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MROs Adapt Strategies To Keep Aging Boeing 767s Flying

Keith Mwanalushi December 10, 2025

Boeing expects to conclude production of the 767 freighter commercial aircraft by 2027.

Credit: Boeing

More than four decades after its debut, the Boeing 767 remains crucial for cargo and some long-haul passenger operations. As airlines balance the costs of aging fleets with strong aftermarket backing, MRO providers and engine specialists are rethinking strategies to ensure the twinjet remains viable well into the 2030s.

Boeing plans to end 767 production in 2027, closing a chapter that began with United Airlines' inaugural 767-200 flight in September 1982. After 2027, the program will produce only the 767-2C commercial airframe, in support of the KC-46A tanker.

AGE-RELATED ISSUES

Even as production winds down, MRO and aftermarket providers plan to sustain support for passenger and cargo operators to ensure the 767 remains viable. Ascent Aviation Services in Arizona is addressing age-related fatigue and corrosion through advanced inspections, nondestructive testing and strategic maintenance planning. "We are helping operators maintain structural integrity, detect early damage and extend aircraft service life with maximum reliability and regulatory compliance," Kyle Olson, vice president for sales at Ascent, tells *Inside MRO*.

Parts availability, including structural material, is often a challenge for 767s later in their life cycle. Credit: Ascent Aviation Services

To address the challenges of aging hardware, MRO providers are diversifying their strategies for life-cycle support. For Pratt & Whitney PW4000-powered 767s, Florida-based engine MRO Pem-Air is combining used serviceable material (USM) sourcing, parts manufacturer approval (PMA) and designated engineering representative (DER) repairs, selective overhaul deferrals, and tailored maintenance programs.

According to Pem-Air CEO Virgil Pizer, market dynamics favor keeping freighters flying longer, whereas passenger 767s are steadily withdrawn as parts grow scarce and maintenance costs climb. “Smaller-to-midsize operators face a very different set of challenges when it comes to sustaining aging PW4000 engines on 767s,” Pizer notes.

Meanwhile, MTU Maintenance has aligned its General Electric CF6-80C2 support for 767 operators with a holistic, bespoke asset management solution, explains Nathalie Grochowski, senior manager of customer accounts for the CF6-80 at MTU Maintenance Hannover.

“It really comes down to the age of the individual engine when we are working out the optimal maintenance scheme with an operator,” Grochowski says. She notes that strong cooperation with airlines and engine operators is vital to achieving the best outcome.

MTU Maintenance provides life-cycle support for CF6-80C2 engines with programs tailored to distinct phases of operation. For mature engines, the SavePlus program focuses on controlling costs through selective repairs, tailored work scopes and serviceable used parts, along with options such as green-time leasing and exchanges. Predictive tools and planning help maintain reliability. As engines approach retirement, its ValuePlus program manages end-of-life management, including leasing remaining cycles, teardown at MTU’s CF6 facilities and redistribution of usable material. For engines earlier in their life cycle, MTU’s PerformPlus program aims to maximize flight hours and optimize maintenance decisions using fleet-planning software and life-limited part management, according to MTU.

PW4000 legacy engine components are increasingly scarce. Credit: Pem-Air

PARTS AVAILABILITY

Like in much of the aviation industry, challenges with parts availability for legacy fleets are extending to the 767. Allen Neufeld, senior director for business development and sales at Ascent Aviation Services, notes that several components are now on extended lead times due to reduced global production runs, supplier consolidation and prioritization of newer aircraft platforms.

“In some cases, OEMs and distributors are experiencing raw material shortages and longer manufacturing cycles, which can create bottlenecks in the supply chain,” Neufeld says. To mitigate these challenges, Ascent’s purchasing and materials management teams are taking a proactive approach. “We maintain close communication with our key suppliers to forecast demand more accurately and secure allocation well in advance of maintenance events,” he adds.

Ascent also has expanded its approved vendor base and established alternate sourcing strategies, including PMA and DER repair options where appropriate, while increasing its focus on strategic inventory planning.

Pem-Air reports that tightening parts availability is forcing changes to overhaul schedules for legacy PW4000 engines on 767s. The challenge is most acute for small and midsize operators managing aircraft that have been in service for over 40 years. “These operators don’t have the same depth of spares pools or leverage with OEMs as the largest carriers,” Pizer says, noting that every delay in sourcing turbine blades, bearings or combustor liners can ripple through their operations.

Pizer says OEM production has largely shifted toward newer platforms like the Pratt & Whitney geared turbofan and CFM International Leap, which means PW4000 legacy components are increasingly scarce. To keep these fleets viable, Pem-Air has leaned heavily on USM from retired aircraft and on PMA and DER solutions that stabilize supply and reduce costs.

“For smaller operators, the reality is that overhaul schedules are no longer dictated purely by cycles or hours—they are dictated by what parts can actually be sourced,” Pizer says. Notably, Pem-Air has partnered with aftermarket suppliers to ensure that high-demand hot-section components, such as high-pressure turbine blades, remain accessible.

Grochowski asserts that overhaul scheduling is primarily aligned with an airline’s strategy, meaning parts availability is not always the decisive factor for CF6-80s approaching retirement. “The OEM itself sets the technical intervals at which maintenance has to occur, and the operato · then plans around those,” she says.

Grochowski stresses that the CF6-80C2 has not yet entered its sunset phase. When retirement looms, MTU plans to leverage past program expertise, including teardowns that combine usable parts from multiple engines into one.

PREDICTIVE ANALYTICS

Gathering and analyzing engine performance data is now critical to shaping effective maintenance strategies. MTU applies its engine trend monitoring software to track how engines respond to varying environmental conditions and the resulting wear patterns.

Grochowski explains that the more accurately MTU can anticipate scrap rates before a shop visit, the better it can forecast needs and secure materials in advance. “The advantage is that it makes shop visit planning and preparation smoother, and costs are potentially more predictable, too,” she says.

At Pem-Air, digital health monitoring allows the company to move away from rigid, calendar-based overhaul intervals and instead rely on condition-based triggers, Pizer says. This approach enables Pem-Air to delay shop visits until genuine wear signs emerge, reducing life-cycle costs while keeping aircraft safely in service longer.

Pem-Air has invested in systems that capture and transmit engine performance data quickly, enabling near real-time decisions about whether an engine can remain on wing or requires intervention.

Pizer says early detection of issues like oil-wetted component wear and exhaust gas temperature margin loss allows smaller operators to plan shop visits proactively, aligning maintenance with operational needs instead of reacting to emergency situations. “We are also using predictive insights to spot vibration signatures and fuel burn drift, which helps extend time on wing even as hardware ages,” he adds.

PMAs TO THE RESCUE?

Pem-Air says affordable retrofits and PMA parts are critical to keeping PW4000-powered 767s in service. For small and midsize operators, these measures often determine whether the aircraft remains viable or faces early retirement.

“For our customers, guaranteed availability of PMA high-pressure turbine blades means less exposure to unpredictable lead times and more confidence in planning shop visits,” Pizer notes. Additionally, Pem-Air supports Phase III and ring case modifications for the PW4000-94, which, Pizer says, have proven to improve compressor durability, reduce surge risk and extend overhaul intervals.

Beyond blades and compressors, Pizer mentions the implementation of PMA and DER repairs for vanes, combustor liners and seals, which can reduce material costs 20-40%, based on internal data, while maintaining FAA and European Union Aviation Safety Agency compliance.

CARGO ADAPTATIONS

Mike Scott, senior director of sales at Ascent Aviation Services, expects 767 cargo operations to continue for at least another 20 years and anticipates that each airline will tailor its maintenance planning document program based on its flying characteristics, OEM specifications and the local civil aviation authority’s protocols.

Scott notes that converting these aircraft from passenger to cargo service does not alter maintenance or inspection standards. He emphasizes that airlines may adopt different strategies based on cargo type, operating environments and seasonal market demands to allocate downtime effectively within their maintenance check schedules.

Scott predicts that as OEMs reduce the supply of surplus material later in the life cycle, operators will increasingly turn to aftermarket providers for USM. “The availability of used material will be critical to keep these aircraft flying for two more decades and to keep the maintenance costs under control,” he says.

BOEING 767 MTU MAINTENANCE PARTS MANUFACTURER APPROVAL (PMA) PRATT & WHITNEY PW4000