



# SBs AND ADs TODAY



## TIPS ON MANAGING MAINTENANCE DEMANDS

**Service Bulletins (SBs) and Airworthiness Directives (ADs) are part and parcel of an aircraft's life but require careful planning and execution. What factors do aircraft owners need to consider? Industry experts explain to Gerrard Cowan what the key challenges and opportunities are...**

**T**here are of course key differences between SBs and ADs that affect an operator's approach to both. Stephan Krainer, CEO of PRIMUS AVIA clarifies that ADs are mandatory requirements issued by aviation authorities. Compliance within the specified timeframe is essential, with failure to do so resulting in the aircraft losing its airworthiness status.

"In some cases, this may necessitate taking the aircraft out of service independently of scheduled maintenance," he highlights. "However, with careful planning, such disruptions can often be avoided."

By contrast, SBs are issued by the manufacturer and are generally not compulsory within a set period. They're used to communicate a wide range of updates or modifications, many of which don't relate directly to safety but might address performance enhancements, operational improvements or other changes.

Even so, "certain SBs may be covered under warranty or offered free of charge for a limited time, making it worthwhile to consider interrupting operations to take advantage of the benefits," Krainer explains.

Business aircraft owners should strive to integrate SBs and ADs into their maintenance planning as efficiently as possible, he stresses. "Typically, these directives come

with a defined compliance window, allowing owners to schedule the necessary work during routine maintenance periods, without disrupting normal operations."

### An Evolving Maintenance Landscape

With that in mind, how has the nature of such work evolved in recent years? According to Krainer, changes are most evident with modern engines, where ADs have become quite rare "reflecting significant advances in reliability and design".

Mike Saathoff, Director of Sales Operations for Maintenance Sales & Estimating at Elliott Aviation, says the character of ADs and SBs has shifted alongside broader changes in Business Aviation technology. "Aircraft today incorporate more digital systems, which has led to a rise in software-related directives and bulletins," he explains.

"Configuration control issues, software update requirements, and avionics integrations now represent a larger share of compliance activity than they did a decade ago."

At the same time, the industry continues to give close attention to aging structures and legacy fleets, meaning that structural inspections and fatigue-related directives remain a consistent feature of work related to ADs and SBs. →→→



New connectivity systems have also introduced fresh compliance considerations, particularly as operators integrate high-bandwidth satcom and data-driven avionics into existing airframes.

“While mature mechanical systems tend to generate fewer new directives, emerging digital architectures are creating a different kind of compliance responsibility that operators must manage carefully.”

Business aircraft owners should view SBs and ADs as long-term components of an aircraft’s maintenance life, Saathoff adds, not isolated tasks that sit outside the wider upkeep plan.

In most cases, the most efficient approach is to align SB and AD compliance with scheduled maintenance events, which reduces downtime, limits operational disruption, and allows the maintenance provider to manage staffing needs, parts availability and documentation in a coordinated way.

“We advise operators to fold non-urgent SBs and AD – depending on the AD compliance requirements, as they are not optional – into the next major inspection or maintenance cycle whenever the compliance window allows,” Saathoff says. “The result is a smoother maintenance flow and a clearer forecast of cost and downtime.”



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Michael Axtmann, Managing Director of FAI Technik, says his company has also seen a notable decrease in traditional mechanical or structural ADs or SBs, due largely to improvements in materials, engine reliability, and real-time health monitoring systems, which reduce unexpected failures.

At the same time, there has been a clear increase in directives related to software, avionics and connectivity, including cybersecurity patches, Full Authority Digital Engine Control (FADEC) firmware, safety measures around lithium-ion batteries, and similar modern requirements.

#### Proactive Service Bulletin/ Airworthiness Directive Planning Essential

While business aircraft owners should plan for ADs to be accomplished at the next suitable inspection interval (if this is allowed by the compliance deadline), ADs that address urgent safety concerns should be completed earlier, Axtmann advises.

SBs are generally optional and can efficiently be incorporated into major planned downtime, reducing labor demands and downtime, and helping maintain aircraft reliability and resale value. Still, this demands proactive planning and close coordination with the maintenance provider.

Additionally, some SBs – particularly any involving safety matters, known failure modes, or avionics/software updates affecting operational approval – should be completed promptly and not deferred.

“SBs requiring specialized tooling, engineering approval, or long lead-time components may also be better handled as stand-alone projects to avoid disrupting scheduled maintenance,” Axtmann suggests.

In rare circumstances it could even be counterproductive to combine different tasks, he adds. For example, if an AD requires specialized



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equipment or expertise that isn't typically available during standard inspections, scheduling it separately might be more efficient.

"Likewise, some avionics or cabin upgrades involve extended downtime and dedicated project management, making them unsuitable for short inspection slots."

Nevertheless, generally speaking, packaging upgrades with 12-, 24-, or 60-month events avoids unnecessary disassembly and reduces the number of maintenance events, says Michael Hoby Andersen, Partner at Altea.

Of course, this isn't always possible, he admits. "Avionics software updates, cybersecurity improvements, or structural inspections requiring specialized engineering oversight are examples where standalone planning may be more efficient and ensure higher-quality compliance."

He also points to growing demand for software-driven SBs and ADs, while cabin connectivity is a significant priority as "operators move toward next-generation solutions such as Starlink or high-bandwidth satcom systems. In short, mechanical issues are declining, while digital and integration-related updates are increasing."

Mark Steinbeck, Chief Commercial Officer – JSSI Traxxall, says aircraft owners and operators can use specialized tools to align SBs and ADs with scheduled maintenance events – such as a maintenance tracking system like Traxxall.

"Doing so can minimize aircraft downtime while allowing the maintenance facility sufficient time to ensure that all required parts, tooling, and equipment are readily available."

Seasonality of aircraft utilization is another critical consideration, he notes. For example, an aircraft operating under a charter certificate in a region with 



heightened demand during the fall may benefit from scheduling maintenance ahead of the peak season.

They might also choose to perform upgrades during the winter months, when utilization typically declines. "Strategic planning in this manner helps balance regulatory compliance with operational efficiency and revenue preservation."

Some tasks aren't well-suited to being combined with other work, Steinbeck adds. "We evaluate each item individually and recommend a scheduling strategy

that limits operational risk rather than simply consolidating everything into a single slot."

#### **A Structured Approach to AD & SB Maintenance Work**

Maintenance planning in relation to SBs and ADs is a complex discipline "and comprehensive volumes have been written on the topic," Axtmann notes. A structured approach is essential.

"This includes maintaining a clear compliance calendar with all relevant deadlines, engaging early with OEMs



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and MROs, and ensuring timely availability of required parts."

Digital fleet-management tools should be used to integrate regulatory obligations with operational schedules, he adds. "It is also important to reserve financial resources for unexpected directives that may arise outside planned maintenance windows."

Treating SBs and ADs as an integral element of lifecycle planning provides a solid foundation for safety, asset preservation and consistent operational readiness, Axtmann says.

"By working closely with their CAMO/MRO, forecasting downtime and parts availability early, and aligning discretionary SBs with major inspections, operators can avoid unscheduled groundings, control costs, and maintain high dispatch reliability and asset value."

Effective planning begins with visibility, according to Saathoff, and operators should maintain a clear and accurate compliance record that tracks AD due dates, SB applicability and revision charges. This will allow owners to identify items that can be bundled into scheduled downtime and those that require separate attention.

Early engagement with the MRO provider is equally important, he adds. "Sharing operational constraints and downtime preferences well in advance gives the provider the opportunity to coordinate the necessary parts, engineering support, and labor."

Owners should budget for unexpected findings, says Saathoff, particularly when compliance work requires extensive access or system checks. →

And documentation discipline is essential, he notes, both for regulatory purposes and long-term resale value. He reveals that many operators ask Elliott Aviation to monitor SBs and ADs on their behalf to ensure that nothing is missed and that the aircraft "remains aligned with OEM and regulatory expectations".

Krainer reckons the key is to work with an approved and independent Continuing Airworthiness Management Organization (CAMO) that can track, plan and coordinate compliance activities.

He agrees that it is crucial to document everything and to stay informed to stay ahead of upcoming requirements. This, he says, can be achieved by regularly monitoring manufacturer communications and regulatory updates.

"Budget for unscheduled work – set aside contingency funds and time for urgent directives that may arise unexpectedly," Krainer summarizes.

#### Technical Oversight of ADs & SBs

Effective planning begins with strong technical oversight, Andersen asserts. Enrolling the aircraft in a maintenance tracking program helps to ensure timely visibility of new SBs and ADs, he adds, while beyond digital tracking, expert guidance is essential.

Finally, operators should always align AD and SB planning with their mission profile and aircraft usage, Andersen says. Long-range or remote operations demand conservative scheduling to avoid last-minute compliance issues.

"SBs and ADs are a natural part of aircraft ownership, but managing them wisely is key to safety, reliability and resale value," Andersen concludes.

"With thoughtful planning, technical expertise and a long-term maintenance strategy, today's business aircraft owners can stay ahead of regulatory requirements while keeping downtime to a minimum." ■

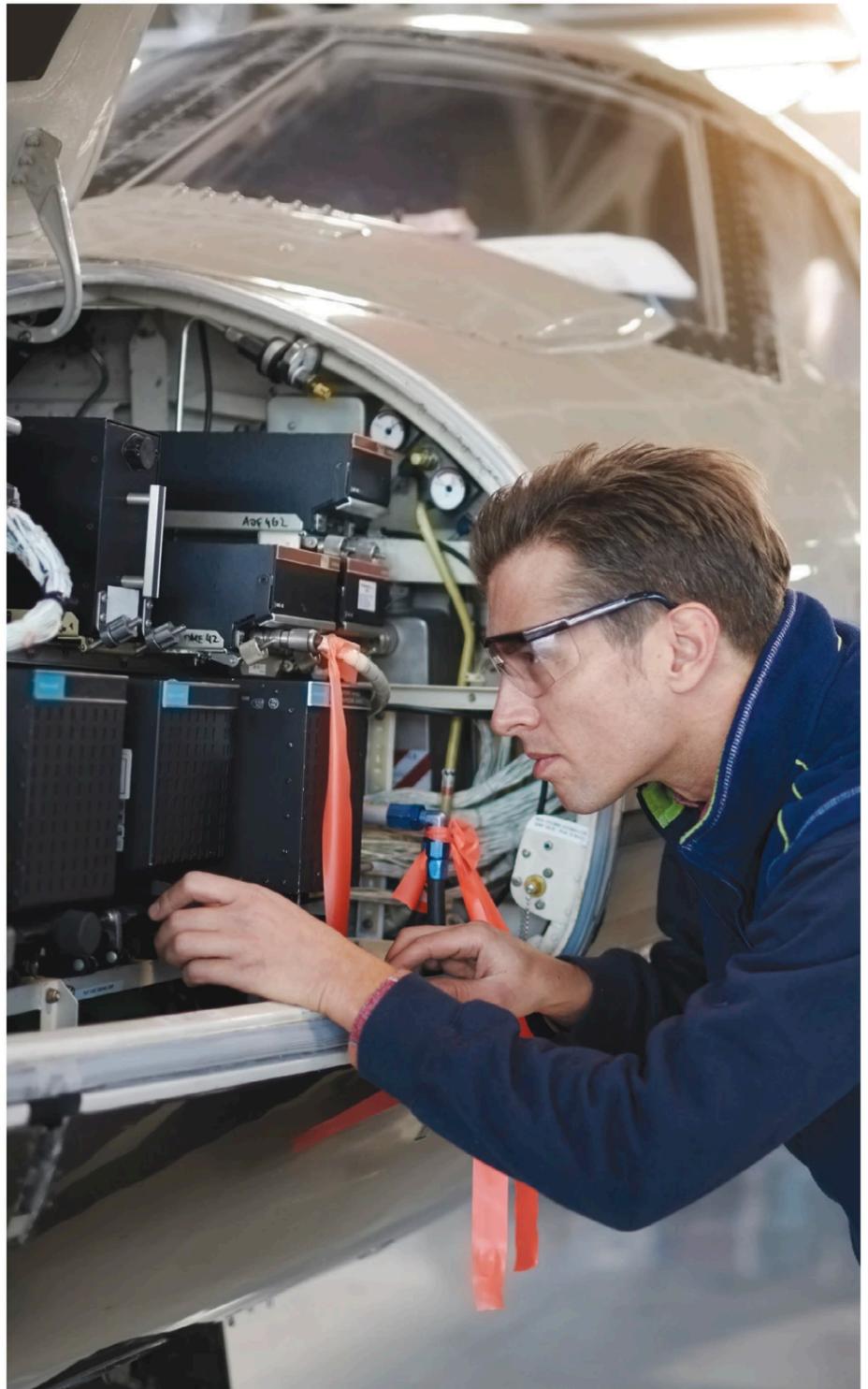
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