

GE and Rolls-Royce topple Williams from the top spot among turbofan makers, and Honeywell spools up to take the turboprop/turboshaft crown.

by Nigel Moll

General Electric and Rolls-Royce tie for first place among turbofan manufacturers, each scoring an overall average of 8.0 for the quality of product support they provide their customers. Compared with last year, that score represented an improvement of 5 percent for GE and 1 percent for R-R. Williams took second place with 7.9 overall average (down 4 percent from last year), followed by a tie for fourth place between Honeywell (up 3 percent) and Pratt & Whitney Canada (down 1 percent), each with 7.8, ahead of CFE in fifth place with 7.7 (up 1 percent).

Honeywell leads the turboprop pack with a score of 7.8 (up 3 percent), narrowly edging Pratt & Whitney Canada off the pedestal and into second place with 7.7 (down 1 percent). Turbomeca (up 4 percent) takes third place with 7.3, narrowly ahead of Rolls-Royce (down 5 percent) in fourth.

In both categories of engine, every manufacturer scored in the sevens or eights, suggesting that all are doing a good job, for the most part, keeping their customers flying.

General Electric

GE says it has "reprioritized" its customer support improvement efforts around three pillars: enhancing the customer experience, ensuring rapid response and improving engine life-cycle value.

To build the first pillar, GE says that each of its customer reps has developed "deeper, more personalized relationships with customers and increased [frequency of] contact with them." It has introduced line maintenance training courses at more GE locations and has held training classes at several authorized service centers "to accommodate our global customers better." The company is shipping a CF34-3 to its new training facility in Doha, Qatar, for customer training in the Middle East, and has launched quarterly e-newsletters for business turboprop and business jet operators "to keep them informed about our business and to provide tips on how to reduce engine maintenance costs and enhance their operations."

In the ever challenging arena of rapid AOG response, GE Aviation claims to have resolved 90 percent of AOG events within four hours over the past 12 months—an achievement it attributes to better integration with the airframers and service centers. "Our authorized service center network has expanded to 48

facilities this year from 33 last year," notes Laura Schreiber, director of customer support, "including Premier Turbines as the M601 and H80 designated repair center for North and South America."

The volume of support calls that GE deals with has gone up by 52 percent, the increase stemming from "customers' becoming more aware of our support offerings and growth of the installed fleet," according to Schreiber.

Exchange engines are picked to be low-time and in the same general serial number range as the engine being replaced, thus allowing the operator to subscribe to only one maintenance plan rather than a different plan covering dissimilar engine combinations.

Rolls-Royce

Rolls-Royce introduced a project charter intended to drive improvements focused specifically on AOG responsiveness; expanding the customer field service experience with a growing global network of authorized service centers; and streamlining internal processes to improve worldwide customer communications, according to Andy Robinson, senior vice president for customer services for civil small and medium engines with Rolls-Royce North America.

For better AOG performance, R-R introduced a new smartphone app this year to help corporate aircraft customers locate Rolls-Royce regional customer managers anywhere in the world. "Our lease engine pool for all marks of the BR710 and the Tay engine has increased dramatically this year," says Robinson. "We have also established a regular fleet review to ensure we continue to increase the lease pool as the in-service fleet grows." BR725/710 and Tay part numbers stocked in North America grew an additional 58 percent this year, for an "excellent" fill rate of 97 percent. "We continue to review both the inventory and controls

and measures in place to ensure that we are able to sustain and forecast demand. Rolls-Royce unique parts inventory for the BR725 engine is now well established."

Rolls-Royce now accepts all major credit cards as payment for parts. "Shipping and handling of spare parts has also improved, with direct ordering and delivery available through the growing global network infrastructure, to significantly improve customer turnaround time."

Over the past year, the roster of authorized service centers for the AE3007A has expanded to include Constant Aviation in Cleveland, Ohio; Ruag Aviation in Oberpfaffenhofen, Germany; and Hawker Pacific Asia in Singapore. For the BR710 series, the new ASCs are Jet Aviation in St. Louis and Metrojet in Hong Kong.

"Keeping the pulse of the customer's perception of Rolls-Royce products and services is extremely important and at the same time challenging," notes Robinson. "We have developed new tools and strategies to ensure closed-loop communications with our customers, one example being the launch of MyAeroengine.com. We will also soon announce the creation of a Corporate Customer Council consisting of



Rolls-Royce Tay

customers of all corporate aircraft engine models. It is hoped the council will help to guide Rolls-Royce in further improving our products and services."

Recent enhancements to Rolls-Royce CorporateCare now include labor to replace specific line-replaceable units and scheduled borescope inspections required within Chapter 5 of the maintenance manual. "Continuous review of our CorporateCare infrastructure has resulted in further investments in shop capacity, lease engines and spare parts to meet and exceed the demands of a growing fleet," concludes Robinson.

Williams International

"We have made it easier for customers to get answers to routine questions

through our website, which keeps each customer's correspondence for their reference. A customer can easily retrieve answers to past questions or request new information 24 hours a day from any time zone in the world," according to Steve Shettler, v-p of product support. "We have enhanced the method for customers to request scheduled hot sections



Williams FJ44-3

or overhauls, and they can now monitor the progress of their engine throughout the maintenance cycle. This minimizes downtime because, for example, rental engines can be shipped in advance, and customers know when maintenance will be completed and their airplane will return to service."

For technical support, "We increased our hotline support this year to further reduce the time it takes customers to reach our tech reps."

Honeywell/CFE

Responding to its Global Customer Committee (GCC) advisory board, Honeywell says it is targeting AOG response time by improving TFE, CFE and HTF engine parts stocking levels and order processes and enhancing communication. The efforts include improving spare exchange pool performance globally with more stock and better on-time response for engines and engine parts, a move that it says has been aided by improved demand forecasting and increased investment in inventories. As an example, Honeywell says that its CFE joint venture with GE has worked hard for the past year to increase the availability of CFE738 bank engines to support fleet issues. "Comprehensive actions" were taken in multiple areas to expand CFE738 parts availability, increase engine repair and overhaul capacity and improve engine/parts planning. This has resulted in positive bank availability for the CFE738 since April this year, the company says.

As evidence of its quest for product performance and reliability, Honeywell cites introduction of the HTF7000 effusion-cooled combustor. "The significantly improved design results in lower



Honeywell HTF7000

component temperatures, which provides two or three times more durability while simultaneously reducing NOx emissions," a company spokesman told AIN. "This will allow operators to return to on-condition maintenance and relieve the need to schedule periodic combustor replacements."

In summary, Honeywell says it has further improved program management and execution and reduced the time to develop and release product improvements by 40 percent in the last 12 months.

Pratt & Whitney Canada

A new diagnostics tool, a dedicated new business unit and growing customer support in the Asia-Pacific region are among the improvements Pratt & Whitney Canada says its customer service organization has implemented during the past 12 months.

The Fast (flight data acquisition storage and transmission system) engine diagnostics tool, currently available on some PW150 and PW300 models, automatically acquires, stores and transmits engine and aircraft data for review and transmission to the customer when it is required. "Dispatch reliability is critical," says Raffaele Virgili, v-p for customer

service. "That's why we are steadily moving our customers toward a planned operating environment where maintenance can be synchronized with their schedule and downtime kept to an absolute minimum. As a one-stop application for managing all aircraft performance data, Fast represents a significant competitive advantage for these operators."

Virgili says Fast goes beyond traditional diagnostics, prognostics and trend monitoring in that it can also acquire, store and transmit data from the flight data recorder, thus allowing customers to review full FOQA (flight operational quality assurance) information. This integration of all performance metrics into a single hardware/software solution will strengthen the appeal of Fast, asserts Virgili, since it eliminates the need for scheduled manual downloads, saving both time and money. "Fast allows operators to plan their maintenance sessions in advance, taking advantage of overnight layovers, for example. And because the system provides early detection of minor issues, preventive maintenance can be conducted before dispatch availability is affected."

At service centers, P&WC continues to strengthen support in the Asia-Pacific region. During the Singapore Air Show this year, the company announced continued buildup of its customer service capabilities to serve the Asia-Pacific region from its operational hub in Singapore. The company is expanding its service team in the region with staff located in the same time zone as its customers. The Singapore operation has 15 new employees, including customer managers and engineers, CFirst event

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Above and beyond

This year, we asked AIN Product Support Survey participants to list their favorite support personnel and what they like about the service provided. Following are highlights from comments submitted about engine support personnel.

Dan Moog
CFE-Eastern Americas

We enjoy working with Dan when needed.

Ed Leadley
Honeywell-Eastern Americas

Ed Leadley is outstanding; he acts as a buffer and gets the work done...

Brian Harrington
JSSI-Chicago

Brian held my hand when I had a troubling problem with a couple of other vendors that were pointing the finger at him and his company. He calmed me down and let me know that JSSI would do the right thing, and it did.

William (Bill) Chappell

Pratt & Whitney Canada-Columbus, Ohio
Bill is very knowledgeable on his company's products, willing to share information to help us support those products and goes the extra mile to support his customers.

Marcelo Fonseca
Pratt & Whitney Canada-Montreal

Marcelo, a P&WC tech rep for the PW617F-E, has done an outstanding job.

Alex Lauly
Pratt & Whitney Canada-Brussels, Belgium
Always available and cooperative, looking for solutions.

2012 ENGINE MANUFACTURER RATINGS

	Overall Avg. 2012	Overall Avg. 2011	Ratings Change	Percent Change
TURBOFAN				
GE	8.0	7.6	0.4	5%
Rolls-Royce	8.0	7.9	0.1	1%
Williams	7.9	8.2	-0.3	-4%
Honeywell	7.8	7.6	0.2	3%
P&WC	7.8	7.9	-0.1	-1%
CFE	7.7	7.6	0.1	1%
TURBOPROP				
Honeywell	7.8	7.6	0.2	3%
P&WC	7.7	7.8	-0.1	-1%
Turbomeca	7.3	7.0	0.3	4%
Rolls-Royce	7.2	7.6	-0.4	-5%

*Ties ordered alphabetically by manufacturer.

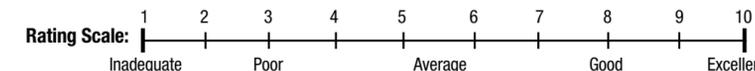
2012 ENGINE MODEL RATINGS (Companies are listed in order of their 2012 overall averages)

OEM	Turbofans	Overall Avg. 2012	Overall Avg. 2011	Ratings Change	Percent Change	Factory Service Centers	Authorized Service Centers	Parts Availability	Cost of Parts	AOG Response	Warranty Fulfillment	Technical Manuals	Technical Reps	Cost per hour programs	Overall Engine Reliability
TURBOFAN															
Rolls-Royce	AE3007	8.4	8.3	0.1	1%	8.6	8.4	8.7	7.5	8.6	8.6	8.1	8.1	7.7	9.1
Rolls-Royce	Tay	8.2	7.8	0.4	5%	8.3	8.4	8.7	6.7	8.6	8.5	7.0	8.4	7.3	9.5
GE	CF34	8.1	7.7	0.3	5%	7.7	7.8	8.2	6.7	8.6	8.3	7.9	8.3	7.6	9.3
Honeywell	HTF7000	8.0	8.0	0.0	0%	7.4	8.0	7.9	7.1	8.0	8.3	7.8	8.0	7.4	9.0
P&WC	PW600 series	7.9	8.1	-0.2	-2%	8.1	8.2	8.1	6.9	7.9	8.0	7.9	8.1	7.2	8.7
Williams	FJ44	7.9	8.2	-0.3	-4%	8.2	7.7	8.1	6.6	8.1	8.3	7.7	8.1	7.9	8.5
Honeywell	TFE731	7.8	7.6	0.2	3%	7.6	7.9	7.7	6.5	7.6	8.0	7.9	8.1	7.2	8.7
P&WC	PW300 series	7.8	8.0	-0.2	-3%	7.9	7.9	7.8	6.6	8.0	8.2	7.6	7.9	7.1	8.6
P&WC	CFE738	7.7	7.6	0.1	1%	7.8	7.9	7.2	5.9	8.0	7.6	7.9	8.3	7.4	8.6
P&WC	PW500 series	7.7	7.9	-0.2	-3%	8.0	7.7	7.9	6.0	7.9	8.1	7.6	8.0	6.9	8.6
Rolls-Royce	BR700 series	7.7	7.7	0.0	0%	7.9	7.9	7.8	5.8	7.8	8.0	7.1	8.0	7.1	9.2
P&WC	JT15D	7.5	7.5	0.0	0%	7.2	7.6	7.7	5.9	7.7	7.3	7.6	7.8	6.5	8.8
TURBOPROP															
Honeywell	TPE331 turboprop	7.9	7.7	0.2	3%	8.6	8.7	6.7	5.5	7.5	8.4	8.4	8.8	7.3	9.4
P&WC	PT6A turboprop	7.7	7.8	-0.1	-1%	7.7	7.7	8.0	6.1	7.7	7.3	7.9	7.9	6.8	9.1
P&WC	PT6T/B/C turboshaft	7.7	NA	NA	NA	7.8	7.7	7.6	6.2	7.7	7.9	7.7	7.8	7.5	9.0
P&WC	PW200 turboshaft	7.4	NA	NA	NA	6.1	6.5	7.7	6.2	7.6	7.3	7.5	8.2	6.4	8.7
Rolls-Royce	250 turboshaft	7.4	7.7	-0.3	-4%	7.2	7.5	6.7	5.4	7.2	7.6	7.6	8.2	7.9	8.6
Turbomeca	Arriel	7.2	NA	NA	NA	6.8	6.9	6.9	6.1	7.2	7.5	6.9	7.4	7.4	8.2

Bold indicates highest number in each category

Source: AIN 2012 Product Support Survey,

*Ties ordered alphabetically by manufacturer.



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managers providing front-line support and accessories specialists who support the full complement of P&WC engines in the region. These new employees are co-located with P&WC Southeast Asia (SEA), the company's repair and overhaul facility, opened in 1983, located in the Loyang Industrial Estate next to Singapore Changi Airport.

Pratt & Whitney Canada has more than 900 customers in the region operating some 5,600 engines. It also operates a parts distribution center in Singapore to serve the region. P&WC SEA provides repair and overhaul services for PW100s and APS3200 APUs and hot-section inspections for the PT6A, PT6B and PT6T. P&WC's expanded customer service capabilities provide support for the full complement of P&WC engines operating in the region.



P&WC PW150A

In North America, relocation of P&WC's parts distribution center (PDC) to Memphis, Tenn. (FedEx territory) allows customers to order parts until midnight EST for normal next-day delivery. This supports the manufacturer's objective of improving its return-to-service performance, which it says currently averages 24 hours for AOG support within North America. P&WC says it has made an 18-percent improvement in AOG support, while improving First Fill Rate over the last year. For the benefit of international customers, P&WC says it has revised the global parts stocking strategy for its worldwide PDCs (Singapore, Amsterdam and Sydney) to improve response time and AOG service in each region. Global AOG parts delivery performance, the company says, is less than two hours from customer request to parts shipment with P&WC's selected carrier.

"We're reaching significant milestones for our Eagle Service Plan maintenance program," added Virgili. The number of engines on ESP has nearly doubled in the past five years and is expected to reach 4,000 before the end of this year.

This summer P&WC also put in place a "new multidisciplinary and cross-functional PT6A business unit, dedicated to sustaining and expanding its already considerable presence in the general aviation market." P&WC's general aviation team "pulls together a group of

engineering, aftermarket and marketing professionals with the mandate of bringing new creative and innovative solutions to customers," according to Denis Parisien, P&WC v-p of general aviation.

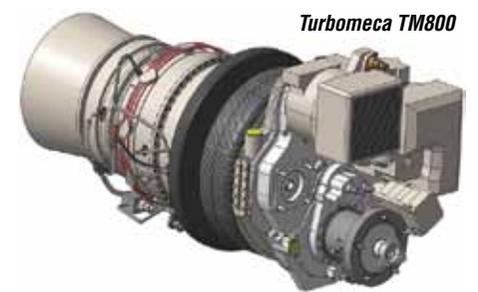
The new GA team arrives as the PT6 (next year) marks 50 years of service, during which it has captured more than 130 applications for helicopters and business, commuter, utility and trainer aircraft. Some 49,000 PT6s have logged 378 million flying hours, and in the last five years alone P&WC has certified seven new models of the venerable powerplant.

Turbomeca

The French engine manufacturer, part of Safran, says it has improved parts availability during the past 12 months, achieving 95 percent for pool service and 98 percent (shipped in less than 24 hours) for AOG. Ninety percent of parts categorized as level one and two are currently shipped on time, according to Turbomeca, against its goal of 95 percent this year.

The company has created Turbomeca Mexico and partnered with GTA in Malaysia, and says it has appointed 20 more authorized service centers worldwide. Through TBO extensions and improvements in MTBF, the company says it works continuously to reduce the direct operating costs of its engines.

Under the banner of "innovation," Turbomeca claims four achievements in



Turbomeca TM800

the past 12 months: a 25-percent boost in its "investment for the future" compared with the preceding 12 months; validation of the Ardiden 3's performance, including an 11-percent improvement in sfc over current engines; selection of the TM800 turboshaft for Eurocopter's X4 program; and the development of Boost "online integrated services." □

Correction:

In the Avionics Product Support Survey article published in AIN's September 2012 issue, we incorrectly listed some companies' places in the chart, due to ties in both the cockpit avionics and cabin avionics categories. Honeywell and Avidyne tied for fourth place, putting Bendix/King in fifth place. In cabin avionics, Rosen Avionics and Rockwell Collins tied for third place, moving Honeywell to fourth, Magnastar to fifth and Thorne & Thorne to sixth. ■