

# **National Transportation Safety Board**

Washington, D.C. 20594

## **Safety Recommendation**

Date: November 29, 2001

**In reply refer to:** A-01-73 through -80

Honorable Jane F. Garvey Administrator Federal Aviation Administration Washington, D.C. 20591

Section 702 of Public Law 106-181, the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Air-21), directed the National Transportation Safety Board to "conduct a study to compare the safety of public aircraft and civil aircraft," and to review safety statistics on aircraft operations since 1993. <sup>1</sup>

## **Background**

The term "public aircraft" refers not to a specific population of aircraft, but to government-sponsored flights meeting specific criteria laid out in the *Code of Federal Regulations* (CFR). Essentially, public aircraft operations are a subset of government-sponsored aircraft operations. Public aircraft status means, among other things, that an aircraft will not be subject to some of the regulatory requirements applicable to "civil" (or civilian) aircraft. Although the precise statutory definition has changed over the years, public aircraft operations generally include law enforcement, low-level observation, aerial application, firefighting, search and rescue, biological or geological resource management, and aeronautical research.<sup>3</sup>

Because public aircraft operators are exempted from certain aviation safety regulations, government organizations conducting public aircraft operations supervise their own flight operations without oversight from the Federal Aviation Administration (FAA). Oversight policies are most clearly specified at the Federal level. A circular issued by the U.S. Office of Management and Budget (OMB) has guided aircraft management at executive agencies of the Federal government since 1983.<sup>4</sup> A 1989 revision of the circular directed the U.S. General Services Administration (GSA) to create and maintain a single office responsible for oversight of Federal aircraft management and to establish a single interagency committee for assisting the GSA in this role. This led to the creation of the Interagency Committee for Aviation Policy

<sup>&</sup>lt;sup>1</sup> National Transportation Safety Board, *Public Aircraft Safety*, Safety Study NTSB/SS-01/01 (Washington, DC: NTSB, 2001).

<sup>&</sup>lt;sup>2</sup> Although all aircraft must follow certain sections of 14 CFR Part 91 of the Federal Aviation Regulations, public aircraft operators do not have to comply with safety regulations, including maintenance rules under 14 CFR Part 43 or pilot certification standards under 14 CFR Part 61.

<sup>&</sup>lt;sup>3</sup> Aircraft used by the Department of Defense are also public aircraft, but the Safety Board's study considered only nonmilitary, nonintelligence aircraft.

<sup>&</sup>lt;sup>4</sup> OMB Circular A-126 "Improving the Management and Use of Government Aircraft."

(ICAP).<sup>5</sup> A 1992 revision of the circular specified, among other things, requirements for aviation safety programs within Federal agencies, adding the responsibility for collecting accident and incident data. In addition, the revision recommended that Federal agencies adhere voluntarily to portions of the Federal Aviation Regulations from which they were exempted. Subsequent studies by a Senate committee chaired by Senator Jim Sasser<sup>6</sup> and by the President's Council on Integrity and Efficiency (PCIE)<sup>7</sup> found numerous shortcomings in the Federal government's oversight of aircraft utilization and safety.

In 1997, the Associate Administrator, Office of Governmentwide Policy, GSA, established an independent Aircraft Management Policy Advisory Board to examine all aspects of the management of federally sponsored aviation programs, including safety aspects. In June 1998, the advisory board reported that, although progress had been made on the issues raised in the Sasser and PCIE reports, fundamental problems remained, and these problems stemmed from a lack of independent safety oversight of Federal aircraft operations. In addition, the advisory board referred to "a continuing questioning of GSA's role in Federal public aircraft management," stating, "there is widespread uncertainty about who is in charge, and there is no clear enforcement authority." As a result of these findings, the advisory board recommended: (a) the revision of OMB Circular A-126 to better define GSA's authority to set aircraft management policy and safety guidelines, (b) the proposal of statutory language to Congress that would place the responsibility for regulation, oversight, and enforcement of all Federal government aircraft operations on the FAA, and (c) the allocation of resources to the FAA commensurate with this increase in responsibilities.<sup>8</sup> The advisory board also recommended that the GSA associate administrator be designated chair of the ICAP, and that ICAP member agencies appoint representatives of equivalent stature to ease GSA's dealings with the member agencies on matters involving aircraft management.

Since the release of the advisory board's recommendations, GSA has assisted the OMB in drafting a revision of Circular A-126. GSA also drafted a revision of its own regulations, to be contained in 41 CFR 102-33, to better define its authority for aircraft management. Both revisions are being reviewed by OMB and have yet to be formally approved. The GSA deputy associate administrator met with representatives of the FAA and congressional staff members in mid-1998 to discuss the advisory board's recommendation that GSA propose statutory language to Congress placing the responsibility for regulation, oversight, and enforcement of all Federal government aircraft operations on the FAA. According to a representative of the GSA's Aircraft Management Policy Division, neither the FAA nor congressional staff members present at that meeting were receptive to the recommendation. No further action has been taken. In other developments, the GSA has designated its associate administrator as the chair of ICAP, and some

<sup>&</sup>lt;sup>5</sup> The GSA established the ICAP in 1989 at the direction of the OMB. The GSA chairs the committee. About 17 Federal agencies are members, although this number varies from year to year. With advice from ICAP, the GSA makes policy for Federal aviation management.

<sup>&</sup>lt;sup>6</sup> United States Senate Committee on Governmental Affairs, Subcommittee on General Services, Federalism, and the District of Columbia [Jim Sasser, Chairman], *Management of Federal Civilian Aircraft: Findings and Recommendations* (Washington, DC: U.S. Senate, April 2, 1993).

<sup>&</sup>lt;sup>7</sup> President's Council on Integrity and Efficiency, *Combined Report on the Federal Civilian Agencies' Aircraft Management Programs*, Report No. A43006/O/W/F97011 (Washington, DC: PCIE, December 16, 1996).

<sup>&</sup>lt;sup>8</sup> U.S. General Services Administration, *Report of the Aircraft Management Policy Advisory Board* (Washington, DC: GSA, 1998).

of ICAP's member agencies have appointed representatives of equivalent stature to ease GSA's dealings with those agencies.

The FAA performed an analysis of public aircraft safety in 1997. This study, which explored the legislative history and the characteristics of government-owned or government-operated aircraft and examined available safety data, was never published. It was, however, used as the basis for a briefing of the U.S. General Accounting Office, which was examining the issue of public aircraft safety in response to the conclusions and recommendations published in the report of the GSA's Aircraft Management Policy Advisory Board. The number of aircraft engaged in government aircraft operations was estimated in the FAA study using preliminary data from the ICAP, which had begun to build a list of aircraft owned or operated at all levels of government, and data from the FAA's National Vital Information Statistics (VIS) database. The FAA compared accident characteristics for government versus general aviation (GA) operations, and across levels of government. The resulting FAA analyses were of limited value because the FAA lacked activity statistics for government aircraft operations.

Since that time, the FAA has begun publishing public aircraft flight hour estimates. The FAA first released estimates in 1997 for the 1996 calendar year. In its study, the Safety Board used these data to compare the safety of public and civil aircraft operations. The Board calculated accident rates for the period 1996–1999 rather than 1993–present because FAA estimates of public aircraft activity were available only for these years.

#### **Accident and Exposure Data**

The Independent Safety Board Act Amendments of 1994 required most public aircraft operators to report accidents to the Safety Board. The Board relies on its investigators to identify incoming reports of public aircraft accidents, and to distinguish these from civil aircraft accidents. Investigators code accident-involved public aircraft "public use" or "investigation of a government agency" as they enter accident data in the Board's Aviation Accident/Incident Database. Based on these codings, Board staff identified over 300 accidents that occurred between January 1993 and December 2000. Staff reviewed a brief report of each accident in the sample. The case-by-case review of the public aircraft accident sample could not ensure that every accident flight was operated in a manner consistent with the statutory definition of public aircraft in effect at the time the accident occurred. The statutory definition of public aircraft status takes many factors into account that are not documented in a typical aircraft accident record (for example, length of the lease agreement for State governments, presence of nonessential crewmembers, and so on). The purpose of the review was merely to look for cases

<sup>&</sup>lt;sup>9</sup> Federal Aviation Administration Office of Accident Investigation, Safety Analysis Branch, "An Analysis of Public Aircraft Safety" (Washington, DC: FAA, 1997, unpublished document).

<sup>&</sup>lt;sup>10</sup> This data collection effort, performed primarily by the Department of Energy, an ICAP member, has since been discontinued because of difficulties in maintaining the currency of the data set.

<sup>&</sup>lt;sup>11</sup> The FAA uses the VIS database to track commercial and government certificates.

<sup>&</sup>lt;sup>12</sup> Accident rates are calculated by dividing accidents by some measure of transportation activity, such as trips taken, miles traveled, or hours spent in transit. This adjustment is sometimes called "normalization." The rationale for normalization is as follows: travelers and system operators run the risk of experiencing a transportation accident primarily when they travel. The more people travel, the more they are exposed to risk, and the more likely they are to be involved in a transportation accident.

where the information in the accident record was clearly inconsistent with classification of an aircraft operation as public. During the review, staff noticed one systematic error made by the Board's investigators: Civil Air Patrol (CAP) accidents were coded public use, despite the fact that CAP flights are not technically considered public aircraft. CAP aircraft were left in the accident sample because the FAA includes CAP flight hours in its estimate of public use flight activity.

The final sample consisted of 343 public aircraft involved in 341 accident events. These accidents resulted in 167 deaths and 220 injuries. Each record contained information on a variety of event-, aircraft-, and occupant-related variables. The majority of the missions (51 percent) were Federal. The rest were divided evenly between State and local governments.

The Safety Board gathered government aircraft flight hour data from two sources: the FAA Office of Aviation Policy and Plans, and the GSA Aircraft Management Policy Division. The FAA publishes activity estimates for "public use" aircraft operations, a category that is similar to but less restrictive than the statutory definition for public aircraft. The GSA collects flight hour data from executive agencies of the Federal government that operate aircraft. The two sets of exposure data cover overlapping sets of operations, but they are collected independently. The FAA estimates activity for all levels of government; the GSA reports activity only for the Federal government. Both sets of activity statistics describe populations of government aircraft operations that are broader than the population of operations qualifying for public aircraft status. However, they are the best data currently available.

The Safety Board could not find independent estimates of State or local public aircraft activity. The PCIE report in 1996 acknowledged the difficulty in finding such information, as did the FAA's unpublished analysis of public aircraft safety in 1997. During the search for data on State and local public aircraft operators, the Safety Board could not locate even a comprehensive list of State or local government aircraft operators.

After repeated efforts yielded no useful information, the Safety Board proceeded with the study using the best approximations of public aircraft activity available: flight hour estimates from the FAA and the GSA. A comparison of public and general aviation aircraft accident rates, based on imprecise FAA activity estimates, revealed that during the period 1996–1999, public aircraft experienced fewer accidents per flight hour than general aviation aircraft, but more than aircraft performing scheduled operations under 14 CFR Part 135 or Part 121.

#### **FAA Activity Estimates**

The FAA Office of Aviation Policy and Plans obtains its public use aircraft activity estimates from the FAA-sponsored General Aviation and Air Taxi Activity Survey (GA survey).

<sup>&</sup>lt;sup>13</sup> The FAA defines "public use" aircraft operations on its flight hour survey questionnaire as "Federal, state, or local government owner or leased aircraft used for the purpose of fulfilling a governmental function."

<sup>&</sup>lt;sup>14</sup> These activities do not include military or intelligence aircraft operations.

The first GA survey took place in 1978, <sup>15</sup> collecting data on flight activity during the 1977 calendar year. Since 1978, the name of the survey has changed, but the FAA's overall approach to estimating nonairline flight activity has remained the same, with some minor changes in the design of the sampling process. Questionnaires for the 1999 survey were mailed to the registered owners of over 30,000 nonairline aircraft (about 12 percent of the fleet). <sup>16</sup> The FAA selected these aircraft from all aircraft records in the FAA's Civil Aviation Registry, using a stratification procedure based on 19 aircraft categories and 9 geographic regions. Combining these two dimensions yielded 172 different aircraft groups from which samples were drawn at random. In statistical terms, these groups are referred to as cells of the sample frame matrix. Within each cell, a predetermined number of aircraft were selected for inclusion in the survey. The number of aircraft selected were chosen to minimize sampling error and to ensure that individual aircraft owners were surveyed as infrequently as possible.

Each aircraft owner selected for inclusion in the 1999 survey received a standardized 19-question GA survey form. This form requested the following information: hours flown by the aircraft during the calendar year, lifetime airframe hours, percentage of flight hours that the aircraft operated while rented or leased, and proportion of flight hours under different flight plans and weather conditions. In addition, owners were asked to estimate the percentage of hours flown for each of 15 different purposes. "Public use" was included as a response category for 1996 and subsequent years. Beginning with the 1996 survey data, the FAA estimated public aircraft flight hours by multiplying an aircraft's total flight hours by the percentage of hours flown for "public use," weighting each product by an appropriate constant related to the sample design, and summing the results across aircraft.

While studying the FAA's public aircraft flight hour estimation process, the Safety Board identified important weaknesses. These were included in the Board's report because the comparison of public and civil aircraft safety depended on the reliability and validity of flight hour estimates.

First, as mentioned earlier, the definition of "public use" provided on the GA survey form is broader than the statutory definition for public aircraft. The definition on the survey form actually refers to all government aircraft operations. Therefore, the flight hour estimate is an inflated substitute for actual public aircraft flying activity.

Second, the estimation of aircraft flight hours by purpose of flight depends, to a great extent, on the record-keeping policies and memories of aircraft owners, and, in some cases, the willingness and ability of aircraft owners to obtain needed information from the pilots who fly their aircraft. When the owner is not the sole operator of an aircraft, the owner may have

<sup>&</sup>lt;sup>15</sup> Prior to 1978, the FAA used the Aircraft Registration Eligibility, Identification, and Activity Report, AC Form 8050, to collect data on GA activity and avionics. The form was sent to all owners of civil aircraft in the United States and served two purposes: Part 1 was a mandatory aircraft registration revalidation form, and Part 2 was voluntary and applied to GA aircraft only, asking questions on the owner-discretionary characteristics of the aircraft such as flight hours, avionics equipment, base location, and use. This information was used by the FAA to estimate aircraft activity.

<sup>&</sup>lt;sup>16</sup> The FAA surveys aircraft owners, not pilots, because the GA survey is also used to acquire information on aftermarket avionics equipage and because pilots commonly fly multiple aircraft.

difficulty estimating flight hours by purpose of flight. It is difficult to know the extent to which these difficulties might distort flight hour estimates, but the potential for error clearly exists.

Third, the FAA's Civil Aviation Registry records are used to estimate the size and characteristics of the GA fleet and as a source of contact information for mailing surveys to aircraft owners. After surveys are returned, registry data are used to extrapolate reported activity to the entire GA fleet. The quality of the activity estimates derived from the GA survey depends greatly on the accuracy and completeness of records in the registry. However, the FAA contractor responsible for conducting the GA survey recently estimated that the proportion of incorrect GA aircraft records in the registry lies between 19 and 40 percent. Owners are required to update their information periodically; however, the FAA has not enforced this requirement for at least 20 years. Evidence suggests that the currency of the registry continues to deteriorate.

Fourth, the GA survey produces imprecise public use flight hour estimates because of a relatively high level of sampling error. Sampling error estimates provide an indication of the degree to which random errors associated with the sampling process influence flight hour estimates. The level of sampling error is partly a function of the number of aircraft included in the survey sample. As sample size increases, sampling error decreases. Estimates of sampling error can be used to calculate confidence intervals for flight hour estimates within a particular category of flight operations. Estimated sampling error for 1999 public use flight activity (expressed in terms of a percent standard error) was 9.7, compared with much lower standard errors for personal (1.7), business (4.3), instructional (3.1), or corporate flight hours (5.5). As a result, public use activity is being monitored with less accuracy than other major categories of aviation, reducing the accuracy with which trends in public aircraft accident rates can be examined.

Fifth, because of the way in which aircraft owners are asked to break down flight hours according to purpose of flight, the purpose-of-flight categories provided on the GA survey form are a mixture of flying tasks and administrative purposes of flight. Therefore, the categories are not mutually exclusive. For example, a private contractor performing aerial application work must choose between "aerial application" and "business transportation." Similarly, a government aircraft operator performing public health sprayings for mosquito control faces a choice between "other aerial application" (which includes public health spraying) and "public use." No instructions are provided to help the respondent choose between categories. It is doubtful that all aircraft owners faced with the same choice would make the same classification.

The limitations of the GA survey are recognized by those close to the sampling and activity estimation process but are less apparent to other users of the data, such as researchers acquiring accident rate statistics through the U.S. Department of Transportation's Bureau of

<sup>&</sup>lt;sup>17</sup> Based on analyses by the FAA's principal contractor for the GA survey, PA Consulting, as described in a memo from Nicholas Nitka and Lark Lee to the FAA on April 6, 2001. Incorrect records were described as GA aircraft records that did not have correct address information and GA aircraft records in the registry that were not actually part of the active GA fleet, that is, air carriers, destroyed aircraft, museum aircraft, military-owned aircraft, and so on.

<sup>&</sup>lt;sup>18</sup> Federal Aviation Administration Office of Aviation Policy and Plans, *General Aviation and Air Taxi Activity Survey* (Washington, DC: FAA, 1999).

Transportation Statistics. In an effort to improve the quality of GA data, a joint government/industry committee, the General Aviation Data Improvement Team (GADIT) was organized in April 2000. GADIT was organized into several breakout groups, one of which (the Activity Data Task Group) was directed to examine current FAA procedures for estimating GA activity data and to look for ways to improve the quality and timeliness of these estimates. <sup>19</sup> The Activity Data Task Group presented recommendations to the FAA Safer Skies Joint Steering Committee (a government/industry working group) in May 2001. However, due to differences in opinion among members of the committee, consideration of these recommendations was deferred. No action was taken and no date was set for further consideration of these recommendations.

### **GSA Activity Estimates**

The Safety Board obtained Federal aircraft activity data from the GSA's Aircraft Management Policy Division. The GSA has been responsible for collecting information on Federal aircraft ownership, utilization, and cost accounting since 1989, as directed by OMB Circular A-126. Rather than surveying by mail, the GSA collects comprehensive activity data from Federal agencies. Seventeen Federal agencies currently report these data to the GSA.<sup>20</sup> In recent years, these agencies have submitted total annual flight hours statistics, broken down according to whether the aircraft used were federally owned, leased, or chartered. However, the GSA began collecting more detailed Federal aircraft activity data using a new Internet-based reporting system called the Federal Aviation Interactive Reporting System (FAIRS) in April 2000. FAIRS will provide easily accessible quarterly reports of cost and utilization data, as well as flight hours coded according to aircraft categories and mission characteristics. The first complete year of FAIRS activity data will be available after the end of calendar year 2001. The FAIRS system will also contain a complete census of Federal aircraft by the end of 2001. Eleven mission category codes are being used to categorize flight hours in the FAIRS system, with more detailed subcategories available within these categories. The GSA collects activity data on all aircraft operations sponsored by Federal executive agencies without distinguishing which flight hours were accrued as part of qualifying public aircraft missions. Therefore, flight hours for Federal government aviation operations are an inflated substitute for the Federal public aircraft flight hours they include. GSA flight hour data, however, are currently the closest available estimate of Federal public aircraft activity.

#### **Conclusions**

The Safety Board's *Public Aircraft Safety* study was hampered by a lack of available public aircraft activity estimates for years prior to 1996 and by the unreliability and lack of detail characterizing activity estimates published since that time. As a result, the Board could only offer tentative conclusions about the relative safety of public and civil aircraft.

Because FAA estimates of public aircraft flight hours are based on a set of aircraft operations broader than those meeting the statutory definition of public aircraft operations, the FAA should revise the GA survey data collection system to more clearly distinguish between

<sup>&</sup>lt;sup>19</sup> There have been previous efforts by industry to improve the data. The General Aviation Coalition submitted recommendations to the FAA in 1997.

<sup>&</sup>lt;sup>20</sup> The number of reporting agencies can change from year to year depending on aircraft utilization.

8

government aircraft operations that qualify for statutory public aircraft status and those that do not. This will allow the Safety Board and other government organizations to calculate more accurate public aircraft accident rates.

The FAA should identify and implement methods of checking the accuracy of the information collected using the GA survey. The FAA's inability to sample as much as a quarter of the active GA fleet raises serious questions about the organization's ability to accurately estimate GA or public aircraft flight activity using a sample survey approach. The reliance on aircraft owners to provide the desired information is subject to a number of weaknesses. Although surveying owners may be the most practical means available for collecting nonairline flight activity data, the FAA should identify and implement methods independent of the GA survey that can be used to check the accuracy of nonairline flight hour estimates.

The FAA should improve the accuracy and currency of the Civil Aviation Registry. The GADIT committee recently recommended that the FAA obtain address verification every 3 years by requiring a response to the triennial aircraft registration form, regardless of any change in an owner's registration information. Although this would represent a positive step, the Safety Board believes that it is insufficient to ensure the currency of the registry. It would do nothing to improve the 28,000 aircraft records that are known to contain outdated owner contact information. These individuals no longer receive triennial registration report forms because the FAA cannot contact them. The registry's effort to contact aircraft owners who have submitted a change of address form to the U.S. Postal Service and request updated contact information also represents a positive step, but the vast majority of owners so contacted fail to respond to the FAA. For these reasons, the Board is concerned that owner contact information in the registry will continue to deteriorate, further hampering the FAA's ability to estimate annual nonairline flight activity. The FAA should implement a program that will (a) measure and track the currency of aircraft owner contact information in the registry and (b) systematically improve the currency of this information in a measurable way.

The FAA should reduce the sampling error associated with estimates of public use flying activity. Estimates for public use flying activity are currently less precise than estimates for major categories of GA activity (that is, business, personal, instructional, and so on). This results from differences in the number of aircraft sampled. This situation can be improved by sampling an increased number of aircraft that perform public aircraft operations. The FAA should revise the sampling strategy of the GA survey to achieve a precision of public use flight hour estimates (in terms of sampling error) that is equivalent to the precision of estimates for personal, business, or corporate subcategories of GA.

The FAA should revise the GA survey so that operators can report public aircraft flight hours by purpose of flight. Purpose of flight categories should be mutually exclusive. Current categories mix administrative purposes of flight with flying activities. The FAA should develop a new reporting matrix on the GA survey form that separates the administrative purpose of flight (for example, personal, business, corporate, regional, air taxi, air tours, sightseeing, public use,

<sup>&</sup>lt;sup>21</sup> This figure—one quarter of the active fleet—includes known outdated or inaccurate records combined with the number of estimated outdated or inaccurate records yet to be verified. The figure is given in a memo written by the FAA's contractor for survey data analysis, PA Consulting, dated March 26, 2001.

air medical services, search and rescue, and so on) from the actual flying activity performed (for example, transport of passengers, flight instruction, aerial observation, aerial application, external load, and so on). The FAA should incorporate these changes in published flight hour estimates as well.

In addition, the FAA should revise the GA survey form so that aircraft owners can report public aircraft flight hours according to the level of government served (Federal, State, or local) within each purpose-of-flight category. This will make it possible to compare the safety of public aircraft operations sponsored by different levels of government.

The FAA should remove CAP flight hours from future estimates of public aircraft activity so that the figures are consistent with the current statutory definition of public aircraft. CAP flights are not considered public aircraft operations under current law. The inclusion of these hours inflates the FAA's annual estimate of public use flight activity. The CAP returned 14 surveys to the FAA for the 1999 GA survey. On these surveys, CAP personnel classified a total of 1,263 aircraft flight hours as public use. Based on the FAA's sample weighting factors for these aircraft, these surveys contributed 75,324 flight hours (7 percent) to the FAA's overall 1999 estimate of public use flight hours.

A final concern involves the parallel development of activity data collection systems at the FAA and the GSA. It would be useful to compare the safety of Federal public aircraft versus other aircraft engaged in the same kinds of flying activities. However, the development of separate, independent activity data collection systems by the FAA and the GSA is leading to the collection of flight hour data in terms of incompatible categories of purpose of flight. This will make it difficult, if not impossible, to compare accident rates for Federal public aircraft versus other public aircraft for specific kinds of flying activities. The FAA, in cooperation with the GSA, should define purpose-of-flight categories in the FAIRS that correspond to purpose-of-flight categories in the GA survey.

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

Revise the General Aviation and Air Taxi Activity Survey data collection system to more clearly distinguish between government aircraft operations that qualify for statutory public aircraft status and those that do not. (A-01-73)

Identify and implement methods independent of the General Aviation and Air Taxi Activity Survey that can be used to check the accuracy of nonairline flight hour estimates. (A-01-74)

Implement a program that will (a) measure and track the currency of aircraft owner contact information in the Civil Aircraft Registry and (b) systematically improve the currency of this information in a measurable way. (A-01-75)

Revise the sampling strategy of the General Aviation and Air Taxi Activity Survey to achieve a precision of public use flight hour estimates (in terms of sampling error) that is equivalent to the precision of estimates for personal, business, or corporate subcategories of general aviation. (A-01-76)

Develop a new reporting matrix on the General Aviation and Air Taxi Activity Survey form that separates the administrative purpose of flight (for example, personal, business, corporate, regional, air taxi, air tours, sightseeing, public use, air medical services, search and rescue, and so on) from the actual flying activity performed (for example, transport of passengers, flight instruction, aerial observation, aerial application, external load, and so on). Incorporate these changes in published flight hour estimates. (A-01-77)

Revise the General Aviation and Air Taxi Activity Survey form so that aircraft owners can report public aircraft flight hours according to the level of government served (Federal, State, or local) within each purpose-of-flight category. (A-01-78)

Remove Civil Air Patrol flight hours from future estimates of public aircraft activity so that the figures are consistent with the current statutory definition of public aircraft. (A-01-79)

In cooperation with the General Services Administration, define purpose-of-flight categories in the Federal Aviation Interactive Reporting System that correspond to purpose-of-flight categories in the General Aviation and Air Taxi Activity Survey. (A-01-80)

The Safety Board also issued safety recommendations to the General Services Administration.

Please refer to Safety Recommendations A-01-73 through -80 in your reply. If you need additional information, you may call (202)314-6170.

Chairman BLAKEY, Vice Chairman CARMODY, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

By: Marion C. Blakey Chairman