



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# Advisory Circular

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**Subject:** SERVICE DIFFICULTY PROGRAM      **Date:** 4/8/93      **AC No:** AC 20-109A  
(GENERAL AVIATION)      **Initiated by:** AFS-640      **Change:**

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1. **PURPOSE.** This advisory circular (AC) describes the Service Difficulty Program as it applies to general aviation activities. Instructions for completion of the revised FAA Form 8010-4 (10-92), Malfunction or Defect Report, are provided. This AC also solicits the participation of the aviation community in the Service Difficulty Program and their cooperation in improving the quality of FAA Form 8010-4.
2. **CANCELLATION.** AC 20-109, Service Difficulty Program (General Aviation), dated 1/8/79, is canceled.
3. **FORMS.** FAA Form 8010-4 (10-92), Malfunction or Defect Report, (National Stock Number (NSN) 0052-00-039-1005, Unit of Issue "BK" (25 forms per book), is available free from Flight Standards District Offices (FSDO's). See appendix 1 for directions on completing FAA Form 8010-4.
4. **DISCUSSION.** The Service Difficulty Program is an information system designed to provide assistance to aircraft owners, operators, maintenance organizations, manufacturers, and the Federal Aviation Administration (FAA) in identifying aircraft problems encountered during service. The Service Difficulty Program provides for the collection, organization, analysis, and dissemination of aircraft service information to improve service reliability of aeronautical products. The primary sources of this information are the aircraft maintenance facilities, owners, and operators. General aviation aircraft service difficulty information is normally submitted to the FAA by use of FAA Form 8010-4. However, information will be accepted in any form or format when FAA Form 8010-4 is not readily available for use.
5. **INPUT.** All of the FAA Forms 8010-4 are received by local FSDO's or Certificate Management Offices (CMO's). All the FAA Forms 8010-4 are reviewed for immediate impact items, and then forwarded for processing to the Flight Standards Service, Safety Data Analysis Section (AFS-643), in Oklahoma City, Oklahoma.

The information contained in the FAA Form 8010-4 is stored in a computerized data bank for retrieval and analysis. Items potentially hazardous to flight are telephoned directly to AFS-643 personnel by FAA Aviation Safety Inspectors in FSDO's. These items are immediately referred to, and expeditiously handled by, the appropriate FAA offices.

a. **Certain owners, operators, certificate holders, and certificated repair stations are required by the Federal Aviation Regulations (FAR) to submit reports of defects, unairworthy conditions, and mechanical reliability problems to the FAA.** However, success of the Service Difficulty Program is enhanced by submission of service difficulty information by all of the aviation community regardless of whether required by regulation. Voluntary submission of service difficulty information is strongly encouraged.

b. **Additional service difficulty information is collected by FAA Aviation Safety Inspectors in the performance of routine aircraft and maintenance surveillance, accident and incident investigations, during the operation of rental aircraft, and during pilot certification flights.**

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c. **All service difficulty information is retained in the computer data bank for a period of 5 years providing a base for the detection of trends and failure rates. If necessary, data in excess of 5 years may be retrieved through the archives.**

6. **THE INFORMATION MANAGEMENT SECTION, AFS-624, IS AN INFORMATION CENTER.** AFS-624 personnel responds to individual requests from the aviation community concerning service difficulty information. Further details regarding computer-generated service difficulty information, may be obtained by telephoning (405) 954-4173 or by writing to:

FAA  
Flight Standards Service  
ATTN: Information Management Section (AFS-624)  
P.O. Box 25082  
Oklahoma City, OK 73125-5012

7. **PUBLICATIONS PRODUCED BY AFS-643.** Analysis of service difficulty information is primarily done by AFS-643. When trends are detected, they are made available to pertinent FAA field personnel for their information and possible investigation. AFS-643 produces the following publications.

a. **The Flight Standards Service Difficulty Reports (General and Commercial),** known as the weekly summary, contains all information obtained from FAA Forms 8010-4 and those service difficulties which were reported by telephone. Reports of a significant nature are highlighted with a "star" border, while reports which are of an "URGENT AIRWORTHINESS CONCERN" are highlighted with a "black and white slashed" border. These highly significant items are sometimes obtained from sources other than FAA Forms 8010-4. This publication is distributed to FSDO's, Manufacturing Inspection District Offices (MIDO's), and Aircraft Certification Offices (ACO's). This publication is also made available to the public free of charge by telephoning (405) 954-4171 or by writing to AFS-643 at the following address:

FAA  
Flight Standards Service  
ATTN: Safety Data Analysis Section (AFS-643)  
P.O. Box 25082  
Oklahoma City, OK 73125-5029

b. **AC 43-16, General Aviation Airworthiness Alerts,** contains information that is of assistance to maintenance and inspection personnel in the performance of their duties. These items are developed from submitted FAA Form 8010-4 and articles pertaining to aviation. This publication is made available to the public free of charge by telephoning (405) 954-4171 or by writing to AFS-643 (see the address given in paragraph 7a).

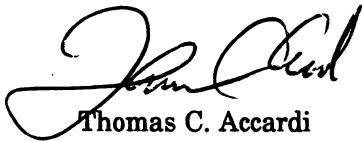
8. **IMPORTANCE OF REPORTING.** The FAA requests the cooperation of all aircraft owners, operators, mechanics, pilots, and others in reporting service difficulties experienced with airframes, powerplants, propellers, or appliances/components.

a. **FAA Forms 8010-4 provide the FAA and industry with a very essential service record** of mechanical difficulties encountered in aircraft operations. Such reports contribute to the correction of conditions or situations which otherwise will continue to prove costly and/or adversely affect the airworthiness of aircraft.

b. **When a system component or part of an aircraft (powerplants, propellers, or appliances) functions badly or fails to operate in the normal or usual manner, it has malfunctioned and should be reported. Also, if a system, component, or part has a flaw or imperfection which impairs function or which may impair future function, it is defective and should be reported. While at first sight it appears this will generate numerous insignificant reports, the Service Difficulty Program is designed to detect trends. Any report can be very constructive in evaluating design or maintenance reliability.**

c. **When preparing FAA Form 8010-4, furnish as much information as possible. Any attachments such as photographs and sketches of defective parts are appreciated. However, do not send parts to AFS-643. AFS-643 does not have storage facilities for defective parts.**

d. **Public cooperation in submitting service difficulty information is greatly appreciated by the FAA and others who have an interest in safety. The quantity of service difficulty reports received precludes individual acknowledgement of each report.**



Thomas C. Accardi  
Director, Flight Standards Service





**ITEM.**     **OPER. Control No.:** Primarily to be used for FAR Part 135 and 121 operators.  
              Example: ABCD9212345, BCDE1235436

OPER. Control No.	ABCD9212345
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**ITEM.**     **ATA Code:** Four-digit code used primarily by the FAA.  
              Example: 7200, 8300

ATA Code	7200
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**ITEM 1.**   **A/C Reg. No.:** Enter the complete aircraft registration number.  
              Example: 7523Q, 8304Q

**NOTE:**     **The registration number is not mandatory; however, it is of use when there is a need to trace the aircraft model by series.**

N-7523Q
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**ITEM 2. AIRCRAFT:**

**NOTE:** Always supply aircraft data if available.

**MANUFACTURER:** Enter the aircraft manufacturer's name. Any meaningful abbreviation will be acceptable.

Example: Beech, Cessna

**MODEL/SERIES:** Enter aircraft model as identified on the aircraft data plate.

Example: 172A, 180

**SERIAL NUMBER:** Enter the serial number assigned by the manufacturer.

Example: 81RK, 94RK

Enter pertinent data	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER
<sup>2</sup> AIRCRAFT	Beech	172A	81RK

**ITEM 3. POWERPLANT:**

**MANUFACTURER:** Enter the engine manufacturer's name. Any meaningful abbreviation will be acceptable.

Example: Lyc., Cont.

**MODEL/SERIES:** Enter engine model as identified on the engine data plate.

Example: IO-540, O-470R

**SERIAL NUMBER:** Enter the serial number assigned by the engine manufacturer.

Example: 4700, 2300

Enter pertinent data	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER
<sup>3</sup> POWERPLANT	Lyc.	IO-540	4700

**ITEM 4. PROPELLER:** Complete only if pertinent to the problem being reported.

**MANUFACTURER:** Enter the manufacturer's name. Any meaningful abbreviation will be acceptable.

Example: Hartzl., Hamstd.

**MODEL/SERIES:** Enter propeller model as identified in FAA type certificate data sheet/propeller specifications.

Example: DHCC2Y, M74CC

**SERIAL NUMBER:** Enter the serial number assigned by the propeller manufacturer.

Example: D800, D900

<i>Enter pertinent data</i>	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER
4. PROPELLER	Hartzl.	DHCC2Y	D 800



**ITEM 5. SPECIFIC PART (of component) CAUSING TROUBLE:**

**Part Name:** Enter the name of the specific part causing the problem. The appliance or component is the assembly which includes the part. For instance: When the part is a burned wire, the component would be the system using the wire, such as VHF communication system. When the part is a bearing, the appliance should be the unit using the bearing, such as starter, alternator, generator, etc. When the part is a stringer, the component name should be fuselage, wing, or stabilizer, etc.

Example: crankcase, wire

**MFG. Model or Part No.:** Enter the manufacturer's part number.

Example: 14542, 23893

**NOTE:** If same as aircraft engine, or propeller, leave blank.

**NOTE:** If the aircraft, engine, or propeller manufacturer is the component manufacturer, leave blank.

**Serial No.:** Enter the serial number assigned by the manufacturer.

Example: N/A, W5489

**Part/Defect Location:** Enter the location.

Example: left half, right wing

5. SPECIFIC PART (of component) CAUSING TROUBLE			
Part Name	MFG. Model or Part No.	Serial No.	Part Defect Location
crankcase	14542	N/A	left half

**ITEM 6. APPLIANCE/COMPONENT (Assembly that includes part):**

**Comp/Appl Name:** Enter the manufacturer's nomenclature for the component or appliance of the specific part causing the problem.

Example: engine, starter

**Manufacturer:** Enter the part manufacturer's name.

Example: Lyc., Lear

**Model or Part No.:** If supplied by the manufacturer.

Example: O-362YK-1, O-473GH-2

**Serial Number:** If supplied by the manufacturer.

Example: CH9693, DE8549

**Part TT:** Enter the service time of the part in whole hours. (If Part TT is unknown, use aircraft, engine, propeller, or appliance/component total time, whichever is applicable.)

Example: 02756, 04278

**Part TSO:** Enter the service time of the part since it was last overhauled, in whole hours. (If part TSO is unknown, use an aircraft, engine, propeller, or appliance/component time since last overhaul, whichever is applicable.)

Example: 00351, 00427

**Part Condition:** Enter the word(s) which best describe the part condition.

Example: cracked, disintegrated

6. APPLIANCE COMPONENT (Assembly that includes part)			
Comp/Appl Name	Manufacturer	Model or Part No.	Serial Number
engine	Lyc.	O-362YK-1	CH9693
Part TT	Part TSO	Part Condition	
02756	00351	cracked	

**ITEM 7. Date Sub:** Enter the date of submission, day, month, year.

Example: 08/15/92, 11/15/92

7. Date Sub. 08/15/92
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**ITEM 8. Comments (Describe the malfunction or defect and the circumstances under which it occurred. State probable cause and recommendations to prevent recurrence.):** Continue on reverse side if needed. Powerplant TT and TSO should be shown in this box when it is a secondary item.

Example: (See the following typed example.)

**NOTE:** It is requested that submitters make their comments as legible as possible (preferably typed). Information vital to the FAA and the aviation industry may be lost when it is not possible to contact the submitter of an illegible report.

<p>8. Comments <i>(Describe the malfunction or defect and the circumstances under which it occurred. State probable cause and recommendations to prevent recurrence.)</i></p> <p>During a scheduled inspection of the landing gear, the mechanic found the left main landing gear support was broken completely in half.</p> <p>It is suspected that fatigue or an unreported hard landing could be the cause.</p> <p><b>Optional Information:</b></p> <p>Check a box below, if this report is related to an aircraft</p> <p><input type="checkbox"/> Accident; Date _____ <input checked="" type="checkbox"/> Incident; Date <u>01/14/93</u></p>
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**ITEM. Optional Information:**

**Accident; Date:** Accident where substantial damage to aircraft or property and/or serious injury. Enter the date of the accident (day, month, and year).

Example: 01/22/93, 02/13/93

**Incident; Date:** Anything less than an accident. Enter the date of the incident (day, month, and year).

Example: 01/14/93, 02/12/93

**NOTE:** This information may be used to trace data to accident or incident records.

**ITEM. DISTRICT OFFICE:** District Office Flight Standards District Office Code.  
Example: DAL, LAX

**NOTE:** FAA Aviation Safety Inspectors reviewing this report should show their FSDO symbol in this box.

DISTRICT OFFICE DAL
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**ITEM. SUBMITTED BY:** Enter the name (and certificate number if appropriate) of the person submitting the report. This is not mandatory, but is extremely important when further information is required. Information such as names, telephone numbers, etc., are dealt with strict confidentiality to protect the submitter. However, the report will be entered in the system even if unsigned.

Example: (See the following hand-written example.)

**NOTE:** Check the appropriate box to identify the organization/person initiating the report.

REP STA	OPER	MECH	AIR TAXI	MFG	FAA	COMMUTER	OTHER
		✓					
SUBMITTED BY: <i>Steve S. Smith, Jr.</i>							

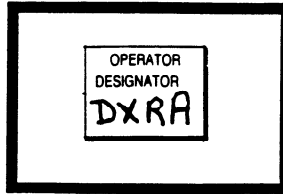
**ITEM. TELEPHONE NUMBER:** Enter the telephone number of the person submitting the report.

Example: (See the following hand-written example.)

**NOTE:** This is not mandatory, but is of use when further information is required.

TELEPHONE NUMBER (405) 555 - 2322
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**ITEM. OPERATOR DESIGNATOR:** Enter four-letter designator assigned by the FAA, as appropriate.  
Example: DXRA, UMNA







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**AFS-640**

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