

All About ADs!

And How You Can Get Involved

One key concept in risk management is to base safety decisions on data, as much as possible, rather than relying on subjective judgment. The phrase “as much as possible” is important because this effort is often limited by the availability of data needed to assess risk. In other words, the more data the FAA has on a particular issue, the more accurately we can identify the risk associated with that issue, and the better safety decisions we can make.

The GA community plays a huge role in this by providing the information we need; it’s what makes the risk management process effective. This is particularly true in the decision-making process for developing Airworthiness Directives (ADs). An AD is a legally enforceable regulation issued by the FAA in accordance with 14 CFR part 39 to correct an unsafe condition in a product that is likely to exist or

develop in products of the same type decision. The information provided by the public can lead us to make the best possible safety decisions about what might (or might not) go into an AD.

But we could always use more information. If you have ever thought about getting involved in this capacity, there are a few great opportunities for you to do so. The Service Difficulty Reporting (SDR) system and the AD public comment process are two, and for small airplane issues, there is an additional chance to provide feedback through airworthiness concern sheets (ACS). All of these are important interfaces where your feedback can have a significant impact on FAA’s assessment of safety issues.

When it comes to soliciting public input, Earl Lawrence, manager of the Small Airplane Directorate, emphasizes that, “By providing more feedback,

Photo by Tom Hoffmann



the public enables the FAA to provide more focused corrective actions or recommendations with fewer or less-restrictive ADs.”

Need Da Info!

Information entered into the SDR system is reviewed by FAA engineers when evaluating potential safety issues. Information can be submitted (or reviewed) here: <http://av-info.faa.gov/sdrx>. Entering data into the SDR system does not necessarily mean the FAA will issue an AD. In fact, the SDR data can highlight service issues that can be caught early — during normal inspections — *before* they pose a significant safety impact. If we rely only on data that comes from accidents, we miss an important part of the safety story where issues are identified and addressed preemptively during normal maintenance.

When analyzing SDR data, there are two components of risk assessed in FAA’s risk management process. The first is: What is the “likelihood” of the event occurring? This includes a look at the affected fleet size and the number of years/hours of service over which failures have occurred. The second is: What is the “severity” of the event? This one takes into account the outcome or result of the event. Engineers consider if there was an accident with injuries or damage to the aircraft, or if the issue was found during normal inspections.

Risk analysis methods applied by FAA engineers account for the severity of events by classifying them based on their outcome. Events that lead to injuries or significant damage to the aircraft are classified at higher levels of risk than those that do not. Most events do not cause injuries or significant damage, and FAA engineers consider this when evaluating risk.

However, they can only include events when they are aware of them. Such information may indicate that existing inspections are identifying issues before they reach a point where they impact safety. Bob Busto, a Continued Operational Safety manager at the Wichita Aircraft Certification Office emphasizes, “It is important for the public to know that FAA engineers consider *all* aspects of the information entered in the SDR system, including the final outcome.”

SDR submitters often have valuable first-hand knowledge or insight that can help to better understand the nature of an issue. Some things to consider when inputting data are:

- What caused the problem?

- How it can be addressed?
- What was the result (outcome) of the service difficulty?
- What was the service history of affected parts (age, cycles, usage, environment, etc)?
- Are there any patterns the submitter has seen with other related service difficulties?

Being as specific as possible when inputting data can make all the difference in rendering the most positive outcome. The old adage “garbage in, garbage out” comes to mind here, so be careful what you input!

Another great way the GA community can get involved in the AD decision-making process is when the FAA issues airworthiness concern sheets for small airplanes. The ACS process takes place before the FAA initiates steps leading up to an AD for small airplane products, except in the case of emergency safety situations, which are very rare.

The FAA issues an ACS requesting feedback from the community, and distributes them to associations and organizations that can help reach an audience that may have valuable knowledge or experience related to the concern. Distribution includes aviation organizations/associations such as the Aircraft Owners and Pilots Association (AOPA) and Experimental Aircraft Association (EAA). ACS distribution also includes affected manufacturers, as well as type clubs for specific small airplane models. Type clubs are an important source for information as they provide an additional conduit to type-specific audiences with knowledge or experience germane to the potential safety concern.

Each of these organizations may handle the ACS distribution differently, and each may have a different approach to routing GA community feedback back to the FAA. In all cases, though, the common goal is to encourage the public to help the FAA make well informed safety decisions.

So Then What Happens?

The FAA’s goal is to mandate ADs to address safety issues only when the level of risk is unacceptable, while avoiding mandatory corrective actions in situations where they are not warranted. In some cases, actions such as a special airworthiness information bulletins (SAIBs) may be more appropriate to raise public awareness of a concern, or to recommend voluntary actions. These SAIBs can be an effective means to address issues early before they rise to a level of risk that requires the mandatory corrective action of an AD.



Photos by Tom Hoffmann

The information provided to the FAA is considered by a panel of experts from multiple technical backgrounds, known as a Corrective Action Review Board (CARB). The CARB panel discussion is not unique to small airplane products; it is used for all aviation products. It includes engineers, inspectors, pilots, and managers, as needed, to provide thorough consideration of each issue.

The CARB considers all of the data available, to include pertinent SDR data, and, for small airplane issues, the feedback received through the ACS process. After discussing relevant information, the CARB makes recommendations about what actions to take. If they do recommend AD action, the recommendation is then processed through the appropriate offices and management personnel until a final decision is reached.

AD actions may be initiated as a “notice of proposed rulemaking (NPRM)” followed by a public comment period and eventually a final rule, if appropriate. In some cases, the risk assessment may lead us to issue an action as a “final rule; request for comments.” This means the rule is effective prior to completing a comment period. In both cases, however, there is an opportunity for you to comment and the FAA must consider and address all public comments.

There are several ways to provide comments to AD actions (NPRM and “final rule; request for comments”). The first is to enter a comment directly into the docket by searching and locating the docket number on the Internet at www.regulations.gov and following the online instructions for submitting a comment. The public may also mail or hand deliver their comments for a specific AD action to the Docket Management Facility at U.S. Department of Transportation, Docket Operations, M 30, West Building Ground Floor, Room W12 140, 1200 New Jersey Avenue SE., Washington, DC 20590. Lastly, comments may be faxed to the Docket Management Facility using fax number (202) 493-2251.

Need an Example?

Circuit breaker switches serve as a great, recent example where information received through SDR reports and ACS feedback was an important factor in an FAA decision *not* to issue an AD. The data gathered helped to provide the FAA with a better understanding of the “severity” outcomes that resulted from different circuit breaker switch failure incidents. Previous mandatory AD actions addressed failures that caused smoke or fire in the cockpit and though there were continued SDR reports for circuit breaker switches, the reports indicated that the actions we had already taken to address the risk of smoke and fire were working.

ACS feedback for this issue was also very significant. In this example, the American Bonanza Society compiled 51 individual responses from its members and provided feedback to the FAA. Based on a combination of these responses and SDR reports, the agency determined the hazard associated with recent failures was a level of risk that did not yet warrant AD action.

Team Risk Management

It is important to note that FAA safety decisions are never made by just one individual. Whether through SDR reports, ACS feedback, or public comments to NPRMs/FRCs, public information about potential safety hazards is a valuable resource for the FAA, and ultimately for the GA community. We encourage everyone to take advantage of these opportunities to provide feedback. You are the ones with direct hands-on experience, and your insight is essential for us to make the best possible safety decisions. The more we know, the better we can reach our common goal of improving safety. ✈️

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