



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: June 3, 1993

In reply refer to: A-93-61 through -64

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The Federal Aviation Administration's Service Difficulty Reporting (SDR) program is often used during aviation accident/incident investigations to research the history of aircraft failures, malfunctions, and defects. However, attempts to effectively use the SDR data base in recent Safety Board investigations have revealed that the current program is incomplete and of limited value in identifying accurate service defect histories because many reportable service difficulties are not reported to the FAA.

This situation was identified during the Board's investigation of an accident involving the failure of a Cessna 208 landing gear shimmy damper and cracking of the engine/nose gear mounting structure. The FAA SDR data revealed only two reports of engine mount cracking and no prior reports of shimmy damper failure; however, data supplied by the airplane manufacturer showed 17 reports of engine mount cracking and 250 reports of shimmy damper failure.

The Safety Board's investigation of a Trans World Airlines (TWA) L-1011 accident in New York in 1992 also demonstrated the inadequacy of the SDR system. A search of the FAA's SDR data base revealed two reports of stall warning system failures on L-1011 airplanes. Fourteen additional L-1011 stall warning failures were identified by Lockheed, and ten more by TWA. None of these incidents was found in the FAA's SDR data base.

The Safety Board is not alone in its concern about the adequacy of the SDR program. The International Airworthiness Communications Working Group (IACWG) was formed in 1989 to improve the reporting and analysis of safety-related operational data from air carriers. In addition, at the request of the Aviation Subcommittee of the Senate Committee on Commerce, Science, and Transportation, the General Accounting Office (GAO) evaluated the effectiveness of the SDR program involving large, scheduled airliners. The March 1991 GAO report, "Changes Needed in FAA's Service Difficulty Reporting Program," reflected discussions with FAA and

airline personnel and the review of approximately 24,000 SDRs submitted by scheduled airlines during 1987 to 1989.

The GAO and the IACWG detailed many shortcomings of the SDR system. Their findings included the following:

- (1) The SDR system only contains a small percentage of the actual occurrences;
- (2) Vagueness in reporting requirements and airlines' concerns about public access to SDR data contribute to low SDR reporting;
- (3) Doubt about the system's capabilities and effectiveness has discouraged SDR reporters, users, and analysts;
- (4) The service and safety data maintained by manufacturers are more useful, comprehensive, and timely than the FAA's SDR data;
- (5) FAA analysis of SDRs occurs rarely or not at all; and
- (6) FAA staff limitations and management inattention contribute to SDR program ineffectiveness.

To date, the IACWG has taken several steps to update and clarify the required reporting items. The working group has also recommended that the airlines be allowed to electronically submit SDRs and to access the data base. The Safety Board is encouraged by the efforts of the IACWG and the benefits of electronic SDR submission because they should result in more standardization in the reporting of appropriate incidents and allow more prompt analysis and follow-up action by the FAA.

In responding to the GAO recommendations, the FAA has stated that it will continue to manage the SDR program. Unfortunately, as the GAO notes, many of the SDR program policies and procedures that were established by FAA Order 8010.2 no longer exist. The Board believes that the FAA, in managing the SDR program, should devote the necessary resources and efforts to achieve the program's stated objective, which is "to achieve prompt and appropriate correction of conditions adversely affecting continued airworthiness of aeronautical products." Order 8010.2 states that this is to be accomplished through the collection of service difficulty reports, analysis of the data, and dissemination of alert information to the appropriate segments of the aviation community and the FAA.

Although the FAA/industry working group has made several recommendations that should, with corresponding FAA corrective measures, improve the process of

SDR data collection, necessary improvements in the analysis of SDR data and the dissemination of alerting information on potential safety-of-flight problems have not occurred, and do not appear imminent. Both the GAO report and discussions with FAA personnel at the Safety Data Analysis Section (AFS-643), which is responsible for the analysis of service difficulty reports, indicate that increased staffing is necessary to properly carry out the function of the SDR program. The Safety Board believes that, while an increase in staffing may be difficult to achieve, it is nevertheless important to address the FAA's capability to accomplish the stated objectives of the SDR program.

The Safety Board further believes that the FAA can improve the SDR data base by encouraging foreign air carriers and aircraft manufacturers to report service difficulty data. The U.S.-manufactured aircraft registered outside the United States comprise a large percentage of all U.S.-manufactured aircraft in operation and, therefore, of potential service difficulty data. In addition, with the increasing numbers of foreign-manufactured aircraft being operated in the United States, data from foreign manufacturers would have obvious safety value to U.S. operators and to the FAA.

The Safety Board is also concerned that the current efforts to improve the SDR system do not address the problems with general aviation Malfunction or Defect (M or D) Reports. Current Federal Aviation Regulations (FARs) require that holders of certificates under 14 Code of Federal Regulations (CFR) Parts 21, 121, 125, 127, 135, and 145 submit reports of service difficulties to the FAA for entry into the SDR system. Service difficulty reporting is currently not required under Parts 43 and 91. This factor may be contributing to low reporting, which significantly reduces the value and effectiveness of the program. Encouraging those who operate under the provisions of 14 CFR Parts 43 and 91 to submit M or D Reports, and providing appropriate guidance to them, would improve the quality and content of the general aviation SDR data base.

The Safety Board believes that the ongoing improvements to the SDR program should be applied to the general aviation community as well as to the air carriers. Electronic submission of all service difficulty data (SDRs and M or D Reports) should be encouraged to ensure prompt recovery of pertinent safety information.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Review the reporting items and establish standardized reporting formats for Malfunction or Defect Reports and Service Difficulty Reports that include the capability for electronic submission. Encourage all operations under 14 CFR Parts 21, 43, 91, 121, 125, 127, 135, and 145 to use electronic reporting methods for submission of service difficulty information. (Class II, Priority Action) (A-93-61)

Encourage all persons or organizations that operate under 14 CFR Parts 43 and 91 to submit Malfunction or Defect Reports and provide appropriate guidance to improve the quality and content of the general aviation service difficulty data base. (Class II, Priority Action) (A-93-62)

Ensure that prompt analysis of service difficulty reports and dissemination of alerting information is being accomplished in accordance with Federal Aviation Administration policies and procedures. (Class II, Priority Action) (A-93-63)

Encourage foreign regulatory agencies to provide service difficulty data from resident operators and manufacturers to the Federal Aviation Administration (FAA) for incorporation into the FAA service difficulty data base. (Class II, Priority Action) (A-93-64)

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HART, and HAMMERSCHMIDT concurred in these recommendations.

By: 
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Chairman