



AIN Product Support Survey

Dassault retains top ranking in 2021

by Jerry Siebenmark

For the third year in a row, Dassault Aviation held the top spot for business jets in the annual **AIN** Product Support Survey. The French manufacturer of Falcon jets recorded this year's highest Overall Average ratings of newer and older aircraft, with a score of 8.7 among jets based on results of **AIN**'s survey of aircraft operators, pilots, and maintainers.

Dassault's 8.7 Combined Overall Average rating is up from last year's 8.3 and higher than Gulfstream Aerospace, which came in second for a third consecutive year based on its mid-cabin jet Overall Average score of 8.5. That leaves Embraer in third place with a score of 8.4.

In the turboprop results, **AIN** decided to break out the results of in-production and out-of-production aircraft (see *Survey Rules and Methodology* for more details). Pilatus recorded the top score for

in-production turboprops with an Overall Average of 8.8, up 0.8 from last year's score of 8.0 and a 2019 score of 8.3. The out-of-production Mitsubishi MU-2 turboprop recorded a strong Overall Average score of 9.1, up slightly from 9.0 last year.

In comments to **AIN** regarding improvements to product support over the past year, a number of OEMs cited the challenges of the Covid-19 pandemic on those efforts, although none reported interruptions in providing service and support to their customers.

For this year's survey, there were 885 respondents who rated 2,671 aircraft broken down into 137 models. The minimum number of ratings required to include a manufacturer's aircraft in the final results is 20. (For more details, see *Survey Rules and Methodology* on this page.)

Dassault Aviation

The results

Dassault Aviation held on to its first-place ranking in the 2021 **AIN** Product Support Survey with a score of 8.7 in the Overall Average ratings of newer and older aircraft, up 0.4 from the score of 8.3 it recorded in 2020 and 8.4 in 2019. It also recorded gains in six out of 10 categories: 8.9 in Parts Availability, 7.5 in Cost of Parts, 8.8 in AOG Response, 9.1 in Warranty Fulfillment, 9.0 in Technical Manuals, and 9.3 in Technical Reps.

The improvements

While Dassault Aviation's customer service organization has slowed its pace of MRO acquisitions that saw it purchase the maintenance businesses of TAG and ExecuJet in 2019, it hasn't throttled back on improvements within the organization over the past 12 months. In January, Dassault consolidated its MRO sales operations into a single organization for customers in Europe, the Middle

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Survey Rules and Methodology

The objective of the annual Product Support Survey is to obtain from the users of business jets, pressurized turboprops, and turbine-powered helicopters statistically valid information about the product support provided by aircraft manufacturers over the last year. The goal is to encourage continuous improvement in aircraft product support throughout the industry.

NEW SURVEY TOOL

This year, the survey was conducted via a newly designed questionnaire, developed in partnership with Rolland Vincent Associates, a Texas-based consultancy focused on aviation market research, strategy, and forecasting. The redesigned survey was created to provide improved ease of use and to encourage more participants to complete the entire survey.

The new survey tool:

- » Included Spanish and Portuguese versions for the first time.
- » Asked respondents to evaluate one full aircraft at a time including airframe, engines, and avionics.
- » Included clearer language and imagery around the individual categories and the evaluation scale.
- » Added a new aircraft category: Cost Per Hour Programs

METHODOLOGY

AIN emailed qualified readers a link to the password-protected survey website, which was open from May 3 to June 11. Respondents were asked to rate individual aircraft and provide the tail number, aircraft age, primary region of service, and whether they used factory-owned or -authorized service centers, or both. Respondents were also asked to rate, on a scale from 1 to 10, the quality of service they received during the previous 12 months in the following categories: Factory-owned Service Centers; Cost Per Hour Program; Parts Availability; Cost of Parts; AOG Response; Warranty Fulfillment; Technical Manuals; Technical Reps; Overall Product Reliability.

THE RESULTS

In total, 885 unique participants from 67 countries completed the survey, representing 2,671 aircraft and 137 aircraft models. Rolland Vincent Associates reviewed the data to ensure accurate and valid responses. They also compiled the final survey results in close coordination with **AIN**. In consultation with Rolland Vincent Associates, two changes were made this year:

- » The report only shows a single table highlighting the averages of both older and newer aircraft. This change reflects the lower utilization of older aircraft and consequently lower response numbers. It also simplifies the presentation of the data.
- » The report separates in-production turboprop aircraft and out-of-production turboprop aircraft. We determined it was not apples-to-apples to compare these OEMs in the same grouping. Respondents were also asked to recognize individuals who have provided them with exceptional product support and service. Select individuals are highlighted in this report.

RESULTS ANALYSIS

In analyzing the results of this survey vs. prior years, this year's scores were generally higher. Our thoughts on this are:

- » Higher scores reflect the OEMs continuous improved and focus on the customer experience.
- » Certain segments of business aviation did fly considerably less from May 2020-May 2021. Fewer cycles may have led to fewer scheduled and unscheduled maintenance events.
- » The new survey tool certainly could have played a part in scores tending to be higher. The switch from a drop-down to radio buttons reduced the chance of a mistaken score.
- » We suspect this year's strong results could establish a new benchmark of excellence for OEMs in the years ahead as flight activity rebounds globally.

COMING NEXT

The 2021 **AIN** Product Support Survey results for aircraft are published in this issue, avionics, cabin and connectivity will be featured next month, and engines will follow in October. ■

Combined Overall Average Ratings of Newer and Older Aircraft	Overall Average 2021	Overall Average 2020	Rating Change from 2020 to 2021	Factory Owned Service Centers	Authorized Service Centers	Cost per Hour Programs	Parts Availability	Cost of Parts	AOG Response	Warranty Fulfillment	Technical Manuals	Technical Reps	Overall Aircraft Reliability
Business Jets													
Dassault (Falcon)	8.7	8.3	0.4	8.3	8.8	7.8	8.9	7.5	8.8	9.1	9.0	9.3	9.2
Gulfstream (Mid-Cabin)	8.5	8.1	0.4	8.3	8.4	7.7	8.3	7.0	8.7	9.1	8.7	9.3	8.7
Embraer (Phenom, Legacy, Praetor, Lineage)	8.4	8.1	0.3	8.5	8.9	8.2	7.9	7.4	8.3	8.8	8.7	8.4	9.1
Gulfstream (Large-Cabin)	8.3	8.2	0.1	8.2	8.3	7.6	8.6	6.7	8.6	8.5	8.3	8.8	9.3
Textron Aviation (Citation)	8.1	7.9	0.2	7.5	8.6	7.2	8.3	6.6	8.3	8.6	8.0	8.6	8.7
Bombardier (Global)	8.0	8.0	–	7.3	8.6	7.5	7.8	6.4	8.1	8.1	8.0	8.8	8.4
Bombardier (Challenger)	7.9	7.9	–	7.5	8.5	7.6	7.7	7.0	7.7	8.0	7.8	8.4	8.7
Bombardier (Learjet)	7.7	7.2	0.5	7.1	8.9	7.7	7.0	6.5	7.7	7.7	8.0	8.1	8.4
Textron Aviation (Hawker)	7.6	7.1	0.5	7.3	9.0	7.8	7.3	5.3	7.3	7.9	7.9	7.1	8.4
Turboprops													
Pilatus (PC-12)	8.8	8.0	0.8	9.4	9.2	8.4	8.8	6.9	8.5	9.5	8.9	9.3	9.6
Textron Aviation (King Air)	8.2	7.5	0.7	7.9	8.2	7.8	8.4	7.2	8.0	8.3	8.5	8.5	9.1
Turboprops (out-of-production)													
Mitsubishi (MU-2)	9.1	9.0	0.1	9.6	9.7	*	8.6	7.1	9.3	*	9.2	9.7	9.6
Rotorcraft													
Leonardo	8.3	7.0	1.3	8.4	8.2	7.9	8.1	7.2	8.6	8.7	8.7	8.8	8.6
Bell	7.9	7.7	0.2	7.6	8.4	8.1	7.6	6.7	7.5	8.0	8.0	8.6	8.7
Airbus Helicopters	7.6	6.4	1.2	7.1	8.5	7.4	7.5	5.8	7.2	7.3	7.7	8.0	9.0

* Not reportable due to small respondent sample

» Dassault Aviation continued

East, Africa, and Asia-Pacific that brought together the MRO sales operations of Dassault Falcon Service (DFS), TAG Maintenance Services (TMS), and the Falcon segment of ExecuJet MRO Services. That move serves to “keep the customers feeling that now they are not only dealing with single companies, but they are dealing with the Dassault MRO network,” Jean Kayanakis, senior v-p of Dassault Aviation’s worldwide customer service and service center network, told **AIN**.

The consolidation helps to optimize the planning of where customers would like to have their Falcon jets serviced and makes the service center network more efficient. It also exposes customers to the newer capabilities of service centers such as ExecuJet MRO Services Malaysia in Kuala Lumpur. “A few years ago they were not doing anything but now they’re doing large projects,” Kayanakis said.

The French airframer is also moving the Falcon Command Center and its frontline customer support to Mérignac, putting those operations closer to the production lines and the technical staff who support Falcon manufacturing. Those relocating operations will be housed in a new building that is expected to open this summer.

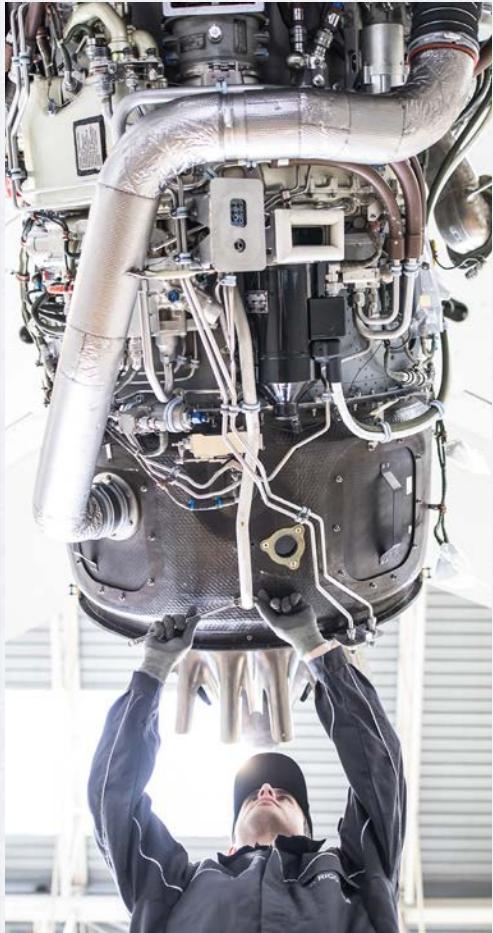
In the U.S., Dassault is undertaking a 10,000-sq-ft expansion in Reno, Nevada, which serves the West Coast. That expansion is expected to be completed this year. “We’re thinking that this may be an important place for the future of the 10X,” Kayanakis said. Elsewhere, the company is building a new

Middle East service facility in Dubai and plans to build a larger service center with ExecuJet in Kuala Lumpur that will replace its existing center there. It will be at the same airport, and Kayanakis said the relocation will likely happen sometime in 2023.

Lastly, Dassault continues to focus on making improvements to its FalconCare maintenance support program. That program offers scheduled and unscheduled maintenance services through C-check, including airframe, avionics, landing gear parts, labor, consumables, service bulletins, and maintenance tracking.

In October, Dassault announced new options for FalconCare, including offering it at two different levels. The basic level, known as FalconCare Essential, covers the full cost of Dassault spare parts, while FalconCare Elite covers parts as well as labor, consumables, AOG GoTeam service, documentation, and exchange items such as batteries and wheels. FalconCare Efficiency Bonus—a rewards program—and a flex spending account for costs outside FalconCare coverage are also available with both plans.

“What is important is we are adding options, and consistently improving the program to cover more services and to be more customized,” Kayanakis said. “It has had quite good success with our customers. I think it’s a trend in the industry; we’re not the only one. But there is a lot of competition [and] we’re trying to be different. And I think we’re able to do that.” He noted that there are 500 airplanes enrolled in FalconCare.





Pilatus Aircraft

The results

Pilatus's PC-12 was tops among in-production turboprops for the third consecutive year, besting Textron Aviation's King Airs, with a Combined Overall Average Ratings of Newer and Older Aircraft of 8.8, improving upon its 2020 Overall Average of 8.0 in 2020 and 8.3 in 2019. The Swiss airframer also saw improvement in nine of 10 categories: 9.4 in Factory Owned Service Centers, 9.2 in Authorized Service Centers, 8.4 in Cost per Hour Programs, 8.8 in Parts Availability, 8.5 in AOG Response, 9.5 in Warranty Fulfillment, 8.9 in Technical Manuals, 9.3 in Technical Reps, and 9.6 in Overall Aircraft Reliability.

The improvements

Officials of the Swiss airframer told **AIN** they were just happy to get through the past year and the effects of Covid-19 relatively unscathed. "We were able to manage our workforce and our production to be able to build the aircraft and then more importantly to support the aircraft that were out there flying," said Pilatus v-p of marketing Tom Aniello. Still, Pilatus managed to continue enhancing its support network by adding four more PC-24 authorized service centers in North America. Additionally, the company provided

visibility of spare parts throughout its global service center network as well as offered an online option for maintenance training courses because of the travel restrictions brought on by the global pandemic.

At its North and South American headquarters and completions site in Broomfield, Colorado (which is marking its 25th anniversary this year), Pilatus broke ground on a new paint shop. And it certified a full-motion PC-12 NGx simulator for pilot training.

While Aniello and Pilatus v-p of customer service Piotr Wolak noted that utilization and demand is "unbelievable" post-Covid, the supply chain remains a concern. "Just managing inventory and getting parts for production and spares...it's still a challenge," Aniello said. "We and a lot of other companies were working off of existing inventory and it's just now this year I think we're all starting to see some of the real weaknesses in the supply chain, whether it's getting parts or the quality of parts we're receiving. Certainly, it's keeping us busy both on the production side and the support side."

Wolak noted there are "a lot of things in the pipeline" in terms of Pilatus product support improvements but added it's too early to disclose them. "Our company's motto is you always improve what you're doing,"



Gulfstream Aerospace

The results

The Savannah, Georgia-based airframer placed second in the Combined Overall Average Ratings of Newer and Older Aircraft with a rating of 8.5 for its mid-cabin jets and fourth place with an Overall Average rating of 8.3 (up from 8.2 last year) on the strength of its large-cabin jets. For mid-cabin jets the OEM recorded improvement in Warranty Fulfillment and Technical Reps with scores of 9.1 and 9.3 respectively. Its large-cabin jets improved in Overall Aircraft Reliability with the highest rating at 9.3.

The improvements

In the past 12 months, Gulfstream Aerospace has opened two new service centers, a 225,000-sq-ft MRO complex at Farnborough Airport and a nearly \$50 million FBO and service center with sister company Jet Aviation at Palm Beach International Airport in Florida. It has also started construction on a \$42 million, 163,000-sq-ft service center at Alliance Airport in Fort Worth, Texas that Gulfstream customer service president Derek Zimmerman told **AIN** should be completed sometime between end of first quarter and into the second quarter of 2022.

"Taken in its entirety, if you look back a little farther Alliance, once it's online, that'll be the eighth new service center to join the Gulfstream customer support network in the last eight years," Zimmerman said. But in the past year, Gulfstream also closed a service center in Las Vegas and consolidated the Long Beach, California, service center with its Van Nuys operation.

Beyond Gulfstream's service center operations, it opened a new global aircraft parts distribution hub near Atlanta Hartsfield-Jackson International Airport last August housing more than \$20 million in spares. "It gives us almost immediate access to a terrific array of commercial flights and cargo flights. When hours and minutes matter, being that close to a host of flights can make all the difference from a customer perspective," he said.

More recently, the airframer announced plans to add G600 completions at the Love Field facility. The company is adding more than 13,000 sq ft to its Appleton, Wisconsin completions hangar.

Besides opening new and expanding existing facilities, Gulfstream rolled out a new ecommerce site in the second half of last year, making it easier for customers to access more than \$1 billion in parts. "We're soliciting feedback from [customers] to continue to build out the functionality," he said.

Also in the past year, Gulfstream is taking expertise of its designers, engineers, and installers in delivering more than 3,000 aircraft to introduce services to its in-service fleet that includes significant configuration changes, updating interiors, adding functionality, and aircraft repainting.

In terms of overall customer service capabilities, "I don't feel like we're done yet," Zimmerman added. "I think there's more that we can do and will do as our fleet of aircraft continue to grow. We are committed. Our parent company is committed. And we'll continue to grow as customers need us."

Embraer Executive Jets

The results

Embraer came in third place again with its Phenom, Legacy, Praetor, and Lineage jets with a Combined Overall Average Ratings of Newer and Older Aircraft of 8.4, a 0.3 increase from last year when it tied Gulfstream's mid-cabin offerings with an Overall Average of 8.1. The Brazilian airframer also saw improvement in its Factory Owned Service Centers rating with an 8.5 rating and a Cost per Hour Programs rating of 8.2.

The improvements

Frank Stevens, Embraer Services & Support v-p of global MRO centers, told AIN that continuous improvement is "the name of the game" within his organization and the focus of that has been on parts inventory. "We have had many actions to ensure the parts inventory is reviewed and adjustments are made to levels to support the demand," he said. Stevens also noted Embraer has evolved its aircraft maintenance program "to ensure the highest level of safety and quality."

On the modification front, Embraer monitors the market and maintains close contact with customers to determine "the most desired features to be developed and included in our portfolio of aircraft modifications." That includes new avionics loads that add safety features such as cockpit display of traffic information, predictive windshear, synthetic vision guidance system, and runway overrun awareness and alerting system, among others. "We work hard to induce these improvements in our day-to-day activities while striving to address the long term through customer driven action plans," he said.

Embraer operates three company-owned service centers in the U.S.—Mesa, Arizona; and Fort Lauderdale and Melbourne, Florida—as well as Sorocaba and Gavião Peixoto in Brazil and Le Bourget in France and a worldwide network of more than 70 authorized service centers.

"Embraer has a vetting process to ensure that these partners pass a complete check to ensure the same safety, quality, and delivery are maintained," Stevens said.



Textron Aviation

The results

The Wichita-based airframer saw improvement for its Citation and Hawker product support in the survey's Combined Overall Average Ratings of Newer and Older Aircraft by increasing its year-over-year ratings 0.2 to 8.1 for Citation and 0.5 to 7.6 for Hawker, pushing the OEM's Citation from its seventh spot in 2020 to fifth—and edging out Bombardier's Global and Challenger models—while Hawker's position remained unchanged from last year.

Hawker models also saw an increased top rating of 9.0 for Authorized Service Centers.

Among turboprops, Textron Aviation's Beechcraft King Air recorded an Overall Average rating of 8.2, an increase from last year of 0.7, but it wasn't enough to unseat Pilatus's PC-12. The King Air did earn a high mark of 7.2 for Cost of Parts in this year's survey.

The improvements

One of the big initiatives in Textron Aviation's customer service organization in the past 12 months has been the rollout of a "single sales doc" that allows customers who are getting their Citation jets or Beechcraft turboprops maintained at the airframer's service centers to see the progress of work. "As we close out work it updates that document and the customer has almost a real-time view of the invoice as it builds," Textron Aviation senior v-p of customer support Brian Rohloff told AIN.

Also seeing some tweaking is the company's customer portal, where the single sales doc resides. "Just recently we updated our customer portal," Rohloff continued. "We streamlined it, giving customers central access for any maintenance needs, any parts needs, tech pubs, and just streamlining the business, streamlining our interactions with the customer." Textron Aviation expanded its iCall customer support service in Europe as well as "go teams" there for AOG because "oftentimes with our MSUs [mobile service units] it can be a challenge to get across borders."

Rohloff added that the company also is close to establishing additional line service capabilities

at Stuttgart Airport in Germany. In the Asia-Pacific region, the Citation service center in Singapore has added more aircraft models to its certification while also building up its structural repair capabilities. Before, "we tended to bring that structural repair activity back to Wichita," Rohloff said. "Now we've built up the team and capabilities in Singapore to do much of that [work]."

The January 2020 acquisition of Premiair Aviation Maintenance in Australia has been a "great opportunity to bring our OEM service to all of our customers down there," he said. "In a very short period of time Premiair is now CASA authorized to work on all of our Textron Aviation products."

In terms of aftermarket parts, one key area that's seen improvements is the company's ecommerce site, senior v-p of parts and programs Kriya Shortt told AIN. Specifically, the company has worked to make it easier for customers with a partial part number to find the exact part they're looking for as well as see what parts may be on back order. Other improvements to the site will include estimated shipping rates and lead time projections.

The company continues to evaluate parts pricing, including on a case-by-case basis. "When a customer brings that to our attention, we're evaluating it," she said. "If there is a chance we were not priced right in the market, we'll own that." Even in instances where the company has adjusted the price on a certain part, it may not be the lowest price in the market, but it will be a fair price, she added.

Shortt acknowledged that because of the pandemic "there are some places [in the supply chain] that are constrained. The team is working diligently through that and our supply base is being transparent with us so that we can provide information back to our customers. I appreciate that our customers have an understanding that we were all impacted by the pandemic. It does have an impact when we can't supply a part to a customer who has an important business meeting or revenue-generating flight. But what they most want to know is when they can expect it and that you have a handle on it."

Bombardier

The results

Bombardier's Challenger and Global jets moved lower in this year's survey, recording 7.9 and 8.0 respectively in the Combined Overall Average Ratings of Newer and Older Aircraft, the numbers of which were flat from last year's survey. But Learjet was up 0.5 to 7.7 on the Overall Average.

The improvements

"Bringing our jets back home" has been the strategy and guiding principal at Bombardier over the past five years, Jean-Christophe Gallagher, Bombardier executive v-p of services and support and

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›Bombardier continued

corporate strategy, told **AIN**. And as a result, "we're going through the biggest expansion of our service network in the history of the company," he said. Now, the company is in the "most interesting part" of that strategy, where a lot of its past investments are coming to fruition, Gallagher noted.

In January, Bombardier completed the acquisition of issued and outstanding shares it didn't own of Lufthansa Bombardier Aviation Services from Lufthansa Technik and ExecuJet Aviation Group, giving the Montreal-based airframer a wholly owned service center in Berlin and its ninth such center. At the end of June, the company took possession of its 330,000-sq-ft service center expansion at Seletar Aerospace Park in Singapore where later this summer it will begin accepting customers. "And we've got so much more coming in the next year," Gallagher added. That includes a 250,000-sq-ft service center at London Biggin Hill that replaces its existing service center there and expected to open by the end of this year. There are also a 50,000-sq-ft service center at Essendon Fields Airport in Melbourne, Australia, and a new \$100 million, 300,000-sq-ft service center at Miami-Opa Locka Executive Airport.

"All of these expansions are coming due—boom, boom—one after the other and it's going to basically grow our service network by 50 percent in one shot," Gallagher explained. "We're going to go from about two million sq ft of space to three million sq ft of space in this expansion journey."

But the expansion activity does not stop there. Bombardier now has seven line maintenance stations in Europe and has added one each in the U.S. at Teterboro Airport in New Jersey and Van Nuys Airport in California. "That complements overall the heavy maintenance network," he said. "I describe it as the tentacles of the network, spreading around the big bases and supporting our customers

where they fly." Additionally, Bombardier's Mobile Response Team is up to 30 trucks across the U.S. and Europe. "It's an ecosystem of different support structures that come together, always coordinated by the central entity in Montreal that we call the Customer Response Center."

But the "real revolution" in Bombardier's product support is coming through Smart Link Plus health monitoring units (HMU), he said. The company's flagship aircraft, the Global 7500, was the first Bombardier aircraft to come equipped with an HMU.

"This piece of equipment is so game-changing, not only for Bombardier who provides the support but for our customers, in terms of being able to benefit from just a heightened level of support from the manufacturer," Gallagher explained. The HMU communicates with Bombardier in real-time and allows the OEM to remotely troubleshoot problems with the airplane. Not only does it cut the time it would take Bombardier technicians on the ground to troubleshoot an issue, it accelerates the process of dispatching parts and technicians to fix the issue.

Bombardier announced at the 2019 NBAA-BACE that it would retrofit the installed base of Challenger and Global jets with the HMU for free although the monitoring service requires a Smart Link Plus subscription. That work is beginning this summer on some Challenger 300s, Gallagher noted. "We're bringing that benefit of the connected aircraft to a 15-year-old airplane or a 10-year-old airplane," he added.

"Retrofitting a fleet of more than 2,000 airplanes is a complete other game, which we know will catapult us into a new era of support." It's a game-changer because Bombardier will know about a maintenance issue and what it is and will have dispatched the part and the technicians—in an AOG situation—even before the call comes in from a customer. "That's the kind of new level of customer interaction we want to reach with that kind of technology."

Mitsubishi

The results

Mitsubishi's out-of-production MU-2 and its variants occupy their own category in this year's survey, and the company continues to receive high marks from operators for its support of the turboprop twin even though production ended in 1986. On the Combined Overall Average Ratings of Newer and Older Aircraft, Mitsubishi received a rating of 9.1, which was up slightly from 9.0 in last year's survey.

The improvements

Mitsubishi Heavy Industries America (MHIA) continues to support the aircraft through its MU-2 Aircraft Product Support Division located in Addison, Texas, which provides product support programs worldwide for the Mitsubishi MU-2B series turboprop airplanes. Its support comprises spare parts, sales, engineering, field support, quality assurance, and flight safety as well as offers learning opportunities based on the latest best practices in flight safety.

MHIA product support director Yoshiaki "Yoshi" Asako told **AIN** that in the past 12 months many MU-2 operators and owners "faced challenging times, but with the benefit of the Special Federal Aviation Regulation No. 118 providing relief from several regulatory requirements, including Part 91 Subpart N for MU-2 pilots, MHIA saw encouraging activities from MU-2 owners and pilots continuing to fly their airplanes as well as maintenance activities from its MU-2 authorized service centers.

Because of the Covid-19 pandemic, the company had to cancel its biennial, in-person Pilot's Review of Proficiency. However, it was able to offer a number of webinars throughout the past 12 months, including analysis of past accident scenarios and safety enhancement systems. "MHIA is hoping to participate in more face-to-face events in the future," Asako said.

The company also remains focused on continuing its ongoing support of the MU-2 through localizing manufacturing of spare parts in the U.S., he said. "These efforts should continue to enhance the MU-2 parts supply chain and FAA coordination into the future," he added.



Leonardo Helicopters unseated Bell as the perennial favorite in AIN's annual Product Support Survey with a Combined Overall Average Ratings of Newer and Older Aircraft of 8.3, a noteworthy jump from the 7.0 the Italian airframer recorded in last year's survey and 6.8 in the 2019 survey. Leonardo's advance pushed Bell to second place with an Overall Average of 7.9, a 0.2 gain from Bell's 7.7 in 2020. Airbus Helicopters also saw a noteworthy improvement in its Overall Average, moving from 6.4 in 2020 to 7.6 in this year's survey. The increase, however, wasn't enough to move the OEM from its third-place position.

Leonardo Helicopters

In addition to moving up to the top spot among helicopter OEMs, Leonardo saw higher ratings in seven of 10 categories: Factory Owned Service Centers (8.4), Parts Availability (8.1), Cost of Parts (7.2), AOG Response (8.6), Warranty Fulfillment (8.7), Technical Manuals (8.7), and Technical Reps (8.8).

The improvements

In spite of the challenges Leonardo faced in 2020 along with other helicopter OEMs, the company continued its investment in digital transformation, which was of great help during the pandemic, the Italian airframer told AIN. That included Leonardo's HeliLink application for remote troubleshooting.

Leonardo also continued to expand its support network with the acquisition last August of Precision Aviation Services (PAS), which has since been renamed Leonardo South Africa. PAS had served as an authorized service center for Leonardo for 25 years and was its first "excellent" service center on the continent, recognizing its large scope of service capabilities and focus on maintaining third-party fleets while guaranteeing continued fulfillment of Leonardo's expectations. PAS supported a fleet of more than 120 helicopters operating mainly in Sub-Saharan Africa.

In April the company opened an \$80 million Philadelphia training academy that is operated by RotorSim, a joint venture between Leonardo and CAE, offering mission-specific ground, in-flight, and virtual training. The academy is expected to serve up to 1,000 students per year and features 10 multi-media classrooms, three maintenance simulators (AW139 and AW119 with the AW609 to be added shortly), and two full-motion flight simulators for the AW139 and AW169/AW609 with roll-on/roll-off capability.

To ensure parts availability during the pandemic, Leonardo leveraged its worldwide hubs to avoid interruptions in distribution. The company said it "completed [this] in a matter of weeks from the start of the pandemic shutdowns. And we did the same with our service representatives, deploying them immediately to locations in closer proximity to our customers' main operations."

Lastly, the company used its recently opened repair centers in Malaysia, Australia, and the Gulf of Mexico to ensure maximum fleet availability, which it said allowed for better and faster support for its customers.



Bell

While Bell moved down a notch in its Combined Overall Average Ratings of Newer and Older Aircraft but up to an Overall Average of 7.9, survey respondents gave the manufacturer a higher rating for its Cost per Hour Programs of 8.1.

The improvements

In spite of the interruptions brought on by the Covid-19 pandemic, 2020 was a busy year for Bell's product support organization, including the opening of Zhenjiang Bell Textron Aviation Service in China following the acquisition of Zhenjiang Aerochine Aviation. That move was made to support a growing Chinese customer base and a spare parts supply center in Shanghai, Bell v-p of customer experience Mike Reagan told AIN.

In keeping with improving its global product support capabilities, Bell also expanded its component overhaul services of products such as gearboxes at its Prague, Czech Republic service center, specifically for the company's 412 and 429 model helicopters. In the UK, Bell expanded its rotor blade capabilities at a company-owned rotor blade repair operation that serves Europe. Continuing that focus on rotor blade repair, RBI Hawker in Australia—Bell's

joint venture with Jet Aviation's Hawker Pacific Airservices—opened a dedicated rotor blade repair facility in Brisbane.

"The piece that's fairly noteworthy is that we also have been attacking the price model of the spares and we've actually been lowering the prices on specific parts for some of our in-production models," Reagan said. "And the 429 probably received some of the most...parts where we lowered prices to support that growing fleet." Keeping parts costs low and competitive is key to an industry that places great import on the direct operating costs of an aircraft. And whatever you can do to improve the direct operating costs, then you have greater success that an operator will select your aircraft to support the mission that they fly," Reagan explained.

Also on the parts side of Bell's operation is an effort begun in the past year to work with competitor Leonardo on supporting the "AB," or Agusta-Bell, legacy fleet. Under that effort, Bell is offering parts to improve price and lead times for AB owners and operators. Previously, Leonardo, which acquired Agusta, was the only source for those parts. The AB fleet comprises four models—AB 206, AB 212, AB 412,

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» Bell continued

and AB 205—built by Agusta under license from Bell. New this year is the planned launch of a dedicated AOG desk within Bell's customer business center at its Fort Worth, Texas headquarters that will "verify we have the right technical support, the right solution, the right parts to get the aircraft back in the air," he said. Bell will be enhancing its Customer Advantage Plans to offer operators and owners more choice through a variety of selections.

The OEM is also working on a "multi-year portfolio of launches" of upgrades for its helicopters aimed at increasing their performance or mission capabilities. "Many companies partake in offering

or developing STCs for the Bell aircraft but coming from the OEM you have the advantage of knowing all the intricacies of the operating systems within the aircraft," Reagan said. "So this is why we're embarking on launching this portfolio of upgrades."

These are expected to begin with a glass cockpit upgrade program in 2022 for Bell's medium fleet, which will give, for example, customers flying older 412 EPs "the ability to commonize the avionics suite with perhaps some of the newer aircraft like the [412] EPI or the [412] EPX," he said. "Again, we see this as an advantage coming from the OEM. It is targeted to reduce obsolescence, reduce weight, and then offer additional functionality in the cockpit for the customer."



Airbus Helicopters

The results

In addition to improving its Combined Overall Average Ratings of Newer and Older Aircraft a significant amount, to 7.6 from 6.4, Airbus Helicopters received high marks for Authorized Service Centers with a rating of 8.5 and 9.0 for Overall Aircraft Reliability.

The improvements

Among the improvements Airbus Helicopters has been making to its product support operations is a €100 million investment in spares for safety structures, Airbus Helicopters executive v-p of customer service and support Christoph Zammert told **AIN**.

In June, the French airframer agreed to acquire ZF Luftfahrttechnik from ZF Friedrichshafen in a deal that will broaden its range of MRO capabilities and add competencies in dynamic systems.

As a result of the Covid-19 pandemic, the company is looking to develop dual sources for the manufacture of critical components, Zammert added.

Airbus helicopters has seen enrollment in its HCare maintenance support program increase to 2,400 helicopters, or 20 percent of the global fleet, he said. The company also launched HCare Classics for helicopters no longer in serial production, such as the EC120 and the Dauphin. "They have different needs, and also

when it comes to sourcing parts, we manage the obsolescence as some of those parts are no longer in serial production," he added. "We needed to go a different way in order to make sure that our customers get the support they need from us."

Some ways Airbus Helicopters will source those out-of-production parts will be to manufacture those parts that have a high rate of need as well as "creating communities" where customers can source those parts through an exchange with other customers. Zammert added the legacy fleet comprises 15 percent of the flying fleet; "so it's an important source of revenues for us, but also an important population of customers, and we need to take care of them."

On the training front, the company also learned from the pandemic that it's important for Airbus Helicopters to develop more local solutions so training staff can deploy closer to the customer for training events. As well, the company has been working more on digital content that customers can use for remote learning, including maintenance training, Zammert explained. During the past year, the company has also integrated Airbus Helicopters Training Services for a more streamlined, consistent and coherent customer experience, he said. Also, it has certified its Level D H160 full-flight simulator and opened its H145 Level D full-flight simulator training in Texas.

Above & Beyond-OEMs

Jessica Good (Beechcraft)

She was on top of all at Aircraft Delivery in Wichita.

Justin Brown (Bombardier)

Justin has been very supportive of our team bringing a brand new 6000 into a new flight department. He has worked closely with us and provided the resources and support we have needed throughout the buildup of our department. His immediate manager Julien Bouchard has also been tremendously helpful with the entry into service and support for our team.

Bill Maslowski (Dassault)

Bill is consistently one of the most capable, engaged, enthusiastic, and responsive customer representatives I have ever dealt with. His looming retirement is well-deserved, but leaves big shoes to fill.

Alessandro Rossi (Embraer)

Embraer provides an incredible range of product-support resources. They are so many that often the aircraft operator is not knowledgeable enough about those resources to make the best use of them. Our Tech Rep, Mr. Alessandro Rossi, has been absolutely vital in helping us to make the best possible use of all of the excellent product-support resources made available by Embraer. Thank you Mr. Rossi!

Tony Hess (Gulfstream)

His attention to customer details is very detailed. Great communicator.

Beat Imboden (Pilatus)

For so many years, Beat from the technical support team at Pilatus is always helpful to sort out troubles with his extensive knowledge and experience. Thank you.

Ali Zaidi (Textron Aviation)

Professional, capable, and competent. If Ali doesn't have the answer or can't help me, he will either get me the answer or put me in touch with someone who can

help me. By far my most valuable contact within the Textron world. Hopefully, Textron will recognize his abilities and promote him to a position where his work ethic can actually change the operators' Textron experience on a wider scale.

Remi Albanese (Airbus Helicopters)

In-depth knowledge of customer problems and being assertive with the solutions in each of them.

Jim Agnew (Bell)

Considering he is not based in the Philippines, he visits us once a month or two.

Lorry Wang (Leonardo)

Very professional, experienced, and active to support our customer and willing to make friends with the customer no matter what the guy's position is.

Above & Beyond-Service Centers

Janet Beazley (Duncan Aviation)

She is a wonderful project manager. Always responsive to customer concerns. She always has strong consideration for her customer's schedule, aircraft, and budget.

Elie Zelouf (Jet Aviation)

He is the man of VIP aviation maintenance.

Julija Gerasimuk (TAG Maintenance Services)

Julija is the top sales manager I've ever encountered; professionalism and willingness to support are outstanding.

Kendal Krieling (West Star Aviation)

Best attitude, tenacity, experience, drive, and he never gives up on any job. He has found parts for us when no other company could. Their hangar was full of Hawkers and he still managed to get us in on an AOG, and they performed the work flawlessly as usual and got us out the door on time. Easy to work with and is a gentleman.