>
<td>7.64</td>
<td>0.01</td>
<td>0.17%</td>
</tr>
<tr>
<td>Dassault (Falcon)</td>
<td>7.38</td>
<td>7.43</td>
<td>-0.05</td>
<td>-0.69%</td>
</tr>
<tr>
<td>Sabreliner</td>
<td>7.27</td>
<td>7.62</td>
<td>-0.35</td>
<td>-4.56%</td>
</tr>
<tr>
<td>Bombardier (Learjet)</td>
<td>7.26</td>
<td>6.81</td>
<td>0.45</td>
<td>6.66%</td>
</tr>
<tr>
<td>Embraer (Legacy 600)</td>
<td>7.22</td>
<td>6.82</td>
<td>0.40</td>
<td>5.80%</td>
</tr>
<tr>
<td>Hawker Beechcraft (Hawker)</td>
<td>7.19</td>
<td>7.01</td>
<td>0.18</td>
<td>2.58%</td>
</tr>
<tr>
<td>Bombardier (Challenger)</td>
<td>7.16</td>
<td>6.97</td>
<td>0.19</td>
<td>2.75%</td>
</tr>
<tr>
<td>Hawker Beechcraft (Premier I, Diamond, Beechjet 400A, Hawker 4000P)</td>
<td>7.04</td>
<td>7.26</td>
<td>-0.22</td>
<td>-3.09%</td>
</tr>
<tr>
<td>Bombardier (Global Express/XRS, Global 5000)</td>
<td>6.73</td>
<td>6.56</td>
<td>0.17</td>
<td>2.62%</td>
</tr>
</tbody>
</table>

#### TURBOPROPS

<table>
<thead>
<tr>
<th>Company</th>
<th>Overall Average 2009</th>
<th>Overall Average 2008</th>
<th>Rating Change</th>
<th>Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitsubishi (Marquise, MU-2, Solitaire)</td>
<td>8.81</td>
<td>9.17</td>
<td>-0.36</td>
<td>-3.92%</td>
</tr>
<tr>
<td>Pilatus (PC-12)</td>
<td>7.70</td>
<td>7.56</td>
<td>0.14</td>
<td>1.88%</td>
</tr>
<tr>
<td>Hawker Beechcraft (King Air)</td>
<td>7.14</td>
<td>7.16</td>
<td>-0.02</td>
<td>-0.33%</td>
</tr>
<tr>
<td>Piper (Cherokee)</td>
<td>5.71</td>
<td>5.96</td>
<td>-0.25</td>
<td>-4.21%</td>
</tr>
</tbody>
</table>

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

*Bold indicates highest number in each category.*

*Last year’s ratings for Gulfstream are not included due to changes made to more accurately reflect the way Gulfstream now supports newer and older aircraft in its fleet. As a matter of record, Gulfstream’s support of both newer and older jets was rated at the top of the list in 2008.

Continues on page 20 ▶
AIC’s 2009 Product Support Survey offered 14,948 subscribers the opportunity to rate on a scale of 1 to 10 the service and support they receive from manufacturer support operations and factory-author- ized independent service centers. This was up from 13,552 invitations sent out last year. Readers were asked to rate their aircraft, engines, and avionics in up to 10 categories; one new category (see below) was added for this year’s survey. On the one-to-10 rating scale, one is considered inadequate and 10 is excellent. To be listed in the results, a manufacturer had to garner at least 28 ratings; some aircraft types/manufacturers, such as Lockheed’s JetStar, no longer have enough aircraft flying to generate sufficient responses to make the survey statistically useful. The aircraft results are published in this issue, while the avionics report will be featured in September and the engines report in October. The Product Support Survey was conceived by AIN editors and developed and administered by aerospace research firm Forecast International of Newtown, Conn.

The following are the 10 ratings categories, including explanations of the key points that survey participants were asked to consider when submitting their opinions. Note that new this year is the “Maintenance Tracking Programs” category. This was added as a result of feedback from last year’s survey and in recognition of the increasing importance of tracking programs for preservation of aircraft value and in keeping maintenance requirements up to date.

- Authorized Service Centers—cost estimates versus actual, on-time performance, scheduling ease, service experience.
- Factory 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.
- Overall Product Reliability—how the product’s overall reliability and quality stack up against the competition.

Of the 14,948 subscribers invited to participate this year, 1,832 submitted information online; we did not offer paper ballots this year as only 29 paper ballots were returned last year. This is the fourth year that AIC and Forecast International have administered the Product Support Survey electronically, with participants inputting ratings via a Forecast International Web site. The return rate for the 2009 Product Support Survey was 12 percent, up from 10.28 percent last year. The number of ratings for the aircraft segment climbed to 3,767 in 2009 from 3,029 in 2008. We added four days to the survey period this year to ensure that all who wanted to participate had plenty of time to fill out the online survey.

While we did receive some comments critical of the multiple invitations that we sent via e-mail, postcard and magazine and online advertisements, we do wish to thank all those who participated. AIC could not conduct this important survey without your help. We believe the multiple contacts were necessary to make sure all invitees had every opportunity to participate and we hope the invitations were not too intrusive.

AIC welcomes participant input about the survey process and how it can be improved. Comments on the survey process this year included kudos and critiques. “Quick and easy; I hope the results are useful to operators,” wrote one pilot. A director of maintenance wrote: “It was easy to navigate and not very time consuming.” An aviation manager expressed this sentiment, no doubt reflective of the increased workload everyone is enduring during the recession.

“Survey is OK, but as a manager I receive too many and can’t take time to participate in all of them.”

Surprisingly, an aircraft owner who shared some pertinent and important safety-related information about his experiences with product support thought the survey was a “waste of time.” Hopefully he realizes surveys like this help disseminate important safety information and that manufacturers do pay attention to this kind of input. Or as one survey respondent put it, “This, as with all surveys, is a great way of providing feedback and gaining an insight into customer satisfaction. It is beneficial to both the customer and the service provider.” —M.T.

### 2009 RATINGS

<table>
<thead>
<tr>
<th>Aircraft</th>
<th>Overall Average 2008</th>
<th>Overall Average 2009</th>
<th>Rating Change from ’08 to ’09</th>
<th>% Change</th>
<th>Overall Aircraft Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulfstream (G100 through G200, GV-SP through G550)</td>
<td>8.26 N/A*</td>
<td>8.49 N/A</td>
<td>-0.23</td>
<td>-2.8%</td>
<td>8.50/8.86</td>
</tr>
<tr>
<td>Cessna ( Citation )</td>
<td>7.81 7.88</td>
<td>8.07 8.09</td>
<td>0.26</td>
<td>3.3%</td>
<td>8.49/8.49</td>
</tr>
<tr>
<td>Boeing (BBJ)</td>
<td>7.80 7.47</td>
<td>7.50 7.20</td>
<td>-0.30</td>
<td>-4.0%</td>
<td>8.21/8.68</td>
</tr>
<tr>
<td>Bombardier (Challenger)</td>
<td>7.56 7.07</td>
<td>7.46 7.16</td>
<td>-0.11</td>
<td>-1.5%</td>
<td>8.05/8.33</td>
</tr>
<tr>
<td>Dassault ( Falcon )</td>
<td>7.52 7.64</td>
<td>7.31 7.80</td>
<td>-0.61</td>
<td>-8.0%</td>
<td>7.84/8.47</td>
</tr>
<tr>
<td>Hawker Beechcraft (Premier I, Diamond, Beechjet 400A, Hawker 400XP)</td>
<td>7.40 7.36</td>
<td>7.17 7.43</td>
<td>-0.34</td>
<td>-4.5%</td>
<td>7.84/8.33</td>
</tr>
<tr>
<td>Bombardier (Learjet)</td>
<td>7.39 6.93</td>
<td>7.25 6.95</td>
<td>-0.08</td>
<td>-1.2%</td>
<td>8.05/8.33</td>
</tr>
<tr>
<td>Hawker Beechcraft (Hawker)</td>
<td>7.29 7.09</td>
<td>7.28 7.16</td>
<td>-0.04</td>
<td>-1.2%</td>
<td>8.21/8.68</td>
</tr>
<tr>
<td>Embraer (Legacy 600)</td>
<td>7.22 6.82</td>
<td>7.49 7.02</td>
<td>-0.70</td>
<td>-9.7%</td>
<td>8.33/9.00</td>
</tr>
<tr>
<td>Bombardier (Global Express/XRS, Global 5000)</td>
<td>6.73 6.56</td>
<td>6.67 6.40</td>
<td>-0.17</td>
<td>-2.6%</td>
<td>7.52/8.15</td>
</tr>
</tbody>
</table>

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<tr>
<th>Aircraft</th>
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<th>% Change</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Gulfstream (Astra, G100, G110, BIV, GIV, GIV-SP, GV)</td>
<td>7.77 N/A</td>
<td>7.79 N/A</td>
<td>-0.02</td>
<td>-0.2%</td>
<td>8.00/8.75</td>
</tr>
<tr>
<td>Cessna ( Citation )</td>
<td>7.39 7.26</td>
<td>7.22 7.32</td>
<td>-0.06</td>
<td>-0.8%</td>
<td>8.00/8.75</td>
</tr>
<tr>
<td>Sabreliner</td>
<td>7.27 7.62</td>
<td>7.39 7.93</td>
<td>0.62</td>
<td>8.0%</td>
<td>8.21/8.68</td>
</tr>
<tr>
<td>Dassault ( Falcon )</td>
<td>7.21 7.13</td>
<td>7.42 7.65</td>
<td>0.31</td>
<td>4.5%</td>
<td>8.21/8.68</td>
</tr>
<tr>
<td>Bombardier (Learjet)</td>
<td>7.11 6.61</td>
<td>7.32 6.92</td>
<td>0.63</td>
<td>9.8%</td>
<td>8.21/8.68</td>
</tr>
<tr>
<td>Hawker Beechcraft (Hawker)</td>
<td>7.03 6.80</td>
<td>7.27 6.79</td>
<td>0.44</td>
<td>6.4%</td>
<td>8.00/8.75</td>
</tr>
<tr>
<td>Bombardier (Premier I, Diamond, Beechjet 400A, Hawker 400XP)</td>
<td>8.74 8.65</td>
<td>8.56 8.79</td>
<td>0.10</td>
<td>1.2%</td>
<td>8.00/8.75</td>
</tr>
<tr>
<td>Bombardier (Challenger)</td>
<td>6.66 6.85</td>
<td>7.00 7.23</td>
<td>0.15</td>
<td>2.2%</td>
<td>8.33/9.69</td>
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</tr>
</thead>
<tbody>
<tr>
<td>Pilatus (PC-12)</td>
<td>7.72 7.37</td>
<td>7.73 7.53</td>
<td>0.06</td>
<td>0.8%</td>
<td>8.96/9.69</td>
</tr>
<tr>
<td>Hawker Beechcraft (King Air)</td>
<td>7.41 7.23</td>
<td>7.42 7.32</td>
<td>0.01</td>
<td>0.1%</td>
<td>8.33/9.69</td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>Mitsubishi (Marquise, MU-2, Solitaire)</td>
<td>8.81 9.17</td>
<td>8.83 9.05</td>
<td>0.01</td>
<td>0.2%</td>
<td>9.32/9.69</td>
</tr>
<tr>
<td>Hawker Beechcraft (King Air)</td>
<td>7.06 7.14</td>
<td>7.06 7.14</td>
<td>0.00</td>
<td>0.0%</td>
<td>8.21/8.68</td>
</tr>
<tr>
<td>Piper Cheyenne</td>
<td>5.71 5.96</td>
<td>5.67 5.96</td>
<td>0.14</td>
<td>2.4%</td>
<td>8.21/8.68</td>
</tr>
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<thead>
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<th>% Change</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bell</td>
<td>6.97 6.94</td>
<td>6.97 6.94</td>
<td>0.00</td>
<td>0.0%</td>
<td>7.52/8.15</td>
</tr>
<tr>
<td>Sikorsky</td>
<td>6.88 6.45</td>
<td>6.87 6.41</td>
<td>0.18</td>
<td>2.8%</td>
<td>7.52/8.15</td>
</tr>
<tr>
<td>AgustaWestland</td>
<td>6.85 6.13</td>
<td>6.84 6.46</td>
<td>0.47</td>
<td>7.1%</td>
<td>7.52/8.15</td>
</tr>
<tr>
<td>Eurocopter</td>
<td>6.50 5.86</td>
<td>6.49 5.86</td>
<td>0.01</td>
<td>0.2%</td>
<td>8.21/8.68</td>
</tr>
<tr>
<td>MD</td>
<td>6.29 6.78</td>
<td>6.32 6.84</td>
<td>0.03</td>
<td>0.5%</td>
<td>8.21/8.68</td>
</tr>
</tbody>
</table>

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.
Authorized Service Centers

Gulfstream’s ranking in this category was one of its lowest, possibly reflecting the company’s long-standing policy of not granting service center authorization to independent companies in the U.S. Although Gulfstream parent General Dynamics owns both Jet Aviation (including Midcoast Aviation) and Savannah Air Center, those facilities are not official Gulfstream-authorized service centers. Boeing’s ranking jumped more than half a point to 7.59, putting the company into second place in this category, a fairly significant move and pushing Cessna down to third at 7.50.

For newer turboprops, Pilatus and Hawker Beechcraft were ranked fairly closely at 7.73 and 7.64, respectively. In the older turboprops category, Mitsubishi MU-2 owners expressed their fanatical loyalty with a high ranking for authorized service centers of 6.83. Bell Helicopter outpaced its competitors in this category with a rating of 7.28, well above the next highest ranking for Sikorsky at 6.76.

Factory Service Centers

Gulfstream operators, despite some complaints to the contrary, clearly are happy with the service they receive from the company’s factory service centers, ranking the manufacturer’s service for newer jets at 8.15. In the older jets category, Sabreliner owners signaled their satisfaction, placing the company in first place with a ranking of 7.93, moving Gulfstream to the number-two position for older factory service centers, followed by Cessna. Embraer’s ranking this year climbed to 6.92 from 6.59 last year, possibly reflecting an increase in service center capability, especially with the new Mesa, Ariz. factory-owned service center. As more Phenom 100s enter service this year, Embraer should get more opportunities for customers to rate its services.

Pilatus also took the lead in factory service centers for newer turboprops, while Mitsubishi’s factory service centers ranked even higher than the authorized service center scoring a high 9.05.

Bell Helicopter also ranked highest for helicopter manufacturers in this category, perhaps reflecting the company’s purchase of a variety of aftermarket service businesses in recent years. Sikorsky has also added a number of formerly independent companies to its factory-owned system and it ranked third in this category for helicopter manufacturers, at 6.41, behind AgustaWestland’s 6.94.

Parts Availability

Availability of parts is a Gulfstream and Cessna strength for newer jets, according to the rankings, and Dassault Falcon ranked relatively high in this category in third place. Supporting the parts needs of older jets is far more challenging, however, and the rankings showed Cessna in the lead, followed by Gulfstream and Dassault Falcon. Rankings were relatively high for turboprop manufacturers, with Mitsubishi’s ongoing support for the long-out-of-production MU-2 recognized with a strong rating of 8.86.

Helicopter rankings in this category were uniformly low, with Bell the highest at 6.44.

Cost of Parts

Cost of parts remains a perennial favorite complaint of aircraft operators worldwide, and there is a clear disparity between this category for newer and older aircraft. Manufacturers are keenly aware of this issue and most have enacted programs to keep parts prices down, and the results seem to show that these efforts are paying off with newer aircraft fleets. Parts costs seem to be a significant issue for Bombardier Global and Challenger operators.

Turboprop operators express low opinions of the cost of parts, although MU-2 operators seem somewhat satisfied, ranking Mitsubishi at a relatively high 7.80.

AgustaWestland took the list for helicopter manufacturers, although its ranking of 6.13 was not much higher than those for the rest of the companies, except for Eurocopter with its 5.08.

AOG Response

Operators are passionate about their aircraft-on-ground (AOG) experiences, and the many comments on this subject ranged from high praise to severe criticism. Gulfstream’s AOG efforts were recognized with a strong rating for newer aircraft of 8.69. Dassault Falcon has strengthened its support network during the past year and its third-place ranking for AOG response may reflect these efforts. The other manufacturers enjoyed decently high rankings, indicating how seriously they all take AOGs. In the older aircraft AOG response category, Gulfstream again tops the rankings followed by a near tie for second-place Cessna and third-place Dassault Falcon.

Pilatus again bested Hawker Beechcraft in AOG response for newer turboprops, while Mitsubishi topped the rankings for older turboprops at a high 9.07.

The helicopter manufacturers are ranked more closely together in this category, but Sikorsky is the leader this time at 6.87, followed by MD Helicopters, which has seen a significant turnaround under new ownership in the past few years, then Bell.

Continues on page 22

What Have You Done for Me Lately?

In preparing for the annual Product Support Survey, AIN asks aircraft manufacturers to summarize improvements to their product support programs during the past year. Not all manufacturers respond, however, and this year the following companies did not provide any new information: AgustaWestland, Boeing, Eurocopter, Piper, Sikorsky and Socata.

Airbus Corporate Jets

• Tailored support package: now offering flight-by-the-hour maintenance solutions, ranging from simple component support to heavy maintenance and technical fleet management.
• Added dedicated customer support.
• Created a new team whose role is to interface between customers and outfitter after-sales departments to ensure high-quality technical and spares support for the VIP cabin.

Bell Helicopter

• Conducted customer survey to establish the next generation of parts plan and service offerings for the 429 and existing customers.
• Decreased customer turnaround time at blade repair facility Rotor Blades by implementing Six Sigma lean processes.
• Expanded facilities at Edwards & Associates.

Bombardier

• Launched Bombardier PartsExpress in Europe, augmenting the PartsExpress service already in place in North America that leverages a fleet of aircraft for parts deliveries.
• Introduced mobile repair and response teams at all Bombardier service centers in North America and at Bombardier Belfast to serve customers in Europe.
• Increased network of authorized service and line maintenance facilities to 43 in 21 countries.

Cessna Aircraft

• Opened a new Cessna Citation service center in Mesa, Ariz. The service center replaces the former Long Beach center and is much larger, with room for future growth.
• Cessna will build its new European Citation service center at Valencia Airport in Spain.
• Continued to expand mobile service units. Citation service centers have deployed more of the specially outfitted trucks to other areas, including Arizona, Southern California and Northern Carolina, with more set to roll soon.

Dassault Falcon Jet

• Opened new factory-owned service centers in Reno, Nev., and São Paulo, Brazil.
• Permanently reduced the price on more than 22,000 Falcon spares.
• Launched Falcon E-Forum online series to provide an exchange of information and best practices with Falcon operators.

Embraer

• Expanded the worldwide service network to 37 by adding new wholly owned and authorized service facilities in more regions.
• Launched FlyEmbraer, a new customer relationship at the service centers.
• Tailored support package: now offering flight-by-the-hour maintenance and technical fleet management.
• Permanently reduced the price on more than 20,000 parts, resulting in faster claim processing.
• Expanded the distribution centers and added mission-critical item inventory at the service centers.

What Have You Done for Me Lately?

In preparing for the annual Product Support Survey, AIN asks aircraft manufacturers to summarize improvements to their product support programs during the past year. Not all manufacturers respond, however, and this year the following companies did not provide any new information: AgustaWestland, Boeing, Eurocopter, Piper, Sikorsky and Socata.
Warranty Fulfillment

Gulfstream shines in the newer jet warranty area, according to survey respondents, at 8.49, followed by second-place Hawker Beechcraft Premier through 400-series jets at 8.03, then Cessna in third place. Operators of Gulfstream’s older jets also ranked the company high for warranty fulfillment, but with a 7.40 rating. Dassault Falcon came a close second at 7.39, followed by Sabreliner at 7.32.

At 7.62, Hawker Beechcraft’s King Air series ranked number one for newer turboprops, bettering Pilatus’ 7.54. For older turboprops, Mitsubishi again takes the lead at 8.77.

AgustaWestland is the clear leader among the helicopter manufacturers at 7.35, followed by Bell (7.14) then Eurocopter (6.96).

Technical Manuals

Boeing edged out Gulfstream’s 8.15 in this category with a first-place ranking of 8.17, followed in third place by Hawker Beechcraft’s Premier through 400 series in the newer jets category. For older jets, Gulfstream took the lead at 7.97, followed by Cessna then Bombardier Learjet.

Pilatus and Mitsubishi outranked their competitors in the newer and older turboprop arenas.

Helicopter operators ranked Bell at the top for technical manuals, followed by AgustaWestland then Sikorsky.

Technical Reps

Gulfstream took the top ranking for both newer and older jet technical representatives, scoring 8.30 and 8.43, respectively. Bombardier’s newer Challengers and Learjets tied for number two for the newer jets, followed by Boeing Business Jets. Hawker Beechcraft’s Hawker series tech reps helped the company score a second-place ranking for older jets, while Cessna and Dassault Falcon tied for third place.

Pilatus operators rated their tech reps the highest, while Mitsubishi stood more than a point-and-a-half above its nearest competitor, the older King Airs.

Eurocopter again showed well against its competitors, placing second in the tech reps category at 7.70 to Bell’s first-place 7.95. Sikorsky came in third at 7.44.

Maintenance Tracking Programs

This category is new this year, in recognition of the importance of aircraft records for preserving asset value and ensuring regulatory compliance. With Cessna having sold its Crescent tracking program to Camp Systems, the trend is for manufacturers to leave the development and support of maintenance-tracking programs to third-party companies such as Camp, Avtrak and others.

Most new aircraft include a temporary subscription to whatever system the manufacturer promotes, but operators eventually settle on whatever they like best, and these rankings reflect their opinions of the maintenance-tracking programs themselves, not the aircraft manufacturer.

Gulfstream, whose CMP.net runs on Avtrak’s system, ranked first, followed by Cessna, which developed Crescom internally then sold that system to Camp Systems. In third place is Bombardier’s Challenger program; Camp also supports most Bombardier aircraft, having signed an agreement with the manufacturer in 2004.

Many operators of older jets stick with whatever maintenance-tracking system their aircraft used when they bought the jet, so the rankings probably reflect the same system providers. Gulfstream operators are happy with their service, ranking it at 8.61, followed by 7.70 for Sabreliner and 7.61 for Cessna.

Among the turboprops, Pilatus came out on top for the newer aircraft and Mitsubishi ranked highest for older aircraft.

Bell, ranked second in this category, bucked the trend and bought maintenance-tracking provider SkyBooks and provides a free two-year subscription with every new helicopter. Sikorsky ranked first and AgustaWestland third.

Overall Aircraft Reliability

The reliability category represents one of the most important criteria for aircraft operators, and respondents gave Boeing Business Jets the nod with a ranking of 9.08 for newer jets, followed by Gulfstream at 8.86, then Embraer with 8.84. In the older jets category, Gulfstream took the lead at 8.75. Dassault Falcon placed second with 8.39, followed by Cessna at 8.28.

Pilatus ranked number one for overall aircraft reliability for newer turboprops at 8.96, but Hawker Beechcraft’s King Airs were not far behind at 8.58. Mitsubishi topped the older turboprop rankings with a rating of 9.32, followed by older King Airs at 8.24 and Piper Cheyennes at 6.90.

In the helicopter section, Eurocopter led the pack with an 8.14, outpacing second-place AgustaWestland at 7.69 and Bell with 7.65.

Sennheiser Headset Winners

In appreciation of readers’ participation in the annual AIN Product Support Survey, we hold a random drawing and award a prize to three survey respondents. This year, the prize is a Sennheiser noise-canceling headset. Winners of Sennheiser headset rewards for 2009 are Joe Delaney, a pilot for Executive Jet Management in Henderson, Nev.; Juan Sierra, a captain for Jet Logistics in Whitsett, N.C.; and Paul Kennedy, director of maintenance for J.J. Gumbert Co. in Pittsburgh.

In Their Own Words starts on page 24
Authorized Service Centers

An AgustaWestland operator likes the service at Motorflug Baden Airpark in Germany. Another complained that the authorized service center is “Very willing but not able to effectively deal with Agusta.”

“Century Helicopters does good, on-time work,” said Tom Dey, captain at Bell Helicopter operator Med-Trans. While one operator said that there is not enough competition among Bell-authorized service centers, another likes the Bell system. “Having service centers that, in a customer’s eyes, appear to be an extension of Bell. This is the way to support a product!”

Boeing BBJ operators were lavish in their praise of Associated Air Center in Dallas. “They have done work on our Boeings for years and have always been great to us,” said one operator. A number of Bombardier Challenger operators complained that there are not enough authorized service facilities.

Two Challenger 601 operators praised the service they are getting from Gulfstream-owned service facilities in Appleton, Wis., and Dallas. “Midcoast Aviation does a great job,” wrote another operator, and this facility is now Gulfstream-owned as well.

A Global 5000 operator finds service better at authorized facilities. “These service centers seem better at troubleshooting than the factory centers.” Joe McCoy, chief of maintenance for Global Express operator Acme Operating, wrote, “Midcoast-Cahokia performed my A4 and 4C. Everything went terrific.”

Learjet 31A captain Hector Rios gave a “job well done” to Averitt Air of Nashville, Tenn.

Semitool director of maintenance Reed Lamb found for a Europe-based Cessna Citation CJ1 that, “Marshall [Aviation Services] has been hit-and-miss on performance; CSE was excellent, jobs done on time and reasonable cost.” “Very good response in TAM Cessna service center Brazil,” wrote a 560 operator.

While a Bravo operator had problems with West Star’s Alton, Ill. facility, an Encore operator was impressed. “We had interior redone and added new avionics,” said the Bravo operator. “Prices were very high, warranty service was quite poor, quality of installlation very unsatisfactory.” The Encore operator wrote, “West Star Alton provided excellent service at very competitive price.”

For Conquest II turboprop service, West Star Aviation and Jet Aviation’s Basel, Switzerland facilities earned kudos from operators.

Duncan Aviation received compliments for service on both older and newer Falcon jets. Falcon 2000 operators cited “excellent service from Western Aircraft, Boise, Idaho,” and “positive experience to date” at West Star’s Alton, Ill. base. “Service is excellent” at Jet Aviation in Basel, said another Falcon 2000 operator, while a 900EX operator complained that “Jet Aviation Basel–struggling with expansion–interior refurbishment extremely poor–maintenance OK but slow and expensive.”

Jorge Lara, flight operations director for Falcon 50 operator Endeavor, noted, “Most of the authorized service centers perform great jobs on Falcon aircraft...they work better than Dassault factory-owned centers and are always more customer-oriented.”

Embraer Legacy 600 operators complimented Constant Aviation in Cleveland: “Customer service does a very good job.” Other Legacy 600 operators were not so happy: “Most authorized centers were unable to troubleshoot items that had plagued the aircraft for a long time.”

In the U.S., Gulfstream operators don’t have many choices for authorized service centers besides Pentastar Aviation in Michigan, which received many positive comments. Outside the U.S., Jet Aviation facilities [especially the company’s Basel, Switzerland facility] received high marks from Gulfstream operators.

Todd Fox, a pilot for Beechjet 400A operator Carecore National, wrote, “Good people, good work. Stevens Aviation, Green ville, S.C.” “Jet Works in Denton, Texas, is great,” wrote another 400A operator.

An operator of an older Hawker 700A wrote, “Aerodynamics at Pontiac, Mich., does a great job for us.” “Penta Aviation, Vancouver (Canada) response excellent,” wrote Ian Struthers, aviation manager for 700A operator Air 700. An 800A operator wrote, “Penta Aviation is well equipped, experienced and adequately staffed; however, it is very expensive and would have replaced every component on the aircraft had we let them.”

Two Hawker operators praised General Dynamics Aviation Services facilities, including the Appleton, Wis. base.


There were no negative comments about Mitsubishi MU-2 authorized service centers. Dennis Wolf, chief pilot for Itinerant Airways, summed up: “I am very happy with the support Mitsubishi provides for its out-of-production aircraft.”

Two Piaggio Avanti operators report good results with Jet Works Air Center in Denton, Texas.

“Skytech Rockhill, S.C., has been very helpful in helping us with our PC-12,” said one Pilatus PC-12 operator. Aviation Sales of Englewood, Colo., “is very good,” and “continues to impress with the quality of work,” wrote two PC-12 operators.

Piper Cheyenne owners have few choices for service, and one operator warned, “Piper centers may not be experienced with Cheyennes. You must find Cheyenne specialty shops.”

Two Commander owners need to be careful, too, according to Semitool director of maintenance Reed Lamb. “It has been hit-and-miss lately.”

“Avmax does an excellent job,” according to one Sabreliner 40 operator, among four who praised this company.

Socata TB97080 operator Renton Coil Spring rates Axev. of Camarillo, Calif., with high marks for service—“first rate in every way.”

Factory Service Centers

An AgustaWestland operator wrote that the company’s Philadelphia service center “needs improvements and better understanding of customer support.”


Stephen Stodolski, director of maintenance for Bombardier Challenger 300 operator Hubbell, said the Bombardier facility in Wichita “did a great job during our last visit.”

The Fort Lauderdale facility has gone beyond the call of duty to accommodate maintenance requirements,” said Jay Fromer, director of maintenance for Challenger 300 operator Arven.

Without specifying a Bombardier facility, Ken Lavine, director of maintenance for Challenger 604/605 operator Whitewind, wrote, “The experience level of the technicians continues to drop.” “Hartford, Conn., is the best Challenger service center,” wrote another 604/605 operator.

While readers were not shy about offering criticism, they were also quick to praise facilities that had gone above and beyond in the last year.

“Very responsive, but not too careful sometimes with the aircraft. Scratched our windshield and won’t own up to it,” said Global 5000 captain Andrew Milewski. “Good people with our best interests at heart in Dallas. They seem to have conquered their turnover problem,” wrote a Global operator.

“Our airplanes will never be sent to a factory service center,” said a Learjet 31A operator. “The work is never timely, always needs to be re-accomplished and the people have a poor attitude with regard to customers’ needs.”

Director of operations for a Learjet 40/40XR operator Roger Lipcammon noted, “Bombardier Aviation Services facilities have improved tremendously over each of the last three years.”

Cessna’s “Orlando service center always does a great job,” said Marc Salveson, chief pilot of CJ operator Hiller Group. “Wichita and San Antonio have scheduling problems, especially with their paint shop,” wrote an XLS operator.

Falcon operators were vocal in this year’s comments. “Dassault Aircraft Services Little Rock needs more attention to detail and follow-through,” wrote a 2000EX operator. A 900EX operator said, “Dassault Little Rock, excellent personnel and support. Wilmington, not there yet.” A Falcon 50 operator wrote: “Dassault Wilmington, inconsistent quality of service, can be slow to complete.”

Dassault’s Paris Le Bouget facility received these comments from two 900-series operators: “Dassault Paris slow and not customer-minded.” “Paris knows its product. This is the...
Bell Helicopter garnered a number of positive comments, including "excellent and fast," "has improved" and "most parts available immediately," but negative comments were usually specific. One operator complained, "Bell will not allow drop shipment directly to purchaser. Must first ship to service center then to customer. Huge waste of time and money."

Four Boeing BBJ operators submitted comments, ranging from "timely" to "terrible." Bombardier's Challenger 300 appears to be having some problems, identified in nine comments, which included three mostly positive remarks. Stephen Stodolski, director of maintenance for Connecticut-based electronics manufacturer Hubbell, wrote, "To Bombardier's credit, it has invested in solving the long-running 'no fault found' plague." Another Challenger 300 operator revealed that Bombardier "still has difficulty delivering parts in a timely manner and we still receive parts that are DOA [dead on arrival]."

The parts situation seems much better for Challenger 600/605 operators, although there remain some negative comments like "slow and costly," "some parts are few and far between." Elite Air maintenance manager Robert Plowman said, "Bombardier is just getting better and better."

Cessna Citation operators provided many positive comments about parts availability, generally across a large number of models. "Cessna has taken parts off production airplanes for us when it could not produce one and I was AOG," one operator said. "Their inventory and its control is fantastic."

Even with older Citation models, parts availability seems to get high marks from operators. Paul Lucas, chief pilot for Esatro, is happy with parts availability for his older Citation, but did have a problem with a replacement for a wrongly shipped part getting lost in counter-to-counter shipping. Another Citation II-series operator wasn't as happy, however: "Cessna's parts availability for the Citation II is a joke. It seems that they don't want to support older Citations."

Falcon operators report positive experiences with parts availability, but a 900EX operator complained, "Most parts are usually available, have received a number of dead-on-arrival parts."

According to Embraer Legacy 600 operators, the company needs to improve in parts availability. One operator wrote, "Parts ordering is difficult, no online system like other OEMs and little to no tracking provided." Not all Legacy operators were unhappy, and some cited "excellent" and "very, very good" parts availability.

Eurocopter operators were favorable in their assessment of parts availability for their helicopters, with many concerned about long waits for parts shipping from Europe and some parts that never arrive. "Needed a part that is found on all models of AS 350 and it took three months!" wrote one operator.

One G150 operator said that availability is "mostly very good, but occasionally lacking. It appears to be because of the extraordinary amount of NFF [no-fault-found] components."

While one G550 operator said, "Simply the best. I have never had to wait for a part," another, director of maintenance Mike Glick, complained, "Have to go AOG a lot to get parts." In the older Gulfstream category (G1, GII, GIII), operators are fairly satisfied, but many said this is because they are able to get parts from non-Gulfstream sources.

Older Hawker owners experienced scarcity of parts, according to operators, but that problem is also showing up for operators of modern Hawker models. "Terrible—they never have anything," said one operator.

Gatlin Development chief pilot Aaron Turner had a list of complaints about parts on site for a Fleet of 10 S-76s, ranging from one A++, five C+ and four C++, is due to management decisions to save costs by reducing inventory."

TBM 700/800 parts availability "has improved dramatically," said one operator, and others indicate that this "has never been an issue," and "better recently." Another operator, however, complained, "Socata continues to prevent owners from getting overhauls on common components (such as landing gear) at our preferred qualified centers."

**Cost of Parts**

"Always too expensive" is how an AgustaWestland operator described the cost of parts. Comments about Bell ranged from "Raised the cost of parts over 40 percent to cover sagging sales" to "better than most." Parts for the BBJ are "competitively priced."

Comments about the Bombardier series ran the gamut. "Not worth it," said one Challenger 300 operator. Of the Challenger 600, comments ranged from "reasonable" to "unusually specific."

Mitsubishi Heavy Industries America's ongoing support for the MU-2 turboprop garnered several positive comments, with the only negative comment that "availability of structural parts is poor."

Only two operators commented on Piaggio Avanti parts, with one saying parts are available "in a timely manner," and another just "bad."

Piper Cheyennes are increasingly running into spares problems, but one operator of a 400L praised third-party provider Cheyenne Aircraft Services.

Sabreliner operators rate parts availability as "generally quite good" to "parts are becoming an issue." One Sabreliner 40 operator said, "Some parts are getting hard to find."

Most Sikorsky operators are happy, like this one: "To date all required parts have been available in reasonable time."

Comments about the Bombardier series ran the gamut. "Not worth it," said one Challenger 300 operator. Of the Challenger 600, comments ranged from "reasonable" to "unusually specific."
“Parts are ridiculously expensive due to their no longer being produced,” said Greg Cayon, director of business aviation and travel. Citation operators expressed similar concerns, ranging from “good” to “always out of line.” Larry Adams, maintenance director for Encore operator HealthSouth Aviation, wrote, “Sometimes I think parts pricing is excessive, and if I was not on ProParts I would use someone else because they are not competitive.”

Falcon 50 series operators agree that prices have improved in the last few years “but are still higher than other manufacturers.” A 900-series operator noted, “High, but due to the reliability of the aircraft you do not have to replace parts that often.”

Jason Smith, Embraer Legacy 600 captain, wrote, “This is where Embraer seems to win the ballgame in my view.” Eurocopter operators were in agreement that “the cost of parts through the factory is going out of sight. We find ourselves going to alternate sources and overseas vendors.”

Gulfstream operators commented on the high cost of parts but acknowledged that the company is working with operators. “High, but now they are matching prices,” said Carl Hauprich, captain/director of maintenance, Sunstate Aviation.

“It’s not cheap to operate a G550 and some of the parts are outrageously expensive, but the Meet the Quote program is quite good,” wrote Michael Magnagni, director of maintenance for Central management Services.

“Have found parts less expensive than from Hawker Beechcraft but they have been willing to adjust prices,” said Andrew Atwater, aircraft maintenance crew chief for a Hawker 400A.

“Parts cost are rising rapidly. Core charges are becoming excessive,” said IAI Westwind operator Daniel Carrigan. Operators of MD Helicopters agreed: “Some extremely too high.”

MU-2 operators reported fair parts pricing. “Reasonable based on the complaints I hear from owners of competing turboprops,” said Earl Martin, chief pilot for Mid Coast Air Charter.

Comments on the Pilatus PC-12 ran the gamut from “Most parts are available at a reasonable cost” to “Very high—the reason to fly the aircraft after warranty expires.”

“Due to ordering in small numbers from the manufacturer, the cost is exorbitant,” reported a Piper Cheyenne operator.

Sabreliner operators labeled parts “reasonable” or “expensive and difficult to find sometimes.”

There was a similar pattern among Sikorsky operators, who said prices “continue to escalate at an alarming rate” or are “average for the industry.”

A Socata TBM owner wrote, “Simple parts can be astoundingly expensive.”

**AOG Response**

An AgustaWestland operator noted, “One week to one month is the average time to AOG response.”

“Fast,” wrote an Airbus ACJ operator.

“Bell does a good job if the 407 is AOG,” said a Bell helicopter operator. “Different story with the 212, since the company has stopped supporting this airframe.”

“Boeing takes AOG orders very seriously—that’s good!” wrote Seymour Pacific Development aviation manager and chief pilot Satoshi Enoue.

A Bombardier Challenger 300 operator reported, “Very weak.” Another 300 operator said, “Bombardier has really stepped up its AOG response program.”

“AOG response is hit or miss,” said a Global Express operator.

A Learjet 45 operator reported, “Outstanding AOG response from the customer services hotline.”

“Cessna has gone above and beyond to do everything needed to keep our aircraft on schedule with various AOG issues,” said a Sovereign operator.

Falcon 50 maintenance manager Dave Dolach appreciates Dassault’s AOG efforts: “In the rare occurrence of Dassault Falcon Jet needing to acquire a spare part from France, it surely knows how to play the ‘customs game.’”

For one Embraer Legacy 600 operator, “Only lots of pressure will get the thing moving.” Another commented, “There have been only two times we were AOG and both times they came through and got the aircraft flying again.”

Sam Miller, chief pilot for Eurocopter operator Miller-Crestar Helicopters, noted, “Some items were quickly supplied; others took the slow boat from France.”

“AOG response is getting more unresponsive every day,” wrote another.

“Too many unqualified techs set out on an AOG,” said Mike Glick, director of maintenance for a Hawker Beechcraft operator. “I’ve had to wait 30 hours for AOG response from one hour away.”

“Outstanding support from Gulfstream,” wrote another G550 operator.

A Hawker Beechcraft 750 to 900XP series operator got back in the air quickly after a starter/generator bearing failed. “Little Rock had one and expressed it to us. We put it on and flew away at scheduled departure time same day.”

“Good luck,” wrote a King Air B200 operator. “Unless I stay on top of it every step of the way, the parts will inevitably be late.”

According to a Pilatus PC-12 operator, AOGs are “good, unless the part has to come from the factory.”

“Piper does not know what AOG means,” wrote Royce Rigs, chief pilot for Cheyenne II operator Air Partners. “Good, and getting better,” a Global Express/ XRS operator noted.

Warranty Fulfillment

**Bell Helicopter** “is good for Bell parts and engine parts, fair for accessories and non-Bell parts,” according to Nigel Reynolds, engineering manager for a Bell operator.

“I’m disappointed with Boeing warranty, mostly with coverage of vendor-supplied parts,” wrote Avjet chief of maintenance/BBJ Bruce Vogt.

“Our aircraft is under warranty, and the warranty department of Bombardier is absolutely criminal,” said a Challenger 300 operator. “They authorize our warranty work and then deny everything after the fact. Spending over a year to rectify the issue is another story in itself. It’s absolutely horrible customer service.” Another 300 operator is happy that “finally, online warranty is available.”

“Bombardier extends a shorter warranty period than is being offered by the vendor-unacceptable,” wrote a Global Express/ XRS operator.

“Pathetic,” said an Encore operator. “Cessna [offered a warranty on] an FCU for six months. I found out by doing my own research that Hamilton Standard’s vendor warranty is one year or 1,000 hours.”

“Eventually obligations are completed,” said Falcon 900DX chief of maintenance David Weger. “The approval is slow and follow-up is required.”

According to a 900EX operator, “Outstanding response from the current leaders of the support group.”

Two Embraer Legacy 600 operators expressed opposing opinions: “If you aren’t in the Embraer Executive Care program, the warranty is almost worthless; no real claim system.” Another 600 operator wrote, “Way above and beyond. No issues ever!”

A Gulfstream G350 operator eventually was satisfied, according to this report: “Had one issue of refusal to honor an interior issue under warranty after interior warranty was expired. Since we had the problem multiple times before warranty expiration, we felt it should be covered. Took a little coaxing, but got it covered.”

A Hawker Beechcraft 750 through 900XP operator wrote that “Hawker Beechcraft has honored everything we asked for.” “Warranty and SupportPlus are lacking in user ease,” said another Hawker operator. “Their accounting system is a nightmare.”

“Honor is paramount among Mitsubishi and those in our MU-2 community,” said Earl Martin, chief pilot for a MU-2 operator Mid Coast Air Charter.

“It should not take so much effort from the customer to get timely and accurate services,” said a Sikorsky operator.

According to Socata TBM 700/850 pilot Antal Rajnak, “We have no reasons to complain. The factory has been generous even after the warranty has expired.”

**Technical Manuals**

AgustaWestland technical manuals are “well written and illustrated” according to director of maintenance Michael Waters. AgustaWestland captain Peter Row, however, noted that “often, manuals don’t match the real aircraft.”

“Bell has too many manuals and is too slow in updating them,” according to one operator. Another said, “Bell manuals and tech pubs are the best in the industry.”

“Boeing manuals and the MyBoeingFleet Web site really are excellent!” according to Satoshi Enoue, aviation manager and chief pilot for BBJ operator Seymour Pacific Developments.

Bombardier’s “SmartFix Internet-based program is phenomenal,” wrote a Challenger 300 operator.

“The new version of SmartPubs has some large deficiencies—for example, search functions for the entire illustrated parts catalog are not possible,” according to a Challenger 604/605 operator.

“Good and getting better,” a Global Express/ XRS operator noted.

“Poor updates, inconsiderate information buried in ATA chapters that you wouldn’t normally look at,” wrote Citation II manager of flight operations Michael Bohling.

“Errors are not corrected,” reported a Dassault Falcon 2000EX operator, “even after being identified for years.”
In an effort to keep aircraft flying, OEMs are building centrally located parts warehouses.