CHANGE

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8010.2 CHG 2

1/8/79

Cancellation Date: 4/1/79

SUBJ: FLIGHT STANDARDS SERVICE DIFFICULTY PROGRAM

PURPOSE. This change reflects the discontinuance of AC 20-7, General Aviation Inspection Aids, and its replacement by AC 43-16, General Aviation Airworthiness Alerts. Minor editorial and updating changes have also been incorporated.

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12. SERVICE DIFFICULTY COORDINATOR.

a. Responsibilities. The Regional Service Difficulty Coordinator is responsible for:

(1) Serving as the focal point within the region for receiving service difficulty information and ensuring that information and documents received are disseminated to the appropriate branches for action.

(2) Performing staff functions in overseeing and assessing the Division's Service Difficulty Program management and accomplishments.

(3) Making recommendations to the Division Chief to revise national, regional, or division procedures.

(4) Effecting good communication and coordination with other branches within the division.

(5) Keeping the Division Chief advised on safety issues.

b. Specific Duties. The Regional Service Difficulty Coordinator is responsible for performing the following specific duties:

(1) Reporting, at the direction of the Division Chief, to the appropriate coordinator of the Service Difficulty Board on service difficulty items when corrective action CANNOT BE, or IS NOT, resolved between regions in a time period commensurate with safety implications.

(2) Coordinating Service Difficulty Reports (telephoned significant reports) from the field on products for which his region holds certificate management responsibility.

(3) Following up the status of actions taken in response to Maintenance Difficulty Records (telephoned significant reports) of service difficulties occurring in his region.

* (4) Submitting to AFS-580 a monthly report of items to be published in Advisory Circular 43-16, General Aviation Airworthiness Alerts. The region holding certificate management responsibility will make the report. *

(5) Ensuring that AFS-580 is informed of TC, PMA, TSOA, or STC address changes.

c. Regional Coordinators' names and locations (see Appendix 1).

13.-19. RESERVED.

CHAPTER 2. COLLECTION OF SERVICE DIFFICULTY INFORMATION

SECTION 1. GENERAL

20. AUTHORITY. Title VI of the Federal Aviation Act, Federal Aviation Regulations (FAR) Parts 21.3, 37.17, 121.703, 121.705, 123.27, 127.313, 127.315, 135.2, 135.57, 135.59, and 145.63.

21. PURPOSE. The service difficulty information provides the personnel of Flight Standards Service with reliability and airworthiness statistical data necessary for planning, directing, controlling, and evaluating certain assigned programs. This system also provides agency managers and inspectors with a means for measuring the effectiveness of the self-evaluation techniques being employed by certain segments of the civil aviation industry. There are three basic forms used in collecting service difficulty information: Service * Difficulty Reports (FAA Form 8070-1) for air carrier, Malfunction or Defect Reports (FAA Form 8010-4) for general aviation, and the Maintenance Difficulty Record (AC Form 8330-3) used to record telephonic reports. *

22.-29. RESERVED.

E - Vibration/buffet: rough engine, clear air turbulence, flight controls.

F - Flight controls affected: any malfunction affecting flight controllability.

G - Multiple failure: multiple failure of like systems or units.

H - Electrical power source loss exceeding 50 percent: alternators, buss, circuits.

I - Flight attitude instrument malfunction.

J - Warning indications.

K - Fluid loss: any malfunction resulting in loss of fuel, oil, gas, etc.

L - No test: the malfunction of a system being tested or the test circuit itself.

M - Over temperature condition: not fire.

N - False warning.

O - Other.

P - No warning indication.

S - Other systems affected.

T - Engine case punctured.

X - Engine flame out

Y - Engine stoppage in flight (except flame out) all engines.

Z - Significant failure reports.

(7) Stage. Enter the stage of flight or ground operation the aircraft was engaged in when the reported failure, malfunction, or defect occurred or was observed.

Code	Stage of Operation	Code	Stage of Operation
IN	Inspection/maintenance.	DE	Descent.
TX	Taxi/ground handling.	AP	Approach.
TO	Takeoff.	LD	Landing.

Code	Stage of Operation	Code	Stage of Operation
CL -	Climb.	HO -	Hovering.
CR -	Cruise.		

(8) Stat. (Status). This is a coded entry to indicate if the report is "open" or "closed"; i.e., is additional information forthcoming? The entry will be made by AFS-580.

(9) Roll. The microfilm roll identification will be entered by AFS-580. All Service Difficulty Reports will be stored on microfilm the first and 16th day of each month.

(10) Frame. The microfilm frame identification of the individual report. The frame number will be assigned by AFS-580.

(11) Sys. (systems) (Sys. subsystems). Affected systems; enter the first three digits of the ATA subsystem which identifies those aircraft functions affected or whose capability has been degraded by the reported * malfunction. Example: A windshield leaks water which enters the cockpit and affects electrical components. The affected systems reported may be VHF communications equipment with burned printed circuit boards. The systems reported would be VHF/UHF (232) and the printed circuit board (396). The * fourth digit of the ATA subsystem code will not be entered in these blocks. AFS-580 will complete these entries.

(12) Text Summary. AFS-580 is responsible for condensing the text of the report into 115 characters for computer input.

NOTE: See Appendix 3, Figures 1 and 2, for a complete FAA Form 8070-1.

34. SERVICE DIFFICULTY REPORTS, PROCESSING PROCEDURES.

a. The District Office.

(1) The original and one legible copy of FAA Form 8070-1 (Service Difficulty Report) should be mailed to the Safety Data Branch, AFS-580, on the SAME DAY that the information is received in the district office. Prior to forwarding to AFS-580, ensure reports initiated by FAA inspectors and those received from industry include sufficient information to allow analysis.

(2) Do not fold FAA Form 8070-1 for mailing; folding will result in processing difficulties in the Safety Data Branch.

(3) Significant reports that warrant immediate notification of the FAA offices responsible for the failed products should be telephoned to the Maintenance Analysis Center, AFS-580 (see Appendix 1 for telephone numbers) and other interested regions (see paragraph 34a.(6)). The inspector will be provided, if appropriate, a telephone conference with the region holding the type certificate for the product. The information given during

SECTION 3. THE MALFUNCTION OR DEFECT REPORT

* FAA Form 8010-4 (RIS: FS 8330-11) (OMB 04-R0003)

46. GENERAL. The Malfunction or Defect (M or D) Report, FAA Form 8010-4, is * to be used for collecting data on general aviation products. (See Appendix 3, Figures 4 and 5.)

47. RESPONSIBILITY. FAA General Aviation/Flight Standards District Office Inspectors are responsible for the completeness and accuracy of M or D Reports submitted to their offices, and for submitting M or D Reports when malfunctions or defects come to their attention through any other means.

48. SOURCES OF INFORMATION.

a. Certificated repair stations are required by FAR 145.63 to submit reports of serious defects and recurring unairworthy conditions on a form and in a manner prescribed by the Administrator. Field inspectors should * supply and encourage their use of FAA Form 8010-4. *

* b. Air taxi operators are required by FAR 135.415 to report the occurrence of or detection of each failure, malfunction, or defect which has (or may), in the operator's opinion, endangered the safe operation of the aircraft, in addition to 16 specifically reportable items. Further, they are required by FAR 135.417 to submit a report (form and manner not specified) for each unscheduled change of aircraft en route, interruption to a flight, unscheduled stop or diversion from a route caused by known or suspected mechanical difficulty or malfunction. These will be reported, by field inspectors, on the M or D Report (FAA Form 8010-4) or the Service Difficulty Report (FAA Form 8070-1) as appropriate when it is confirmed that the cause was a service difficulty. *

c. Amateur-built aircraft, Experimental Aircraft Association (EAA). GADO/FSDO inspectors are urged to encourage submission of M or D Reports on this type aircraft and process them as any other M or D Report. The Great Lakes Region has been designated as the controlling region for experimental amateur-built aircraft of EAA members. Insofar as the Service Difficulty Program is concerned, the EAA may function as though they were the manufacturer of the aircraft (i.e., as a focal point through which corrective action information is disseminated).

d. Field inspectors (all specialties) will report on the M or D Report all service difficulties which come to their attention during accident/incident investigations; surveillance of aircraft, agencies, and airmen; or which come to their attention in any other manner.

* e. Reportable Service Difficulties. Whenever a system, component, or part of an aircraft, powerplant, propeller, or appliance functions badly or fails to operate in the normal or usual manner, it has malfunctioned and it is reportable. Further, if a system, component, or part has a flaw or *

*imperfection which impairs or which may impair its future function, it is defective and should be reported. While at first sight it would appear this will generate numerous insignificant reports, the Service Difficulty Program is designed to detect trends and any report can be very constructive in evaluating design or maintenance reliability. *

49. M OR D's OF MAJOR SIGNIFICANCE. Inspectors becoming aware of service difficulties of a hazardous nature or of other major significance should call the MAC (see Appendix 1 for telephone numbers). The MAC will make a conference telephone call involving MAC, the inspector, the Regional Service Difficulty Coordinator and, when required, the technical specialist in the region most familiar with the affected item. In addition, the SDR coordinating region of occurrence will be informed of the telephonic report by receiving a copy of the record of the conference call prepared by the MAC specialist. This procedure is particularly applicable to items found during accident/incident investigations. M or D Reports must contain only factual information when initiated as a result of accident investigation and SHOULD NOT INDICATE ACCIDENT CAUSE. (Causal factors in accidents are determined by the National Transportation Safety Board.) If the inspector believes the service difficulty may have been a causal factor and wishes to lend importance to the report or give special alert notice, the information should be transmitted by phone to the Regional Service Difficulty Coordinator.

50. RECOMMENDATIONS. Recommendations for airworthiness directive action should be submitted through the appropriate regional organization with substantiation for further handling to the type certificate controlling region, with a copy to AFS-580 and AFS-800. Substantiation should be in the form of a description of the problem, drawings, photos if possible, information relative to the events of the malfunction, failure, or defect, and the inspector's recommendation concerning the corrective action to be taken.

51. RELEASE OF FAILED PARTS. When a failed part is obtained for forwarding with an M or D Report, the instructions as prescribed in Order 8020.11, Chapter 4, Section 2, paragraph 89, shall be followed.

* 52. INSTRUCTIONS FOR COMPLETING FAA FORM 8010-4. In some cases, it will be * difficult for the inspector to obtain all of the needed information. In these cases, the inspector will have to judge whether or not he has enough information for the report to be useful. Sometimes, just the number of happenings is an important factor in taking corrective action, while in others, complete details are needed. Complete details may be available for just one instance, and it is suspected that numerous others, for which data is lacking, were similar. Such circumstances shall be considered by the inspector when processing reports. The inspector should provide full information on reports vitally affecting safety, regardless of effort required, and should endeavor to provide sufficient data for analysis. Data to be entered in each block:

a. Block 1-Registration Number - Self-explanatory.

b. Block 2-Aircraft.

(1) Column A. Make - name of manufacturer.

(2) Column B. Model - as listed on FAA Type Certificate Data Sheets.

(3) Column C. Serial Number - manufacturer assigned.

c. Block 3-Powerplant - Enter make, model, and serial number, under Columns A, B, and C, in same manner as for aircraft.

d. Block 4-Propeller - Enter make, model, and serial number in same manner as for aircraft and powerplant. Serial numbers are important for propeller problems; and inspectors should bear in mind that combinations of propellers, engines, and airplanes sometimes cause problems; therefore, requiring complete information in A, B, and C of 2, 3, and 4.

e. Block 5-Appliance/Component - Blocks A, B, C, and D are to be filled out for all reports along with 2, 3, and 4, A, B, and C. If an appliance or component report is being processed for a repair shop and it is not known what aircraft, powerplant, or propeller it was removed from, "component only" should be written across blocks 2, 3, 4, A, B, C. Some problems are brought about by a combination of an appliance/component and an aircraft, powerplant, or propeller. It is important in these cases that all information available be supplied. The above is especially applicable, but not limited to avionic equipment and instruments.

f. Block 6-Specific Part (of component) Causing Trouble. In all cases, the inspector should strive to furnish the information for A, B, * C, E, F, and G. It will sometimes be difficult to complete E and F, and * possibly B, but the inspector must decide if TIME is an important factor in solving the problem. If it is, he should make every effort to find the information.

(1) Block A - Name of specific part.

(2) Block B - Part number of part assigned by the manufacturer.

(3) Block C - Where on the part the defect is located.

* (4) Block D - ATA Code. AFS-580 will code this, do not use. *

(5) Block E - Total time on part in hours.

(6) Block F - Time since overhaul on part in hours.

(7) Block G - Cracked, corroded, broken off, etc.

g. Block 7A-Comments. The information to be entered here is perhaps the most important on the form. It must identify and describe the malfunction, failure, or defect and contain descriptive information concerning the part/component that caused the difficulty. It must enable someone not familiar with the problem to understand the problem and provide information to assist in the development of a fix. Data important to the particular problem; i.e., calendar dates, inspection findings, cycles, etc., that are not included in other blocks on the form should be included. If the malfunction, failure, or defect is the result of, or is related to, a Supplemental Type Certificate (STC), the STC number should be shown. This will enable AFS-580 to send the report to the proper controlling region.

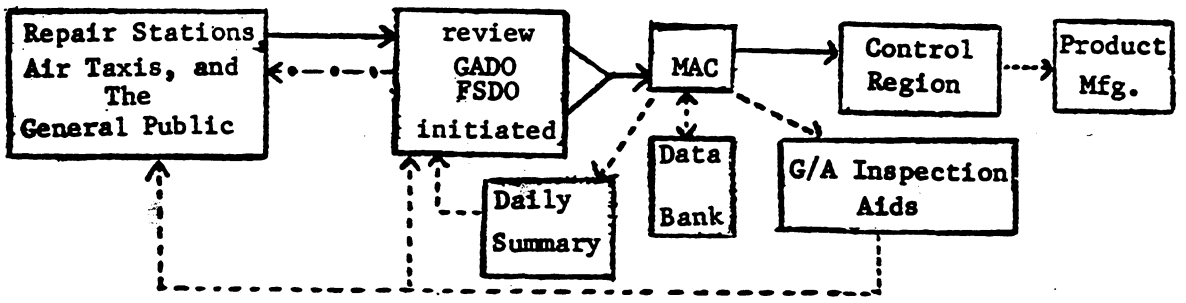
(1) The submitter should use the space headed "7A Comments" first. If additional space is required, half of the reverse side should be used and a separate 8" by 10 1/2" sheet of paper attached if necessary. The submitter should be careful to leave enough space on the franked side of the form so that the pre-stamped General Aviation Flight Standards District Office address can be plainly deciphered.

(2) Submitted by - Except for air taxis, certificated repair stations, and FAA personnel, the identity of the submitter is not required. There have been reports that repair stations have suffered economic reprisals after submitting M or Ds on certain products; therefore, the M or D report has been modified to permit removal of identification data by "tear off." Identification will remain with the M or D report throughout FAA to facilitate followup investigation, if required. Identification will be removed by the region with product certificate management responsibility prior to making the forms or copies available to manufacturers. In cases where the submitter is reluctant, even with the above provisions, the FAA inspector will verify the report and identify himself as the submitter. In all cases, Blocks B, C, D, E, F, G, or H should be filled out.

h. Block 8 Date Submitted - Self-explanatory.

i. Block 9 Control Number - For use of AFS-580. (Do not use for * regional control numbers.)

53. DISTRIBUTION AND ROUTING OF FAA FORM 8010-4. *



Self-addressed forms (indicated -·-·-·->) are distributed to the general aviation public by GADO/FSDO personnel. The completed forms and those initiated by GADO/FSDO personnel (indicated ———>) are forwarded to MAC where pertinent data is extracted. The forms are then forwarded to the region in whose area the product reported on is manufactured (controlling region). The extracted data is entered into the data bank for further use and study. * It also forms the basis for the Flight Standards Service Difficulty Reports and the General Aviation Airworthiness Alerts (AC 43-16). The publications are the media used to disseminate the information to GADO/FSDO personnel and the general aviation public (indicated - - - ->). *

CHAPTER 3. ANALYSIS OF SERVICE DIFFICULTY INFORMATION

SECTION 1. DUTIES AND RESPONSIBILITIES

60. SAFETY DATA BRANCH, AFS-580.

a. Significant malfunctions, failures, and defects will be highlighted in the "Flight Standards Service Difficulty Reports, RIS: FS 8070-2," during the initial review of the Service Difficulty and Malfunction or Defect Reports. (See Appendix 3, Figure 6.) The specialist will use the following guidelines when selecting reports to be highlighted:

(1) Powerplants. Major internal components and parts thereof: noncontainment of parts, case burnthroughs and cracks, unwanted thrust reverser operation, and engine fires.

(2) Structure. Major primary structural parts (unusual cracks, corrosion, and deformation).

(3) Flight controls/control surfaces. Structural damage, unusual trim problem, vibration, flutter, cable failures, actuator failures, etc.

(4) Hydraulic power. Fluid/pressure loss, affecting controllability of the aircraft or landing gear actuation.

(5) Autoflight. Problems affecting controllability.

(6) Communications. Partial or complete loss of communication resulting in emergency action.

(7) Instrumentation. Multiple failure of like systems or equipment.

(8) Electrical power. Partial or complete loss of electrical power and fires resulting from electrical system malfunctions.

(9) Environmental Control Systems. Cabin pressurization or ventilation system failures which result in taking unscheduled or emergency corrective action.

b. AFS-580 will maintain the microfilm files of all service difficulty reports and control the microfilm distribution subject to disposal Order 1350.15, Records Organization, Transfer and Destruction Standards.

c. To detect adverse trends, AFS-580 will continually review all service difficulty information. When an adverse situation is noted, the specialist will prepare a System Analysis Summary Report. This report will be distributed to the responsible regional Engineering, Airworthiness Branches, or district office for action as necessary. The preparation and distribution of these reports are outlined in Chapter 4 of this Order.

d. When an AFS-580 specialist detects a problem area that requires emergency action, the specialist will notify, by telephone, the Service Difficulty Coordinator in the region having responsibility for the product, the principal inspector responsible for the maintenance or inspection system, and the appropriate Washington division.

61. FAA DISTRICT OFFICE. The following tasks will be accomplished by airworthiness/avionics/manufacturing inspectors in the review and followup of Service Difficulty and Malfunction or Defects Reports.

a. Review and provide follow-up action on all reported malfunctions, failures, and defects that are significant from a safety standpoint, on a daily basis.

b. Review the daily summary of Flight Standards Service Difficulty Reports, RIS: FS 8070-2, for problems that may be significant to the type aircraft or maintenance/inspection systems within their district. Particular attention should be given to those reports that are enclosed by a bold black * border slashed with white. Such reports should be brought to the attention of the operator, repair station, or manufacturer as appropriate. The operator's inspection program should be reviewed to ensure sufficient inspection of the areas where the failure occurred. A solid black border indicates a significant item; however, the field inspector's action is discretionary. *

c. Review the System Analysis and Summary Reports (RIS: FS 8070-53) that are compiled by the Maintenance Analysis Center. Those systems which reflect failure trends should be investigated to determine whether the assigned operator, repair station, or manufacturer is experiencing similar problems and their course of action. Maintenance and inspection programs should be evaluated to assure appropriate inspection and time limitations are provided for the affected part of the system. Information developed from an investigation, triggered by an SAS report concerning significant failures of systems which could have an effect on the safety of the aircraft, should be furnished to the airworthiness and engineering elements of the controlling region, through channels. A copy of this report should be forwarded to the appropriate Washington division.

d. When contacting operators, airmen, and air agencies, regarding daily "Flight Standards Service Difficulty Report" and "System Analysis and Summary Report" items, assure that they are advised to report all subsequent occurrences to FAA.

e. Manufacturing inspectors should review the above reports to determine if there are any indicated deficiencies in their certificate holder's production or quality control systems. If need arises, the responsible EMDO/AEDO should investigate and take necessary corrective action in accordance with regional policy.

SECTION 2. REPORT PREPARATION AND DISTRIBUTION

* 110. FLIGHT STANDARDS SERVICE DIFFICULTY REPORTS, RIS: FS 8070-2 (AIR CARRIER). This report is a daily compilation of all air carrier reports received on FAA Form 8070-1, Service Difficulties Report. (See Appendix 3, Figure 3.) They are disseminated to FAA Flight Standards personnel and certain segments of the aviation industry.

a. Flight Standards Service Difficulty Reports, RIS: FS 8070-2 (General Aviation). This report is a daily compilation of selected significant reports for which segments of the industry and FAA Flight Standards personnel have immediate need. These reports will be selected by the Safety Data Branch specialist during initial review.

b. Those reports, both general aviation and air carrier, that cite occurrences of a critical nature, will be highlighted by a bold black outline. Within the text block or directly beneath the report, a statement may be added to indicate that similar reports were received previously or on the same day. In some instances, a single report may be sufficient to warrant publication with the black outline. Certain items in general aviation reports (RIS: FS 8070-2) will be highlighted by a bold black outline slashed by white. This highlight is to alert FAA field personnel that actions specified in Chapter 3, Section 1, paragraph 61.(b), are required. Actions taken as a result of the solid black outline are discretionary. *

c. The Safety Data Branch, AFS-580, will produce the Flight Standards Service Difficulty Reports (RIS: FS 8070-2) and maintain a current distribution list of recipients in accordance with instructions of Washington divisions (AFS-200/800).

111. SYSTEM ANALYSIS AND SUMMARY REPORT, RIS: 8070-53. When analysis of Service Difficulty Program products indicates a specific problem and/or developing trends, the AFS-580 specialist will prepare a System Analysis
* Summary Report. The report will cover one subject failure but may include failures associated with or contributing to the primary subject failure. *

a. The report should highlight the components and parts of the system
* causing the problem and include a brief history of reports received to establish the rate of problem development. Graphs or charts may be used for this purpose. *

b. The report must be distributed to AFS-200, AFS-800, AFS-100, and
* to the Flight Standards Division of all regions. The region holding type certificate responsibility for the aircraft, product, or appliance will be responsible for positive action as that region deems appropriate. All regions will take appropriate actions related to inspection or maintenance programs which may be affected by the report. This will facilitate accurate distribution to those inspectors having certificate or surveillance responsibility for these inspections or maintenance programs, particular aircraft, or aircraft utilizing the system or part involved. *

* c. Problems discovered by field inspectors, as a result of surveillance emphasis generated by System Analysis and Summary Reports, will be reported on Malfunction or Defect Reports (FAA Form 8010-4) or Service Difficulty Reports (FAA Form 8070-1), as appropriate. Such reports assist in validating the trend indicated by the report and determining priority of corrective actions. *

d. If a trend or pattern continues after a System Analysis Summary Report has been forwarded to the office concerned, notification will be repeated in accordance with these procedures, unless the receiving office advises AFS-580 to withhold repetition.

112. POST ACCIDENT/INCIDENT REPORT. Following any accident or incident MAC * will, when requested by Washington elements, immediately provide a report to the requesting office. Offices having a need for post accident/incident reports should request the reports from the appropriate Washington division through their regions. *

a. The report will include the following information for the most current one-year period.

(1) SDRs for the aircraft involved in the accident/incident.

(2) Operators' utilization for the aircraft type versus industry utilization.

(3) Operators' engine shutdown rate per 1,000 hours versus industry shutdown rate for the aircraft type.

(4) The number of engines shutdown by the operator versus industry shutdowns for the aircraft type.

(5) Any other information specifically requested.

* (6) A copy of the report will also be sent to the region with certificate responsibility. *

b. When the requesting office can identify the suspect system(s) and so requires, AFS-580 will research and provide copies of other relevant information, such as ADs, service bulletins, and inspection aids.

c. The FAA coordinator/investigator will be furnished a copy of this report at the scene of the accident/incident by the most expeditious means. The person making the report request must provide AFS-580 with the necessary address. When the accident/incident is being investigated by the NTSB, two copies of the report will be sent to the FAA coordinator (one copy for the NTSB investigator).

113.-119. RESERVED.

SECTION 3. REQUEST FOR INFORMATION

120. GENERAL. The Safety Data Branch, AFS-580, maintains the Service Difficulty Program data system, a technical library of most common aviation products, and has access to a great variety of aviation information.

121. SERVICE DIFFICULTY INFORMATION. Personnel of Flight Standards and NTSB may request information from the data system of this program. The request should indicate the type of information needed, the time period over which data should be searched, and the type of report desired (computer listing, summarized report, etc.). It is also important that the AFS-580 specialist know what use is to be made of the report. He can then assure the user of the best possible product. Every effort will be made to provide the report in a timeframe that will most benefit the user.

a. Persons requesting service difficulty data need not be concerned with computer sorting formats. They should state, in plain language, the kind of information that is desired; and the Maintenance Analysis Center specialist will select the computer format that will present the information in the most usable manner. For example, if a person wants information concerning failures of retract cylinders on a Beech 99 or Boeing 707, ask for it in that manner (e.g., how many retract cylinder failures reported within the last year?), rather than trying to specify the computer sort. This will provide only that information that is requested rather than the whole computer printout. This saves computer and user time and allows better utilization of the system resources.

b. The request should specify when the information is needed. In high priority situations, such as an accident or serious incident, the Maintenance * Analysis Center can provide the information within four hours. Depending upon the situation, other response times are available; e.g., 24 hours, 7 days, 14 days, or 30 days. The user is requested to apply good judgment relative * to priorities since computer programs must be interrupted in order to make the interrogation for requested data.

c. Technical data requested may be furnished via telephone, telecopier, special printout, or in summary form. (Printouts and summaries are mailed.) The MAC specialist will make every effort to provide the data to the individual within the specified response time.

122. OTHER AERONAUTICAL INFORMATION. Personnel of Flight Standards may request technical data other than service difficulty information to assist in identification of problem areas in aircraft and/or a particular fleet. When possible, AFS-580 will research Aeronautical Center data sources and furnish such information.

123. RELEASE OF SERVICE DIFFICULTY REPORTS TO THE PUBLIC. Service Difficulty Reports are releasable to the public under the provisions of the Freedom of Information Act (5 U.S.C. 552), as implemented by Part 7 of the Department of Transportation Regulations. Payment of fees will be in accordance with Section 7.38 of Title 49, Part 7, Department of Transportation Regulations.

* a. Obtaining Service Difficulty Data. Service Difficulty Reports are available for retrieval for a period of 60 months following their receipt by AFS-580. All requests for copies of service difficulty information will * be handled by the Safety Data Branch, AFS-580. Inquiries should be addressed to:

Department of Transportation
Federal Aviation Administration
Flight Standards National Field Office
Safety Data Branch, AFS-580
P.O. Box 25082
Oklahoma City, Oklahoma 73125

b. Persons Requesting Service Difficulty Information should allow sufficient time between their request and their need for the information to
* provide adequate search and retrieval time. *

(1) Regional offices receiving direct requests for copies of Service Difficulty Reports should acknowledge those requests with a Correspondence Acknowledgement Card, FAA Form 1360-15. The request, along with a statement that FAA Form 1360-15 has been sent to the requester, will be forwarded to AFS-580.

(2) When copying of local region records is necessary, the copies should be made and accompany the request that is forwarded to AFS-580.

(3) AFS-580 will advise requester of the cost for services and respond to all requests.

(4) Requests directed to AFS-580. The Safety Data Branch will attempt to satisfy requests from the storage/retrieval system at the Aeronautical Center and will call upon the region in those cases where records/reports are only available locally.

124.-129. RESERVED.

CHAPTER 5. PRODUCTS OF THE SERVICE DIFFICULTY PROGRAM

SECTION 1. GENERAL AVIATION AIRWORTHINESS ALERTS -- DEVELOPMENT AND PREPARATION

* 130. PURPOSE. The General Aviation Airworthiness Alerts provide a common communications channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. *

* 131. SELECTION OF ITEMS. Items suitable for publication as General Aviation Airworthiness Alerts, AC 43-16, will be generated and developed by personnel of AFS-580, by the region having type certificate responsibility, by direction of the Service Difficulty Board or by the General Aviation Division, AFS-800. The following procedures outline methods of selection: *

a. Personnel of AFS-580, while analyzing readout data from the ADP data bank, shall select safety information concerning noteworthy or unsafe * conditions for publication in AC 43-16. Items selected should be of assistance to maintenance and inspection personnel in performance of their duties. The items selected should be in brief descriptive language and in a form suitable for publication in order that time-consuming rewrite and editing are not required. For example: *

BEECH MODEL 99	WINDSHIELD WIPER	Reports indicate the P/N50-380050-windshield wiper arms are cracking and breaking.
	or	
GRUMMAN MODEL G-159	FIRE WARNING SYSTEM	A number of reports indicate shorts in the sensing elements and fire detector unit connector are attributable to the presence of moisture.

However, brevity should not compromise clarity. If time is not a factor, AFS-580 may coordinate the item with the type certificate holding region.

b. Personnel of regions holding type certificate responsibility shall select items such as those described above. Items which do not concern a specific aeronautical product, or which may apply to several products, * may also be selected as "general information" items. Selected items will be forwarded monthly to the FAA, Flight Standards National Field Office, AFS-580, in a report, Summary Report of Safety Items Reviewed (RIS: FS 8330-2), containing a summary of the items selected for publication in AC 43-16. *

(1) The items should be in brief, descriptive language similar to the illustrations in paragraph 131a.

(2) From time-to-time, a region may determine that an item should receive expeditious treatment. These items should be marked "Preferred Handling." AFS-580 personnel will process these items accordingly.

c. On occasion, the Service Difficulty Board will determine the need * for items to be published in AC 43-16. In this event, the data will be * transmitted to AFS-580 who will prepare it for publication in accordance with subparagraph a. of this paragraph.

132. REGIONAL COORDINATION. Hazardous or alert type service difficulty items reported under the provisions of paragraph 110 of this order, which by their very nature have a strong possibility of regional corrective * action in process, will be withheld from the General Aviation Airworthiness Alerts (AC 43-16) publication for a period of 15 days after the telecon * prescribed by paragraph 34a(3). During this time, it is the responsibility of the controlling region to either:

a. Advise AFS-580 that the item should be published as an "Alert"; or

b. Advise AFS-580 that the corrective action instituted by the region precludes the necessity for such publication.

c. In the event that the region does not advise AFS-580 per a. or b. above, the item will be subject to processing by AFS-580 for publication.

133.-149. RESERVED.

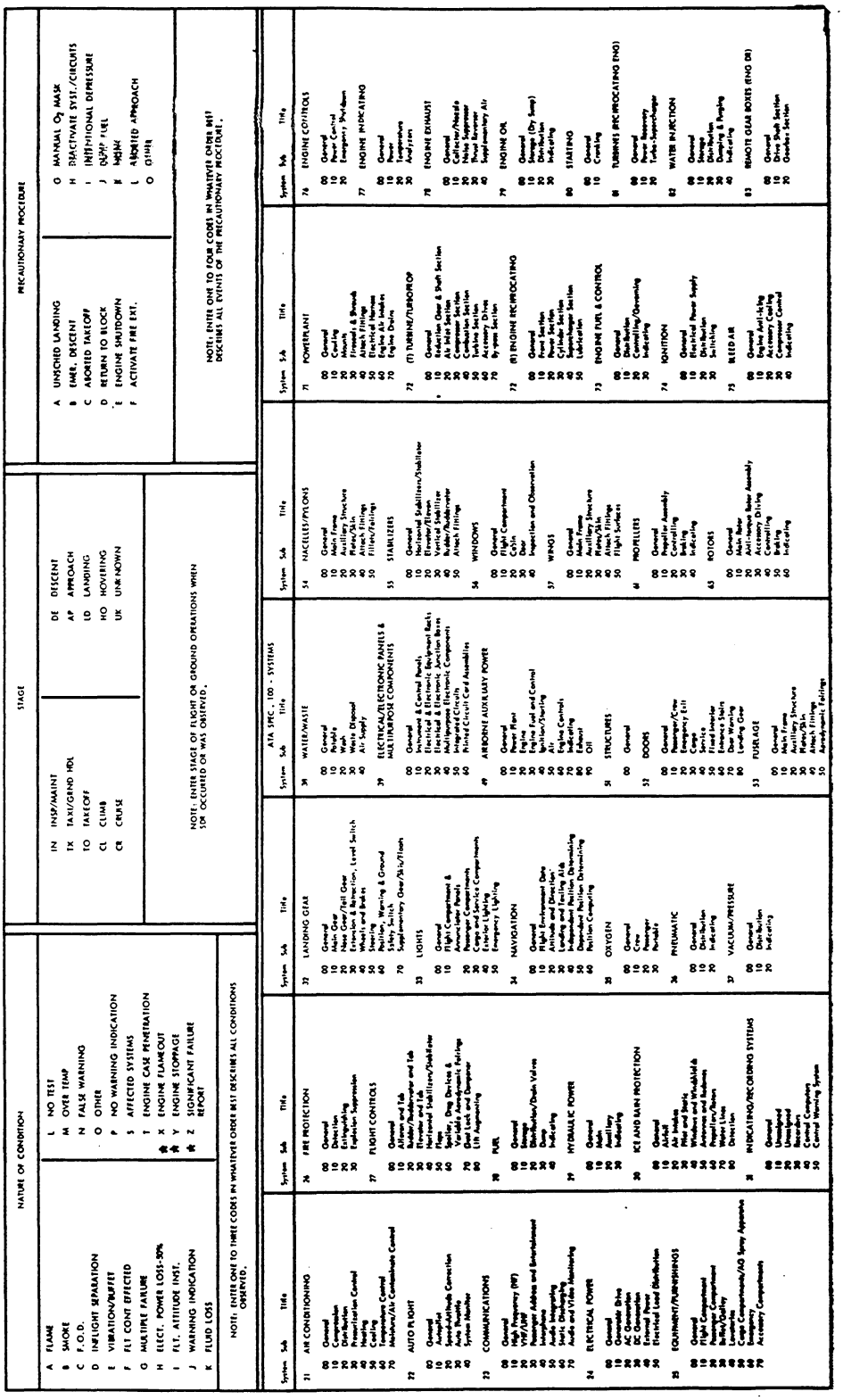
APPENDIX 1. REGIONAL SDR COORDINATORS AND SAFETY DATA BRANCH

	Region		Coordinator & Alternate	Phone No.	
	AAL		Edward Allen (AAL-252)	FTS (8) 907/265-4252	
		alt.	Dale L. Hanson (GADO-1)	FTS (8) 907/265-4657	
	ACE		Glenn Martin (GADO-22)	FTS (8) 752-6523 Comm 316/943-3244	
*	AEA		Donald J. Wisner (AEA-250.2)	FTS (8) 665-3300	
		alt.	Lawrence Bottie (AEA-252.0)	Comm 212/995-3300	*
**	AEU				
*	AGL		Cornelius Biemond (AGL-217)	FTS (8) 384-9460 Comm 312/694-4500/9460	*
	ANE		Robert A. Schilling (ANE-251)	FTS (8) 836-1326/1344	
		alt.	Edward L. Park (ANE-256)	Comm 617/273-7326/7344	
	ANW		Marion Shaw (ANW-254)	FTS (8) 396-2773 Comm 206/767-2773	
	APC		Richard G. Teixeira (APC-240)	FTS (8) 808/546-8652	
		alt.	Gary K. Nakagawa (APC-210)	FTS (8) 808/546-8650	
	ASO		Richard L. Aaron (ASO-250)	FTS (8) 246-7411 Comm 404/763-7411	
*	ARM		Charles R. Taylor (ARM-250)	FTS (8) 327-4188	
		alt.	Roman B. Mueller (ARM-250)	Comm 303/837-4188	
	ASW		John P. Donnelly (ASW-257)	FTS (8) 736-9543	
		alt.	James R. Woehr (ASW-258)	Comm 817/624-4911	*
	AWE		Jerry Presba (AWE-104)	FTS (8) 966-6351 Comm 213/536-6351	

**No coordinator assigned.

Safety Data Branch, AFS-580	FTS (8) 732-4391 Comm 405/686-4391	
Maintenance Analysis Center	FTS (8) 732-4171 Comm 405/686-4171/4351	
* Data Review Section	FTS (8) 732-4351 Comm 405/686-2542	*

APPENDIX 2. SERVICE DIFFICULTY PROGRAM CODING SHEET



SERVICE DIFFICULTY PROGRAM CODING SHEET

NATURE OF CONDITION

A FLAME	L NO TEST	
B SMOKE	M OVER TEMP	
C F.O.D.	N FALSE WARNING	
D INFLIGHT SEPARATION	O OTHER	
E VIBRATION/BUFFET	P NO WARNING INDICATION	
F FLT CONT EFFECTED	S AFFECTED SYSTEMS	
G MULTIPLE FAILURE	T ENGINE CASE PENETRATION	
H ELECT. POWER LOSS-30%	** X ENGINE FLAMEOUT	
I FLT. ATTITUDE INST.	** Y ENGINE STOPPAGE	
J WARNING INDICATION	* Z SIGNIFICANT FAILURE REPORT	
K FLUID LOSS		

NOTE: ENTER ONE TO THREE CODES IN WHATEVER ORDER BEST DESCRIBES ALL CONDITIONS OBSERVED.

STAGE

IN	INSP/MAINT	DE	DESCENT
TX	TAXI/GRND MDL	AP	APPROACH
TO	TAKEOFF	LD	LANDING
CL	CLIMB	HO	HOVERING
CR	CRUISE	UK	UNKNOWN

NOTE: ENTER STAGE OF FLIGHT OR GROUND OPERATIONS WHEN SDR OCCURRED OR WAS OBSERVED.

PRECAUTIONARY PROCEDURE

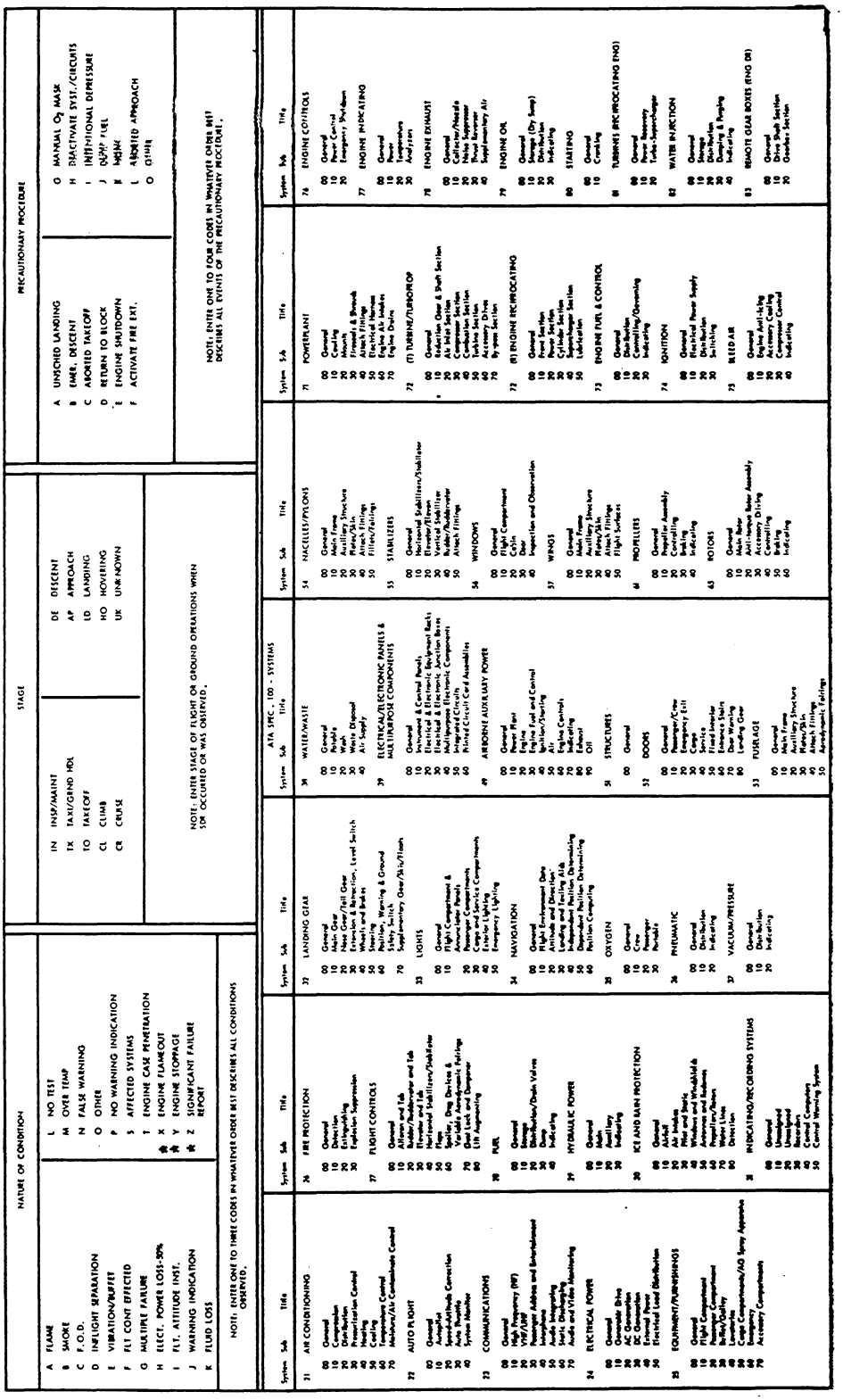
A	UNSCHED LANDING	O	MANUAL O_2 MASK
B	EMER. DESCENT	H	DEACTIVATE SYST./CIRCUITS
C	ABORTED TAKEOFF	I	INTENTIONAL DEPRESSURE
D	RETURN TO BLOCK	J	DUMP FUEL
E	ENGINE SHUTDOWN	K	HOLD
F	ACTIVATE FIRE EXT.	L	ABORTED APPROACH
		O	OTHER

NOTE: ENTER ONE TO FOUR CODES IN WHATEVER ORDER BEST DESCRIBES ALL EVENTS OF THE PRECAUTIONARY PROCEDURE.

ATA SPEC. 100 - SYSTEMS

System	Sub	Title
21		AIR CONDITIONING
	00	General
	10	Compression
	20	Distribution
	30	Pressurization Control
	40	Heating
	50	Cooling
	60	Temperature Control
	70	Moisture/Air Contaminate Control
22		AUTO FLIGHT
	00	General
	10	Speed/Attitude Correction
	20	Auto Throttle
	30	System Monitor
23		COMMUNICATIONS
	00	General
	10	HF/SSB (Frequency (RF)
	20	Interphone
	30	Passenger Address and Entertainment
	40	Audio Integrating
	50	Static Discharging
	60	Audio and Video Monitoring
24		ELECTRICAL POWER
	00	General
	10	Generator Drive
	20	AC Generation
	30	DC Generation
	40	External Power
	50	Electrical Load Distribution
25		EQUIPMENT/FURNISHINGS
	00	General
	10	Flight Compartment
	20	Passenger Compartment
	30	Buffet/Galley
	40	Lavatories
	50	Cargo Compartments/AG Spray Apparatus
	60	Emergency Equipment
	70	Accessory Compartments
26		FIRE PROTECTION
	00	General
	10	Detection
	20	Extinguishing
	30	Explosion Suppression
27		FLIGHT CONTROLS
	00	General
	10	Aileron/Aileron and Tab
	20	Elevator and Tab
	30	Horizontal Stabilizer/Stabilizer
	40	Rudder
	50	Trim
	60	Stalls, Prop Devices & Variable Aerodynamic Fairings
	70	Gust Lock and Dampener
	80	Lift Augmenting
28		FUEL
29		HYDRAULIC POWER
	00	General
	10	Auxiliary
	20	Indicating
30		ICE AND RAIN PROTECTION
	00	General
	10	Airfoil
	20	Windows
	30	Windshield Wipers
	40	Windows and Windshields
	50	Antennas and Radomes
	60	Water Lines
	70	Detection
31		INDICATING/RECORDING SYSTEMS
	00	General
	10	Unassigned
	20	Unassigned
	30	Central Computers
	40	Central Warning System
32		LANDING GEAR
	00	General
	10	Main Gear
	20	Nose Gear/Tail Gear
	30	Retraction & Extension, Level Switch
	40	Wheels and Brakes
	50	Steering
	60	Position, Warning & Ground Safety Switch
	70	Supplementary Gear/Skis/Floats
33		LIGHTS
	00	General
	10	Flight Compartment & Instrument Panels
	20	Passenger Compartments
	30	Cockpit/Cabin Entrance Compartments
	40	Exterior Lighting
	50	Emergency Lighting
34		NAVIGATION
	00	General
	10	Flight Environment Data
	20	Attitude and Direction
	30	Flight Management Aids
	40	Independent Position Determining
	50	Dependent Position Determining
	60	Position Computing
35		OXYGEN
	00	General
	10	Crew
	20	Passenger
	30	Portable
36		PNEUMATIC
	00	General
	10	Distribution
	20	Indicating
37		VACUUM/PRESSURE
	00	General
	10	Distribution
	20	Indicating
38		WATER/WASTE
	00	General
	10	Potable
	20	Waste Disposal
	40	Air Supply
39		ELECTRICAL/ELECTRONIC PANELS & MULTIPURPOSE COMPONENTS
	00	General
	10	Instrument & Control Panels
	20	Electrical & Electronic Equipment Racks
	30	Electrical & Electronic Junction Boxes
	40	Multipurpose Electronic Components
	50	Integrated Circuits
	60	Printed Circuit Card Assemblies
49		AIRBORNE AUXILIARY POWER
	00	General
	10	Engine/Fuel
	20	Engine Fuel and Control
	30	Ignition/Starting
	40	Engine Controls
	50	Indicating
	70	Exhaust
	80	Oil
51		STRUCTURES
	00	General
52		DOORS
	00	General
	10	Passenger/Crew
	20	Emergency Exit
	30	Cargo
	40	Service
	50	Flight Deck/Cockpit
	60	Entrance Stairs
	70	Door Warning
	80	Landing Gear
53		FUSELAGE
	00	General
	10	Main Frame
	20	Auxiliary Structure
	30	Plating/Skin
	40	Attachment Fittings
	50	Access Doors/Openings
54		NACELLES/PYLONS
	00	General
	10	Main Frame
	20	Auxiliary Structure
	30	Plating/Skin
	40	Attach Fittings
	50	Fillets/Fairings
55		STABILIZERS
	00	General
	10	Horizontal Stabilizer/Stabilizer
	20	Elevator/Flaps
	30	Vertical Stabilizer
	40	Rudder/Rudderevator
	50	Attach Fittings
56		WINDOWS
	00	General
	10	Flight Compartment
	20	Cabin
	30	Inspection and Observation
57		WINGS
	00	General
	10	Main Frame
	20	Auxiliary Structure
	30	Plating/Skin
	40	Attach Fittings
	50	Flight Surfaces
61		PROPELLERS
	00	General
	10	Propeller Assembly
	20	Controlling
	30	Sealing
	40	Indicating
63		ROTORS
	00	General
	10	Main Rotor Blade Assembly
	20	Accessory Driving
	30	Controlling
	40	Sealing
	50	Indicating
71		POWERPLANT
	00	General
	10	Cowling
	20	Mounts
	30	Firewalls & Shrouds
	40	Attach Fittings
	50	Electrical Harness
	60	Engine Air Intakes
	70	Engine Drains
72		(T) TURBINE/TURBOPROP
	00	General
	10	Reduction Gear & Shaft Section
	20	Air Inlet Section
	30	Compressor Section
	40	Combustion Section
	50	Turbine Section
	60	Accessory Drives
	70	Bypass Section
73		(R) ENGINE (RECIPROCATING
	00	General
	10	Power Section
	20	Cylinder Section
	30	Supercharger Section
	50	Lubrication
73		ENGINE FUEL & CONTROL
	00	General
	10	Distribution
	20	Controlling/Governing
	30	Indicating
74		IGNITION
	00	General
	10	Electrical Power Supply
	20	Distribution
	30	Switching
75		BLEED AIR
	00	General
	10	Engine Anti-Icing
	20	Accessory Cooling
	30	Compressor Control
	40	Indicating
76		ENGINE CONTROLS
	00	General
	10	Power Control
	20	Emergency Shutdown
77		ENGINE INDICATING
	00	General
	10	Power
	20	Temperature
	30	Analyzers
78		ENGINE EXHAUST
	00	General
	10	Collector/Nozzle
	20	Noise Suppressor
	30	Thrust Reverser
	40	Supplementary Air
79		ENGINE OIL
	00	General
	10	Storage (Dry Sump)
	20	Distribution
	30	Indicating
80		STARTING
	00	General
	10	Cranking
81		TURBINES (RECIPROCATING ENG)
	00	General
	10	Power Recovery
	20	Turbo-Supercharger
82		WATER INJECTION
	00	General
	10	Storage
	20	Distribution
	30	Dumping & Purging
	40	Indicating
83		REMOTE GEAR BOXES (ENG DR)
	00	General
	10	Drive Shaft Section
	20	Gearbox Section

APPENDIX 2. SERVICE DIFFICULTY PROGRAM CODING SHEET



SERVICE DIFFICULTY PROGRAM CODING SHEET

NATURE OF CONDITION

A FLAME	L NO TEST	
B SMOKE	M OVER TEMP	
C F.O.D.	N FALSE WARNING	
D INFLIGHT SEPARATION	O OTHER	
E VIBRATION/BUFFET	P NO WARNING INDICATION	
F FLT CONT EFFECTED	S AFFECTED SYSTEMS	
G MULTIPLE FAILURE	T ENGINE CASE PENETRATION	
H ELECT. POWER LOSS-30%	** X ENGINE FLAMEOUT	
I FLT. ATTITUDE INST.	** Y ENGINE STOPPAGE	
J WARNING INDICATION	* Z SIGNIFICANT FAILURE REPORT	
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NOTE: ENTER ONE TO THREE CODES IN WHATEVER ORDER BEST DESCRIBES ALL CONDITIONS OBSERVED.

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C	ABORTED TAKEOFF	I	INTENTIONAL DEPRESSURE
D	RETURN TO BLOCK	J	DUMP FUEL
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NOTE: ENTER ONE TO FOUR CODES IN WHATEVER ORDER BEST DESCRIBES ALL EVENTS OF THE PRECAUTIONARY PROCEDURE.

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	40	Heating
	50	Cooling
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22		AUTO FLIGHT
	00	General
	10	Speed/Attitude Correction
	20	Auto Throttle
	30	System Monitor
23		COMMUNICATIONS
	00	General
	10	HF/SSB (Frequency (RF)
	20	Interphone
	30	Passenger Address and Entertainment
	40	Audio Integrating
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	20	AC Generation
	30	DC Generation
	40	External Power
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25		EQUIPMENT/FURNISHINGS
	00	General
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	20	Passenger Compartment
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	50	Cargo Compartments/AG Spray Apparatus
	60	Emergency Equipment
	70	Accessory Compartments
26		FIRE PROTECTION
	00	General
	10	Detection
	20	Extinguishing
	30	Explosion Suppression
27		FLIGHT CONTROLS
	00	General
	10	Aileron/Aileron and Tab
	20	Elevator and Tab
	30	Horizontal Stabilizer/Stabilizer
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	50	Trim
	60	Stalls, Prop Devices & Variable Aerodynamic Fairings
	70	Gust Lock and Dampener
	80	Lift Augmenting
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29		HYDRAULIC POWER
	00	General
	10	Auxiliary
	20	Indicating
30		ICE AND RAIN PROTECTION
	00	General
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	20	Windows
	30	Windshield Wipers
	40	Windows and Windshields
	50	Antennas and Radomes
	60	Water Lines
	70	Detection
31		INDICATING/RECORDING SYSTEMS
	00	General
	10	Unassigned
	20	Unassigned
	30	Central Computers
	40	Central Warning System
32		LANDING GEAR
	00	General
	10	Main Gear
	20	Nose Gear/Tail Gear
	30	Retraction & Extension, Level Switch
	40	Wheels and Brakes
	50	Steering
	60	Position, Warning & Ground Safety Switch
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	00	General
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	40	Exterior Lighting
	50	Emergency Lighting
34		NAVIGATION
	00	General
	10	Flight Environment Data
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	30	Flight Management Aids
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	50	Dependent Position Determining
	60	Position Computing
35		OXYGEN
	00	General
	10	Crew
	20	Passenger
	30	Portable
36		PNEUMATIC
	00	General
	10	Distribution
	20	Indicating
37		VACUUM/PRESSURE
	00	General
	10	Distribution
	20	Indicating
38		WATER/WASTE
	00	General
	10	Potable
	20	Waste Disposal
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	00	General
	10	Engine/Fuel
	20	Engine Fuel and Control
	30	Ignition/Starting
	40	Engine Controls
	50	Indicating
	70	Exhaust
	80	Oil
51		STRUCTURES
	00	General
52		DOORS
	00	General
	10	Passenger/Crew
	20	Emergency Exit
	30	Cargo
	40	Service
	50	Flight Deck/Cockpit
	60	Entrance Stairs
	70	Door Warning
	80	Landing Gear
53		FUSELAGE
	00	General
	10	Main Frame
	20	Auxiliary Structure
	30	Plating/Skin
	40	Attachment Fittings
	50	Access Doors/Openings
54		NACELLES/PYLONS
	00	General
	10	Main Frame
	20	Auxiliary Structure
	30	Plating/Skin
	40	Attach Fittings
	50	Fillets/Fairings
55		STABILIZERS
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	30	Vertical Stabilizer
	40	Rudder/Rudderevator
	50	Attach Fittings
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	00	General
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	20	Cabin
	30	Inspection and Observation
57		WINGS
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	10	Main Frame
	20	Auxiliary Structure
	30	Plating/Skin
	40	Attach Fittings
	50	Flight Surfaces
61		PROPELLERS
	00	General
	10	Propeller Assembly
	20	Controlling
	30	Sealing
	40	Indicating
63		ROTORS
	00	General
	10	Main Rotor Blade Assembly
	20	Accessory Driving
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	50	Indicating
71		POWERPLANT
	00	General
	10	Cowling
	20	Mounts
	30	Firewalls & Shrouds
	40	Attach Fittings
	50	Electrical Harness
	60	Engine Air Intakes
	70	Engine Drains
72		(T) TURBINE/TURBOPROP
	00	General
	10	Reduction Gear & Shaft Section
	20	Air Inlet Section
	30	Compressor Section
	40	Combustion Section
	50	Turbine Section
	60	Accessory Drives
	70	Bypass Section
73		(R) ENGINE (RECIPROCATING
	00	General
	10	Power Section
	20	Cylinder Section
	30	Supercharger Section
	50	Lubrication
73		ENGINE FUEL & CONTROL
	00	General
	10	Distribution
	20	Controlling/Governing
	30	Indicating
74		IGNITION
	00	General
	10	Electrical Power Supply
	20	Distribution
	30	Switching
75		BLEED AIR
	00	General
	10	Engine Anti-Icing
	20	Accessory Cooling
	30	Compressor Control
	40	Indicating
76		ENGINE CONTROLS
	00	General
	10	Power Control
	20	Emergency Shutdown
77		ENGINE INDICATING
	00	General
	10	Power
	20	Temperature
	30	Analyzers
78		ENGINE EXHAUST
	00	General
	10	Collector/Nozzle
	20	Noise Suppressor
	30	Thrust Reverser
	40	Supplementary Air
79		ENGINE OIL
	00	General
	10	Storage (Dry Sump)
	20	Distribution
	30	Indicating
80		STARTING
	00	General
	10	Cranking
81		TURBINES (RECIPROCATING ENG)
	00	General
	10	Power Recovery
	20	Turbo-Supercharger
82		WATER INJECTION
	00	General
	10	Storage
	20	Distribution
	30	Dumping & Purging
	40	Indicating
83		REMOTE GEAR BOXES (ENG DR)
	00	General
	10	Drive Shaft Section
	20	Gearbox Section

*

APPENDIX 5. SDR SYSTEM MANUFACTURER IDENTIFICATION CODES

The contents of these manufacturers' code identification listing conform to the Department of Transportation, Federal Aviation Administration, Air Traffic Service Contractions Handbook 7340.1, where possible. The sole purpose of this listing is to provide a standard prefix to the aircraft model number, thus identifying the aircraft/engine manufacturer. They are to be used only in the aircraft type block, the text of the "Problem Description" section of the Service Difficulty Report (FAA Form 8070-1), and the manufacture (MFG) blocks of the Air Carrier Aircraft/Engine Utilization Report (AC Form 8320-1).

FIGURE 1. AIRCRAFT MANUFACTURER IDENTIFICATION CODES

Acft Mfr	Mfr Code	Acft Mfr	Mfr Code
Aero Commander	AC	Grumman	G
Aeronca	AR	Hamburger Flugzeugbau	HF
Aerostar	AS	Handley Page	HP
Airbus International	A	Hawker Siddeley	HA
American	AA	Helio	HE
Arctic	AT	Hiller	HL
Avions Marcel Dassault	MD	Howard	HW
Beagle	BT	Hughes	HU
Beech	BE	Hynes	HN
Bell	HB	Industrie Aeronautiche	IA
Bellanca	BL	Israel	IL
Boeing	B	Jobmaster	JM
British Aircraft Corp.	BA	Kaman	K
Britten Norman	BN	Kreitzberg	GF
Camair	CM	Lear	LR
Canadair	CL	Lockheed	L
Cessna	C	Luscombe	LU
Consolidated	CO	Martin	M
Convair	CV	Maule	ML
Curtis Wright	CW	McBemas	MB
DeHavilland	DH	McClish	MH
Douglas (McDonnell)	DC	McCulloch	MC
Downer	DO	Mitchell	MT
Enstrom	EN	Mitsubishi	MU
Fairchild	F	Monocoupe	MN
Fairchild Hiller	FH	Mooney	MO
Fletcher	FL	Morane Saulnier	MS
Garcia	TR	Navion	NA
Glasflugel	H	Nihon	YS
Goodyear	GZ	Nord	ND

*

FIGURE 1. AIRCRAFT MANUFACTURER IDENTIFICATION CODES (Cont'd)

Acft Mfr	Mfr Code	Acft Mfr	Mfr Code
North American	N	Sikorsky	SK
Philco Ford	FR	Smith	SM
Piaggio Renaldo	PR	Societe Nationale	SO
Pilatus	PL	Spartan	SP
Pine Air	PN	Stinson	ST
Piper	PA	Stol	SL
Raven	RA	Sud Aviation	SE
Rawdon	RD	Superior	SU
Reims	RE	Swearingen	SW
Rhein Flugzeughau	RH	Taylorcraft	TC
Rockwell (North American)	RW	Temco	TE
Roos	RS	Thurston	TH
Rose Aeroplane	RP	Trytek	TK
Ryan	RY	Universal	UN
Scheibe Flugzeughau	SF	Vertol	VT
Schempp Hirth	S	Vickers	VC
Schleicher	SR	Waco	WA
Schweizer	SC	Weatherly	WE
Short Brothers	SH	Windecker	WD

* FIGURE 2. AIRCRAFT MANUFACTURER IDENTIFICATION CODES (ALPHABETICAL)

Acft Mfr	Mfr Code	Acft Mfr	Mfr Code
A	Airbus International	L	Lockheed
AA	American	LR	Lear
AC	Aero Commander	LU	Luscombe
AR	Aeronca	M	Martin
AS	Aerostar	MB	McBemas
AT	Arctic	MC	McCulloch
B	Boeing	MD	Avions Marcel Dassault
BA	British Aircraft Corp.	MH	McClish
BE	Beech	ML	Maule
BL	Bellanca	MN	Monocoupe
BN	Britten Norman	MO	Mooney
BT	Beagle	MS	Morane Saulnier
C	Cessna	MT	Mitchell
CL	Canadair	MU	Mitsubishi
CM	Camair	N	North American
CO	Consolidated	NA	Navion
CV	Convair	ND	Nord
CW	Curtis Wright	PA	Piper
DC	Douglas (McDonnell)	PL	Pilatus
DH	DeHavilland	PN	Pine Air
DO	Downer	PR	Piaggio Renaldo
EN	Enstrom	RA	Raven
F	Fairchild	RD	Rawdon
FH	Fairchild Hiller	RE	Reims
FL	Fletcher	RH	Rhein Flugzeugbau
FR	Philco Ford	RP	Rose Aeroplane
G	Grumman	RS	Roos
GF	Kreitzberg	RW	Rockwell (North American)
GZ	Goodyear	RY	Ryan
H	Glasflugel	S	Schempp Hirth
HA	Hawker Siddeley	SC	Schweizer
HB	Bell	SE	Sud Aviation
HE	Helio	SF	Scheibe Flugzeugbau
HF	Hamburger Flugzeugbau	SH	Short Brothers
HP	Handley Page	SK	Sikorsky
HL	Hiller	SL	Stol
HN	Hynes	SM	Smith
HU	Hughes	SO	Societe Nationale
HW	Howard	SP	Spartan
IA	Industrie Aeronautiche	SR	Schleicher
IL	Israel	ST	Stinson
JM	Jobmaster	SU	Superior
K	Kaman	SW	Swearingen

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* FIGURE 2. AIRCRAFT MANUFACTURER IDENTIFICATION CODES (ALPHABETICAL) (Cont'd)

Acft Mfr	Mfr Code	Acft Mfr	Mfr Code
TC	Taylorcraft	VC	Vickers
TE	Temco	VT	Vertol
TH	Thurston	WA	Waco
TK	Trytek	WD	Windecker
TR	Garcia	WE	Weatherly
UN	Universal	YS	Nihon

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* FIGURE 3. ENGINE MANUFACTURER IDENTIFICATION CODES

CODE	
ARCH	Airesearch Manufacturing Company
ALSN	Allison Division, General Motors Corporation
CONT	Teledyne Continental Motors
FKLN	Franklin Engine Company, Incorporated
GE	General Electric Company
JCOB	Jacobs Aircraft Engine Company
LYC	Lycoming Division of AVCO Corporation
PWA	Pratt & Whitney Aircraft Division of United Aircraft Corporation, Division of United Technology Corporation, and United Aircraft of Canada
RR	Rolls Royce, Limited
TMCA	Turbomeca
WAD	Wright Aeronautical Division *