U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: Service Difficulty Reporting System (Air Operator/Air Agency/General Aviation/Unmanned Aircraft Systems)

Date: DRAFT **AC No:** 20-109B
Initiated by: AFS-600 **Change:**

1 PURPOSE OF THIS ADVISORY CIRCULAR (AC). This AC describes methods the Administrator prescribes per Title 14 of the Code of Federal Regulations (14 CFR) part 91, § 91.1415; part 125, § 125.409; and part 135, § 135.415; and accepts per part 121, § 121.703 and part 145, § 145.221 for reporting in-service product and article failures, malfunctions, and defects. The Federal Aviation Administration (FAA) encourages service difficulty reporting by the General Aviation (GA) community and general public.

1.1 The contents of this document do not have the force and effect of law and are not meant to bind the public in any way, and the document is intended only to provide information to the public regarding existing requirements under the law or agency policies.

2 AUDIENCE. This AC solicits service difficulty reporting participation from all segments of the aviation community using the Administrator's Service Difficulty Reporting System (SDRS) automation accessed at https://sdrs.faa.gov.

2.1 Certificate Holders (CH). This AC applies to CHs who are required to submit a Service Difficulty Report (SDR) and part 91 subpart K (part 91K) program managers required to submit Mechanical Reliability Reports (MRR) as follows:

- Section 91.1415, CAMP: Mechanical Reliability Reports.
- Section 121.703, Service Difficulty Reports.
- Section 121.374(h), Continuous Airworthiness Maintenance Program (CAMP) for Two-Engine ETOPS.
- Section 125.409, Service Difficulty Reports.
- Section 135.415, Service Difficulty Reports. (Including Unmanned Aircraft Systems (UAS) subject to this rule.)
- Part 135 Appendix G, § G135.2.8(h), Extended Operations (ETOPS), Maintenance Program Requirements.
- Section 145.221, Service Difficulty Reports.

2.2 General Aviation (GA) Community and General Public. The SDRS automation is available to the GA community. Participation from the GA owners, operators, and maintainers adds value and improves the overall safety of the entire aviation community. The GA community is encouraged to participate in this reporting process. Submitters may remain anonymous.

3 WHERE YOU CAN FIND THIS AC. You can find this AC on the FAA website at https://www.faa.gov/regulations_policies/advisory_circulars and the Dynamic Regulatory System (DRS) at https://drs.faa.gov.

4 EFFECTIVE DATE. The effective date of this AC is [AC publication date].

5 EXPLANATION OF CHANGES. This revision emphasizes the use of the SDRS web-based automation as the Administrator's prescribed and preferred method of SDR reporting for all operations including GA. It includes Unmanned Aircraft Systems (UAS) operator reporting guidance.

6 WHAT THIS AC CANCELS. AC 20-109A, Service Difficulty Program (General Aviation), dated April 8, 1993, is canceled.

7 METHODS OF SUBMITTING SDRs.

1. Preferred: SDRS website at https://sdrs.faa.gov.
2. UAS operators should refer to and use the tool at https://avssp.faa.gov/avs/afs600/UAS-IPP/.
3. Access to computers and the internet is now widely available to the public at places, such as public libraries, enabling persons to use the above preferred methods. These websites greatly reduce the filing burden on both the person and the FAA. While not preferred, FAA Forms 8010-4, Malfunction or Defect Report, and 8070-1, Service Difficulty Report, are available for use. This type of submission should be rare (e.g., related to system outages, internet issues, or lack of computer access). These submissions can be sent by email to 9-AMC-AFS-SDR@faa.gov, transmitted by fax at 405-954-4655, or sent by U.S. mail to:

   Manager, Aviation Data Systems Branch
   P.O. Box 25082
   Oklahoma City, OK 73125

8 SERVICE DIFFICULTY REPORTING.

8.1 Objective. The objective of service difficulty reporting is to collect and consolidate reported data and information into a common data bank, allowing it to be distributed within the FAA's Aviation Safety (AVS) organization. Various divisions, groups, and offices within the FAA can then collate the data and information and use it to analyze and assess operational reliability of aeronautical products and articles. AVS as an organization has the responsibility to identify and react proactively to in-service trends, reliability issues, or unsafe conditions as they are realized. When analysis of data and

information substantiate a reliability issue or unsafe conditions, the AVS organization can work interdependently to preclude their negative effects and/or reoccurrence.

8.1.1 Evaluating service difficulties determines if corrective action is required to remedy an unsafe condition in a product or article. It also provides valuable statistical data that manufacturers, air carriers, air agencies, operators, and maintainers can use to evaluate the effectiveness of their inspection and maintenance programs performance and effectiveness.

8.1.2 Service difficulties occurring directly as a result of human factors are not reportable to the SDR program unless the instructions for continued airworthiness (ICA) for the product are determined to be the source of the error. An organization's Safety Management System (SMS) or other risk management system employed by the company should address these occurrences.

8.2 SDR Title and Terminology Clarifications. Section 91.1415, applicable to part 91K operations is titled "Mechanical Reliability Reports." This is an older term that is synonymous with "Service Difficulty Report." The regulation in part 91K was ongoing at the time of the title change, and as a result, it still carries the old title. The SDRS website (https://sdrs.faa.gov) directs GA reporting to create a Malfunction or Defect (M or D) Report and fill out FAA Form 8010-4. SDR regulations in parts 121, 125, 135, and 145, and FAA Form 8070-1 are all titled "Service Difficulty Reports". The stated objective above is the same regardless of the title and terminology. The data and information in MRRs, M or D Reports, or, as they are commonly called, SDRs, is collected and stored in the SDRS database by the Aviation Data Systems Branch in Oklahoma City, Oklahoma.

8.3 Benefits of Reporting. Such reporting serves the public in several ways. First, the statistical record of all such reports provides the FAA with the knowledge of the effectiveness of current airworthiness certification and maintenance program standards. Second, the record of such reports provides knowledge of the effectiveness of the CH's maintenance programs. Third, the knowledge of these reports prompts other CHs to take action in preventing similar mechanical or structural problems in their aircraft fleet. Fourth, the record promotes the open sharing of safety data and information with the FAA and allows it and all users and maintainers of a product or article to trend the frequency of mechanical or structural problems. This trending can provide knowledge that gives warning of present or imminent unsafe operating conditions.

Note: The number of SDRs submitted is not an indicator of the mechanical reliability or fitness of an air carrier's aircraft fleet and should not be used as such. The air carrier's certificate holding office has the primary responsibility for planning, programming evaluations, and assessing the performance of operators. Questions regarding an air carrier's fleet performance should be directed to the appropriate Flight Standards District Office (FSDO), certificate management office (CMO), or certificate management unit (CMU).

8.4 CH and Program Manager Reporting Sources. The primary sources of SDRs are persons, as defined in 14 CFR part 1, § 1.1, who operate under parts 91K, 121, 125, 135,

and 145. FAA aviation safety inspectors (ASI) may also report service difficulty information when they conduct routine surveillance as well as accident and incident investigations. It should be understood that the Extended Operations (ETOPS) reporting requirements in § 121.374(h) and part 135, appendix G, § G135.2.8(h) list events that should be reported at https://sdrs.faa.gov. Due to the elevated levels of risk related to ETOPs, the regulation requires they also notify their responsible Flight Standards office within 96 hours of the occurrence.

8.5 GA and Foreign Reporting Sources. The secondary sources of SDRs are the GA community and foreign regulatory authorities who voluntarily submit reports to the FAA. SDRs allow the FAA to collect and analyze data from all segments of the aviation community in order to identify trends and become proactive in mitigating safety risks.

8.6 UAS Part 135 SDR. In March 2019, the FAA created an UAS Part 135 SDR site. These UAS are subject to § 135.415 and must file SDRs. UAS operators subject to § 135.415 should refer to the reporting site at https://avssp.faa.gov/avs/afs600/UAS-IPP/.

9 AVIATION DATA SYSTEMS BRANCH. Regulatory Support Division, Aviation Data Systems Branch is responsible for:

- The management of the SDRS automation,
- The SDRS website, and
- The instructions and information posted on this website.

9.1 View and Access to the SDRS Website. SDRS quick reference guides and instructions can be found at https://sdrs.faa.gov, or, if you are a UAS operator, at https://avssp.faa.gov/avs/afs600/UAS-IPP/. You may also contact the Aviation Data Systems Branch by email at 9-AMC-SDR-ProgMgr@faa.gov; or by U.S. mail at this address:

Manager, Aviation Data Systems Branch
P.O. Box 25082
Oklahoma City, OK 73125

9.1.1 View and Access to UAS Part 135 SDR Site.

9.1.1.1 If your operation is new or not in the UAS Part 135 SDR site, a request for inclusion can be made by emailing 9-AWA-AFS-300-Maintenance@faa.gov to create new operator data fields.

9.1.1.2 Existing FAA Knowledge Services Network (KSN) users, both FAA and industry, will only have to enter their email address and KSN password. Upon entry, the "Request for Access" page will ask for a phone number and reason for access. The UAS SDR site manager will approve/reject the request within 5 business-days.

9.1.1.3 The UAS SDR site manager is able to create accounts and reset passwords:

- New industry users who do not have a KSN account will reach a login screen to enter their credentials. New users must email 9-AWA-AFS-300-Maintenance@faa.gov to create a KSN account.
- Forgotten passwords can also be resolved by emailing 9-AWA-AFS-300-Maintenance@faa.gov to reset.

Note: For new data fields, operators, and reference information to be included in the site, the request must be made to the UAS SDR site manager.

10 INVESTIGATING SERVICE DIFFICULTIES. Investigations and application of SMS processes are essential to determine what should and should not be reported. Those who are required to submit SDRs should provide a logical approach to making these decisions. The FAA expects these reports to reflect proactive efforts by the aerospace industry that are coordinated between manufacturers and service providers and include corrective actions that are sophisticated, well thought out, and formally communicated to employees. It is the responsibility of product and article manufacturers, operators, and maintainers to apply well established, safety risk analysis and assessment processes *to determine*[1] *(emphasis)* if a report meets the regulatory criteria and is worthy of reporting. Once the facts are gathered and the safety risk is established, a person is able to determine if the failure, malfunction, or defect caused an event that is required to be reported.

10.1 The FAA's AVS organization has the responsibility and authority of the Administrator to react proactively to in-service trends, reliability issues, or unsafe conditions as it realizes them. In regards to SDRS, AVS will apply routine review of data and information and apply FAA Order 8040.4, Safety Risk Management Policy.

10.1.1 Reviews by Flight Standards (FS) Safety Assurance (SA) Airworthiness (AW) principal inspectors (PI) may lead to actions that are necessary to address an immediate safety concern. However, before acting, or shortly thereafter, the AW PI should discuss the matter and confirm the appropriateness of their actions with the following AVS organizations as necessary:

- FS Aircraft Evaluation Division (AED).
- Aircraft Certification Service (AIR) Aircraft Certification Office (ACO) Branches.
- AIR Manufacturing Inspection District Office (MIDO) Sections.

Note: This also could include discussions by the FS SA PIs, AED, and/or AIR with the product or article manufacturer and users. These could include the holder of the type certificate (TC) (including amended or supplemental TCs), a Parts

[1] Safety Risk decision.

Manufacturer Approval (PMA), or a Technical Standard Order (TSO) authorization, or the licensee of a TC.

10.2 Timely Reporting. It is important to report the occurrence or detection of a failure, malfunction, or defect within the time required by the regulations.

10.2.1 No person may withhold a report required by the regulations under which they operate, even if all the information required by those regulations is not available at the time the initial report is due. When additional information, including information from the manufacturer or other agency, becomes available, each person will expeditiously submit a supplement to the first report and reference the date and place of submission of the first report.

10.2.2 When an aircraft is out-of-service for more than 72 hours due to scheduled maintenance, preventive maintenance, or alteration activity, and discoveries of service difficulty issues are identified; the reporting time requirement begins after the work on the aircraft is approved for return to service.

11 REPORTING INSTRUCTIONS.

11.1 Required and Shared Information. Not all data fields in the SDRS or on an SDR form are required by the regulations. The goal is to acquire as much data and detailed information as possible so that the FAA, manufacturers, and safety conscious operators can use it to fully assess the risks and conditions that may affect public safety.

11.2 SDRS Reporting Instructions. When you access the SDRS site at https://sdrs.faa.gov, you will find on the right-hand side a list of "Resources." Selecting the "View reference documents" link will take you to "SDRS Field Instructions" that will lead you through the data necessary for submission. (See Figures 1 and 2 below.)

Figure 1. SDRS Resource Links

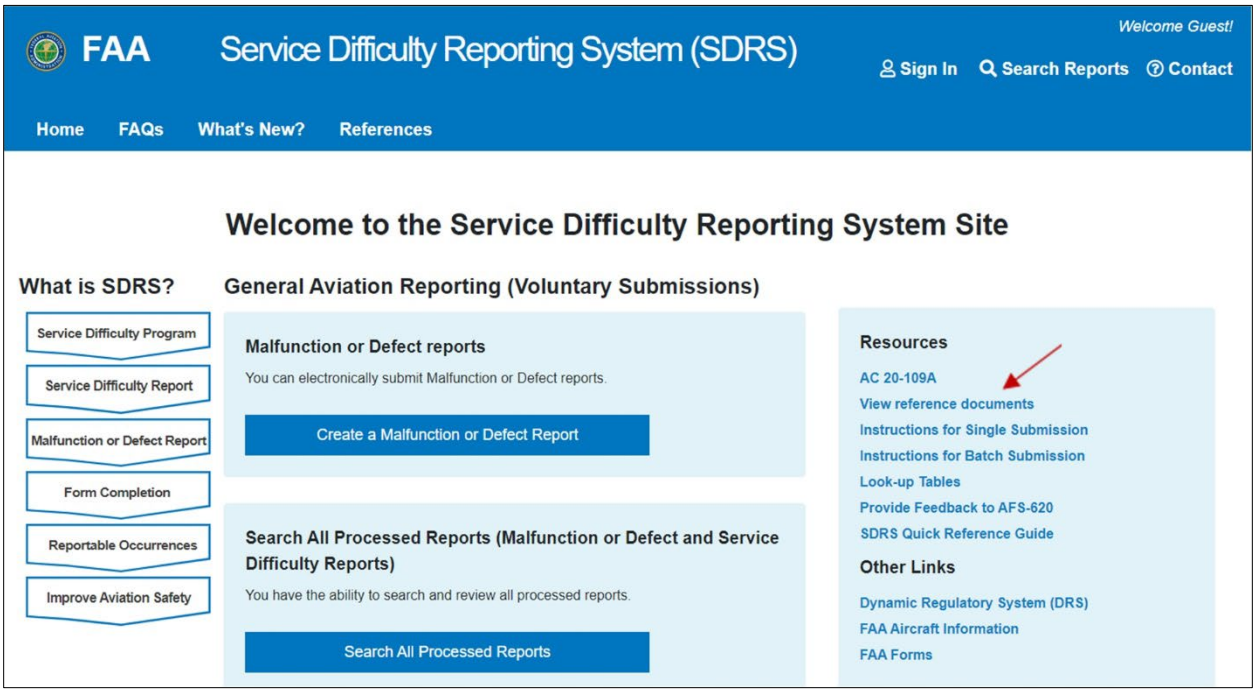
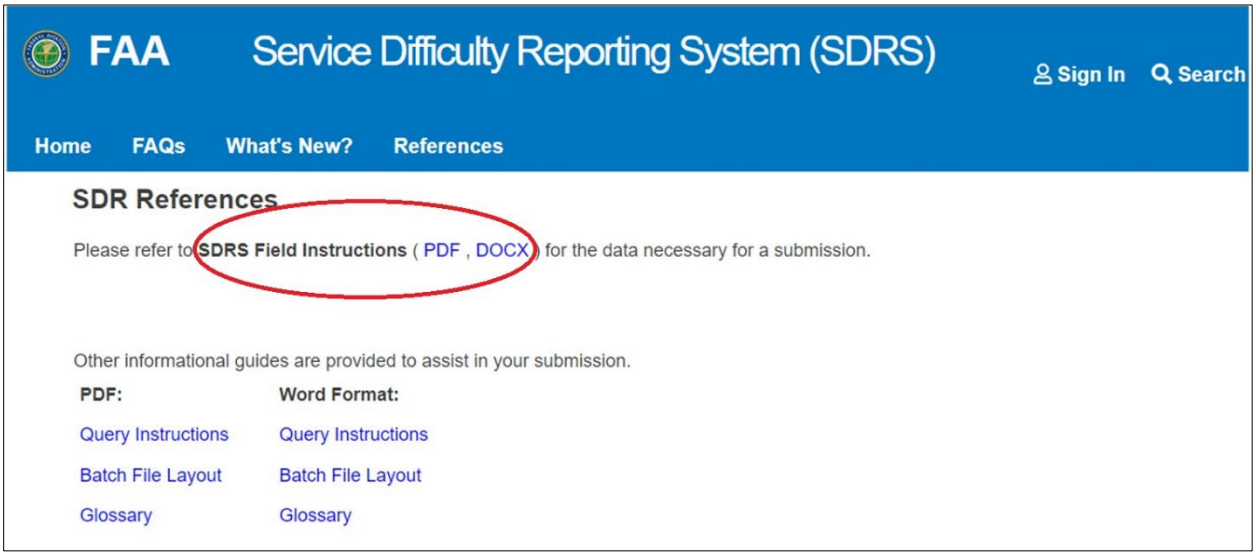
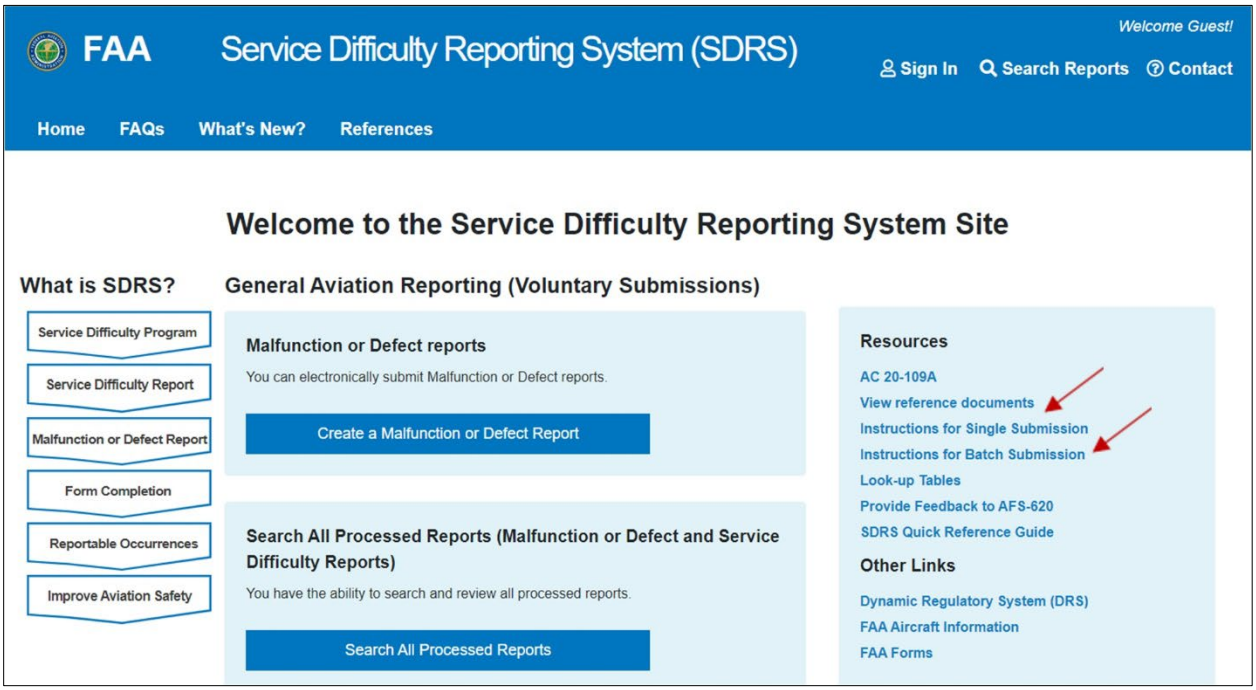


Figure 2. SDRS Field Instructions



11.2.1 Single and Batch Submission Instructions. Instructions for "Single" and "Batch" submissions can be accessed by clicking on the appropriate resource link from the SDRS site. (See Figure 3 below.)

Figure 3. Single and Batch Submission Instructions



11.3 UAS Part 135 SDR Instructions.

11.3.1 Access the UAS Part 135 SDR site at https://avssp.faa.gov/avs/afs600/UAS-IPP/. On the left-hand side of the home page (titled UAS Part 135 SDR), you will see a link titled "Reference Documents." Click on it, and it will lead you to reporting instructions. (See Figures 4 and 5 below.)

Figure 4. UAS Part 135 SDR Home Page

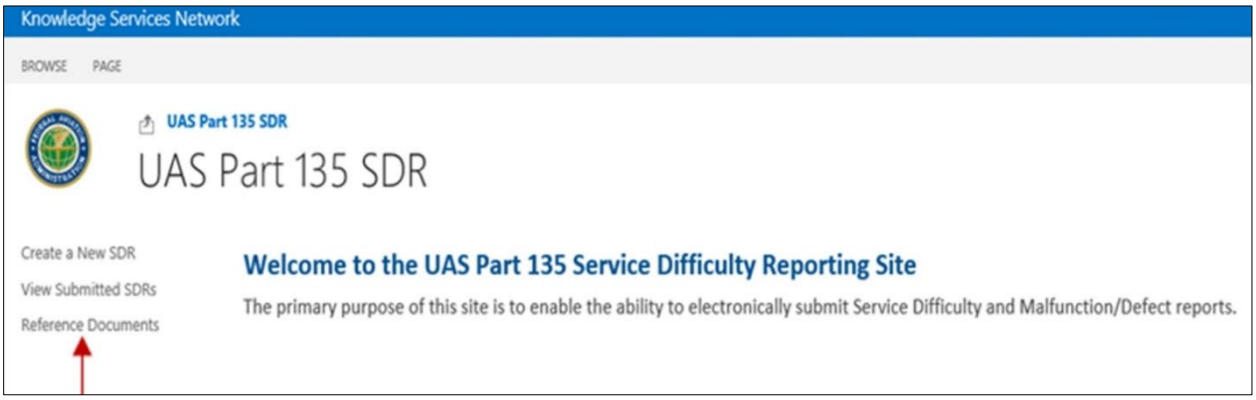
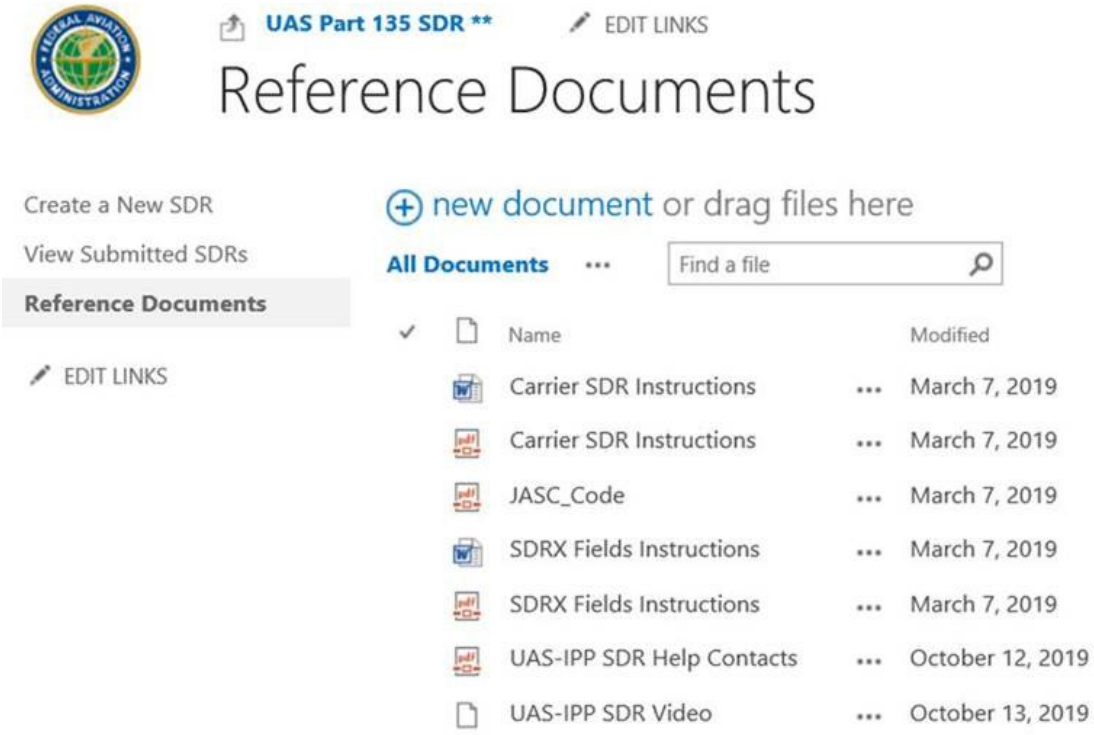


Figure 5. Reporting Instructions



11.4 FAA Forms 8010-4 and 8070-1. The FAA forms are for use if you do not have a computer or access to the internet. If you do not have access to a computer and the internet, you will need to visit your responsible Flight Standards office to acquire these forms and answer questions. Instructions are included with FAA Form 8070-1. Your responsible Flight Standards office has access to the SDRS site at https://sdrs.faa.gov and can assist you in reporting using this preferred method.

12 AC FEEDBACK FORM. For your convenience, the AC Feedback Form is the last page of this AC. Note any deficiencies found, clarifications needed, or suggested improvements regarding the contents of this AC on the Feedback Form.

Lawrence M. Fields
Acting Executive Director, Flight Standards Service