

Nuts, Bolts, and Electrons

Understanding the Service Difficulty Reporting System *What Can SDRS Do for You?*

You are an AMT performing a routine annual inspection on a Cessna 172S. You suddenly discover a few flat spots on the aileron control cable. Using a rag, you snag some frayed wires around those spots, which indicate broken cable strands. Upon closer inspection, you discover some of the pulleys are causing the problem by not allowing the cables to roll properly. With the cables and pulleys replaced and operating properly, the job is done, right?

Not really. There is one more step you can take that will help alert other operators to the safety issue you discovered: submitting a Service Difficulty Report (SDR).

Since 1966, through the SDR system (or SDRS) FAA has collected data on failed aircraft parts and components. This reporting program has successfully improved safety for aircraft systems and components in the United States and around the world. By providing a communication link between FAA and the aviation community on specific aircraft mechanical issues, SDRS enables implementing corrective actions before there is an adverse impact on safety.

How Does SDRS Work?

The primary sources of this information include front-line mechanics, aircraft owners, and pilots, whose vigilant actions and attention to detail during inspections and repairs help assure mechanical reliability. The backbone of the system is the SDRS database maintained by FAA's Aviation Data Systems Branch in Oklahoma City. This database gets information from FAA Form 8010-4, Malfunction or Defect Report, commonly known as an SDR. SDRs should be filed whenever a system, component, or part of an aircraft, powerplant, propeller, or appliance fails to function in a normal manner. SDRs are also intended to collect information on flaws or defects that impair a part's proper function.

While paper versions of the form are accepted, FAA encourages the use of the online form available through the Internet Service Difficulty Reporting (iSDR) Web site (<http://av-info.faa.gov/>

[sdrx/](#)). The iSDR site is more convenient to use and also provides a quicker method to report issues and solutions.

The FAA receives and uploads more than 80,000 SDR records each year. Even so, "the program is still underutilized," says FAA's SDRS Program Manager Pennie Thompson. She notes that only about 25 percent of reports are submitted by general aviation operators. "If embraced by the public and used properly, SDRs can be one of the most effective aviation safety tools available. Every report submitted helps identify potential problem areas, and alerts others to be on the lookout."

According to Thompson, future SDR development holds the key to the program's increased usage and effectiveness. Plans are underway to rebuild the database, which will provide more robust search and reporting capabilities. Also in the works is a revamped Web site aimed at providing a more streamlined and user-friendly interface, as well as a change in how SDR information is disseminated to the public. By leveraging the latest in mobile and social networking technology, you will be able to sign up for e-mail updates and/or "tweets" for any SDR that may affect your aircraft. As they say, "Stay tuned."

Who Uses the Data?

Nearly everyone in the aviation community, from NTSB to air carriers and GA operators worldwide, has an interest in the SDR program's information. Airmen can search the online database for items that may need special attention (especially if the aircraft logbooks are incomplete) or to identify past difficulties with a specific aircraft make or model. Queries can be refined by aircraft type, engine model, part number, or simply by a description of the problem. Click "Search Reports" from the main iSDR site to see a full list of query options.

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Photo by Tom Hoffmann

The FAA also uses SDR data to analyze aircraft safety implications and to identify trends that may not be apparent regionally or to individual operators. Based on that information, the FAA may adopt new regulations or issue airworthiness directives (ADs) to address a specific problem. SDR information also helps FAA aircraft certification offices and product manufacturers evaluate the integrity and reliability of a product design as well as to track whether safety critical items break before they should.

Maintenance Alerts

One of the most visible products of SDR data is the Aviation Maintenance Alert (AC 43-16A), frequently highlighted in *FAA Safety Briefing*. Aviation Maintenance Alerts, updated monthly on www.faa.gov, provides the aviation community with a snapshot of the latest aircraft service difficulty information. A quick glance at any of these reports, which often include detailed photos, reveals the ubiquitous and random nature of aviation maintenance problems. Whether as subtle as a small crack found in a crankshaft, or as obvious as improperly-installed hardware on a flight-control component, the results often have catastrophic potential. Moreover, the pictures are proof that those things you think will never happen to you really do happen.

For example, let's look at a report on cracked magneto rotor gears submitted by a mechanic in the June 2010 Aviation Maintenance Alerts. Prior to re-

assembly of two Slick magnetos, the mechanic noticed numerous cracks on both magneto rotor gears. He found similar cracks on two new gears. This issue triggered a defect report to the parts manufacturer and underscores the fact that even brand new parts and components must always be inspected.

Remember to Submit

Over the years the SDR program has had an enormous impact on the aviation industry and has led to improvements in the design and maintainability of several aircraft and aircraft products.

Whether you are a mechanic, inspector, or pilot, you are the eyes of continued airworthiness and have an opportunity to improve safety every time you discover a problem. By submitting SDRs, you provide potentially life-saving data and become integral to preventing accidents.

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For More Information

FAA Aviation Maintenance Alerts

http://www.faa.gov/aircraft/safety/alerts/aviation_maintenance/

General Aviation SDR Submission Report

<http://av-info.faa.gov/SDRX/SubmissionsGeneralAviation.aspx>

SDR Search Page

<http://av-info.faa.gov/SDRX/Query.aspx>