

ERJ Auxiliary Power Units: Why Outsource Repair Management?



Like other auxiliary power units (APUs), the ERJ C11 and C14 are commonly removed for unscheduled maintenance, rather than when the life-limited parts (LLPs) cycle out. Although shop visits can be scheduled for LLP events, on-wing failures can happen at any time, making it difficult to anticipate and budget for APU repairs. To help ensure predictability, you can team up with a third-party provider who will manage all aspects of the ERJ APU repair process. In this article, we explain the benefits, costs, and turnaround times for outsourcing repair management.

Why Choose an ERJ APU Repair Management Provider?

Third-party providers manage the entire APU repair process and offer the following benefits:

- Lower costs
- Available inventory
- Advance exchanges
- Reduced turnaround time

We recommend working with one specific provider for all your APU repair management needs. Trying to work with multiple repair vendors and third-party providers, or hoping a vendor will have an exchange unit available, can be overwhelming and produce inconsistent results. With one provider, there is more consistency in turnaround times and more customer buying power, often resulting in lower and more predictable costs.

ERJ APU Repair Costs

ERJ APU repair costs vary based on the



condition of the unit and whether LLPs require repair or replacement.

APUs, where the general condition is good but has been removed for inspection, may cost less than \$150,000. Units requiring extensive repairs and replacements of LLPs or housing may exceed \$300,000. The average is typically around \$250,000.

Operators can expect a 10% savings in repair costs when working with a third-party provider.

Third-Party ERJ APU Inventory

Some third-party providers have sizable

inventories of APUs and their components, including turbine wheels (T-wheels) and compressor impellers. First, this allows providers to offer APU exchanges to operators, reducing turnaround time. Second, providers can supply the necessary replacement piece parts to repair vendors, further reducing turnaround time and repair costs.

ERJ APU Advance Exchanges

If a third-party provider offers an APU on exchange, it can significantly reduce turnaround time but will cost more than repairs. Exchanges generally cost \$15,000 to \$25,000 *more* than repairs and can be transacted as a flat-rate or

WHY OUTSOURCE ERJ APU OVERHAULS?

LOWER COSTS

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AVAILABLE INVENTORY

Some third-party providers have sizeable inventories of APUs and their components, which can assist with reducing turnaround times and repair costs

LANDING GEAR EXCHANGES

Third-party providers with APU inventory can also offer exchanges

REDUCED TURNAROUND TIME

A third-party provider with adequate piece parts inventory may reduce turnaround times to approximately 60 days



cost-plus exchange. The exact cost will vary depending on the vendor and number of cycles remaining on the LLPs.

ERJ APU Repair Turnaround Time

Repair vendor turnaround times are generally 90-120 days or longer, depending on extended lead times on some parts, such as the T-wheel. In comparison, a third-party provider with an adequate piece parts inventory may shorten turnaround times to approximately 60 days.

How Often Does an ERJ APU Require a Shop Visit?

ERJ APUs usually require a shop visit after an on-wing failure (e.g., if the unit suddenly produces less power) or when the LLPs in the unit cycle out.

On-wing failures, also known as unscheduled removals, average 5,000 cycles between shop visits, according to reports from the OEM.

LLPs include the T-wheel and compressor impeller, which require replacement after a set number of cycles since new (CSN). On the C11 APU, both the T-wheel and compressor impeller are replaced after 8,000 CSN. On the C14 model, the T-wheel is replaced after 15,000 CSN and the compressor impeller after 30,000 CSN.

Unplanned maintenance can happen if the unit is damaged. To mitigate damage, ensure that LLPs do not exceed their life limits. Also, turn off the APU when not needed to reduce the chances of foreign object debris (FOD) from being sucked into the unit and to lessen the amount of wear and tear on the unit.

What are Long-Term APU Support Programs?

Some third parties have long-term support programs for APU repair management, offering support based on an hourly or cycle rate. These may be Power-By-the-Hour (PBH) or cost per cycle programs.

Operators with fleet sizes of 5 or more aircraft may benefit from long-term APU support programs.

Concluding Thoughts: Preparing for an ERJ APU Repair

Although it is rare to schedule APU repairs in advance, you can work with a third-party provider and/or repair vendor ahead of time to establish an agreement for handling the repairs and having a budget in place. An agreement ensures that costs will be more predictable and easier to budget while ensuring replacements or exchanges are available whenever APU repairs are required.

