



Office of Inspector General
Washington, DC 20546-0001

MAY 17 2007

TO: Assistant Administrator for Infrastructure and Administration

FROM: Assistant Inspector General for Auditing

SUBJECT: Final Memorandum on the Audit of the Management of Aircraft
Operations (Report No. IG-07-016; Assignment No. A-05-027-00)

The Office of Inspector General (OIG) has completed an audit of the management of NASA's aircraft operations. Our audit focused on determining whether (1) the size and structure of NASA's aircraft operations used for program support and research and development were adequate to support the Agency's requirements and that planning was underway to respond to changes in those requirements resulting from the President's Vision for Space Exploration; (2) the Centers had implemented NASA's policies and procedures to ensure the effectiveness of aircraft operations and safety programs to include a hotline complaint receive by our office; and (3) NASA provided adequate oversight of its aircraft and aircraft operations. (See Enclosure 1 for details on the audit's objectives, scope, and methodology.)

Executive Summary

Although the size and structure of NASA's aviation services allowed NASA to accomplish its program requirements while taking steps to respond to the President's Vision, NASA was not periodically reviewing aircraft mission requirements to determine whether its aircraft fleet was optimally sized to support Agency missions. We also found that a Center Safety and Mission Assurance (SMA) office had not fully implemented policies and processes to effectively carry out its aircraft oversight role and that NASA had not established a formal Wildlife Hazard Management Plan to mitigate wildlife hazards at NASA airfields. In addition, we found that NASA's policies and procedures did not require that Inter-Center Aircraft Operations Panel (IAOP) review teams, which conduct biennial reviews of Center aircraft operations, include at least one non-NASA member. We believe that this will provide additional assurance that objective and impartial reviews are conducted.

While we were conducting our work, NASA's Aircraft Management Division addressed the majority of our findings in a significant revision of NASA Procedural Requirements (NPR) 7900.3A, "Aircraft Operations Management w/Interim Revision to Chapter 3," April 8, 1999. NASA plans to issue the update, NPR 7900.3B, "Aircraft Operation Management Manual," by May 31, 2007.

Draft NPR 7900.3B addresses all but one of the issues we identified by requiring that

- Mission Directorates, Center Directors, and program and project managers annually submit their respective aircraft mission requirements, to include a 5-year projection of those requirements, to the Aircraft Management Division (AMD);
- Center SMA Offices provide external oversight of the safety program run by the Center's Flight Operations Office; and
- Center Flight Operations Offices develop and implement a Wildlife Hazard Management Plan.

The draft NPR did not address our finding regarding the IAOP review teams and, therefore, we recommended that the Assistant Administrator for Infrastructure and Administration revise draft NPR 7900.3B to require, at a minimum, one non-NASA member on each IAOP review team. In response to a draft of this memorandum (see Enclosure 2), the Assistant Administrator for Infrastructure and Administration nonconcurred with the recommendation but proposed an alternative course of action to resolve the recommendation. Instead of revising NPR 7900.3B, she will issue a written, standing invitation to the NASA Aerospace Safety Advisory Panel (ASAP)¹ to attend every IAOP functional review. We consider her proposal responsive and the recommendation resolved. We will close the recommendation upon completion and verification of management's corrective action.

Background

NASA aircraft directly support the Agency's missions in aeronautical research and development, space science and applications, space flight, astronaut readiness training, and related activities. The Agency designates its aircraft into one of three categories—mission management, program support, or research and development. Mission management aircraft are used primarily to transport management and staff personnel to provide direction, coordination, and oversight in support of NASA's missions. Program support aircraft are used in astronaut training, safety chase, photo chase, cargo transport, flight training, range surveillance, launch security, and command and control exercises and operations. Research and development aircraft are used to produce or acquire research data relating to aeronautics, Earth, space, life sciences, and meteorology.

NASA Policy Directive (NPD) 7900.4B, "NASA Aircraft Operations Management," April 27, 2004, establishes policy for the management of NASA aircraft resources, aircraft operations, aviation safety, and related matters. The NPD requires that NASA aircraft operations meet approved program needs or requirements, be duly authorized, and be accomplished in airworthy aircraft operated by qualified flight crews in accordance with approved NASA and Federal guidelines, regulations, and operational procedures. The NPD further designates NASA aircraft as Agency-wide resources, available to support all NASA programs and missions, and states that aviation-related

¹ The ASAP is one of five NASA-chartered Federal Advisory Committees.

NASA contracts and agreements must comply with NASA aviation safety program requirements and aircraft management policies.

NPR 7900.3A establishes the responsibilities, procedures, and requirements for NASA Centers and other locations operating NASA aircraft. The NPR provides a standard approach across NASA Centers for the management and use of NASA aircraft. It assigns authority and responsibility for early coordination between the Office of Infrastructure and Administration and the Mission Directorates² on requirements for aircraft and the acquisition, assignment, and operation of aircraft.

As of February 2007, NASA maintained 55 program support and 21 research and development aircraft, valued at approximately \$484 million, at seven NASA locations: Ames Research Center (Ames), Dryden Flight Research Center (Dryden), Glenn Research Center (Glenn), Johnson Space Center (Johnson), Kennedy Space Center (Kennedy), Langley Research Center (Langley), and Wallops Flight Facility (Wallops). During fiscal year (FY) 2006, those aircraft flew almost 13,400 flight hours.

Size and Structure of NASA Aircraft Operations

The size and structure of NASA's aircraft operations allowed NASA to accomplish its program requirements; however, NASA did not consistently use aircraft mission requirements or utilization data to determine whether its aircraft fleet was optimally sized and located. The Mission Directorates, as the users of NASA's aircraft resources, are responsible for establishing aircraft requirements and providing the Centers funding to support those requirements. While NPR 7900.3A, section 1.3, states that the Mission Directorates are to "continually review current aircraft requirements and associated costs," NPR 7900.3A does not include instructions on what the Mission Directorates will do with their review results or how the information is to be used on a NASA-wide level. Therefore, each of the Mission Directorates that used NASA aircraft approached that review process differently, as described in the following paragraphs.

Aeronautics Research Mission Directorate. Before FY 2006, the Aeronautics Research Mission Directorate (ARMD) reviewed aviation requirements at the Mission Directorate-level. However, according to the Deputy Program Manager, Aeronautics Test Program, budget cuts prevented ARMD from continuing Directorate-level reviews. Without Directorate-level reviews, ARMD could not ensure that its program and project managers' decisions regarding their aviation needs would result in an optimally sized fleet. For example, the NASA Associate Administrator—not ARMD—determined that ARMD no longer needed a Boeing 757 at Langley to support programs and projects beginning in FY 2007. ARMD agreed with the decision and placed the aircraft in flyable storage in September 2006. Because ARMD did not have Directorate-level oversight of its aviation requirements, ARMD did not identify that the Boeing 757 should have been removed from the fleet.

² NASA has four Mission Directorates: Aeronautics Research, Exploration Systems, Science, and Space Operations. The Exploration Systems Mission Directorate does not currently require aviation support.

Science Mission Directorate. The Science Mission Directorate (SMD) reviews its aviation requirements from a Mission Directorate perspective. SMD developed an aircraft catalog for use across the Directorate in supporting scientific research programs. The catalog includes unique NASA aircraft and commercially available aircraft that can potentially support the Earth science community. Program and project managers are required to submit flight requests to use the SMD aircraft listed in the catalog. The managers send flight requests to an independent team that SMD established at Ames, which reviews each request and determines whether the aircraft platform requested was the best choice. In addition to the flight request process, SMD maintains a 5-year plan on each aircraft. SMD's process allows it to oversee its fleet from a Mission Directorate perspective and make decisions based on that perspective.

Space Operations Mission Directorate. For the Space Operations Mission Directorate (SOMD), the Space Shuttle Program and the International Space Station (ISS) Program are responsible for aviation requirements planning. SOMD does not become involved in the development of aviation requirements to support its programs unless an aircraft is being acquired or disposed of. For example, the Space Shuttle Program provides funding to the Johnson Flight Crew Operations Directorate (FCOD)³ for operating 37 of the Agency's 41 SOMD program support aircraft.⁴ Space Shuttle Program funding provides for training of astronauts, pilots, and mission specialists; maintaining pilot proficiency, including that of NASA's military pilots still on active duty; and other program support activities, such as Shuttle repositioning. SOMD's review process allows it to consider the size and structure of its fleet from a Mission Directorate perspective.

Our review of the Mission Directorates' processes showed that although NPR 7900.3A required "continual review" of aircraft requirements, the Agency did not establish a systematic review process in which the need for aircraft requirements could be assessed against the Agency-wide fleet size and structure, and changes made as needed. NASA's revision to the NPR will establish such a process by requiring that Mission Directorates, Center Directors, and program and project managers perform an annual review of aircraft mission and program requirements, use, and associated costs. A 5-year projection based on the annual review will be provided to AMD no later than September 30 of each year. In line with draft NPR 7900.3B, AMD began conducting annual assessments in FY 2006 to ensure that NASA can meet aviation requirements. Ongoing actions by AMD and the Mission Directorates, as well as the revision to NPR 7900.3A, will help ensure that NASA achieves and maintains an appropriately sized and structured aircraft fleet to support current and future Mission Directorate requirements.

³ The mission of FCOD is to provide trained crewmembers for all U.S. human space flight endeavors and to bring experienced crewmember expertise to help resolve operational or developmental issues within the human space flight programs.

⁴ As of February 2007, the program support aircraft were located at Dryden (2 Shuttle Carriers); Johnson (29 T-38s, 4 Shuttle Training aircraft, 1 C-9, and 1 Guppy); and Kennedy (4 Bell UH-1H helicopters).

Response to President's Vision

NASA has taken steps to address potential changes to aviation requirements by developing a plan to ensure that it can support and achieve the goals of the President's Vision for Space Exploration, which directed NASA to safely return the Space Shuttle to flight as soon as practical, focus the use of the Space Shuttle on completing the ISS, and retire the Space Shuttle no later than 2010. In addition, the President's Vision called for the development of new vehicles to provide crew transportation for missions beyond low Earth orbit.

The Exploration Systems Mission Directorate (ESMD) is responsible for the Constellation Systems Program, which will develop new vehicles in support of the President's Vision. ESMD plans to work with Johnson personnel in the FCOD to establish initial guidelines for training Constellation Program astronauts, which will require program support aircraft. The NASA aircraft fleet includes 41 program support aircraft—2 at Dryden, 35 at Johnson, and 4 at Kennedy—that primarily support the Space Shuttle Program. FCOD has addressed potential changes to mission requirements by developing a strategic plan to ensure the fleet can support and achieve the goals of the Vision for Space Exploration. The plan focuses on operations that may impact the number and mix of aircraft needed to support changes to NASA's mission based on the Vision. For example, the plan addresses changes in astronaut training needs by decreasing the number of T-38s—from 31 in FY 2005 to 20-22 in FY 2011. In FY 2007, Johnson began implementing the FCOD plan by disposing of T-38 program support aircraft; as of February 2007, the fleet included 29 T-38s. We believe that NASA is adequately addressing its mission changes and that the FCOD plan should allow for an efficient, cost-effective approach for NASA to use to safely transition to a different concept of flight training.

Aircraft Oversight

SMA and AMD perform oversight of NASA aircraft operations. The SMA role is to conduct surveillance and independent assessments to enhance the success of programs, projects, and activities and enhance the effectiveness of SMA activities, including SMA activities managed by other organizations, such as aviation safety. AMD establishes IAOP review teams to periodically review all aspects of Flight Operations at NASA Centers, including the implementation of Center procedures. The IAOP charter states that the IAOP is to provide advice and recommendations to NASA senior management officials concerning Agency policies and other matters related to NASA aircraft. To facilitate their role, the IAOP conducts formal biennial reviews of each of the Center aircraft operations and conducts semi-annual meetings to review status, discuss issues, and advise AMD and the Assistant Administrator for Infrastructure and Administration concerning uniform policies and procedures related to aircraft operations.

SMA. During the audit, we found that the Johnson SMA functional manager was not participating in the oversight of the Center's aircraft operations. Johnson did not include aviation safety oversight as part of its SMA role, assuming that Headquarters was performing oversight, even though NPD 8700.1C, "NASA Policy for Safety and Mission

Success,” October 13, 2002, requires Center SMA functional managers to oversee aviation safety.

We discussed this issue with personnel in Johnson’s SMA and Aircraft Operations offices. Johnson’s SMA Office took immediate action by initiating plans to establish an Aviation Safety Council to provide the required oversight. Before the council was established, however, AMD circulated draft NPR 7900.3B for review. The draft NPR includes the requirement that Centers have an aviation safety working group, chaired by the Aviation Safety Officer, that meets at least semi-annually and reports to the Center’s Chief of Flight Operations. As a result of the draft NPR, the Johnson SMA decided to assign a representative to the Center’s aviation safety working group to fulfill the SMA oversight responsibility instead of establishing the Aviation Safety Council.

The draft NPR also requires that the Center Safety Office or an external aviation inspection organization conduct independent reviews of flight operations, including safety, in years when an IAOP review is not scheduled. For the years that an IAOP review is scheduled, the Center’s Chief of Flight Operations will provide a copy of the panel’s report to the Johnson SMA Office. In addition, the Johnson SMA Office will assign a representative to the IAOP review team. Johnson will establish the working group and initiate the biennial reviews following the release of the draft NPR. In our opinion, implementation of the requirements for the working group and biennial reviews will provide the required Center SMA oversight for Johnson’s aviation safety activities.

IAOP. The IAOP ensures that NASA complies with a requirement in General Services Administration (GSA) “Federal Safety Standards Guidelines” to provide “self oversight” of aviation activities. NASA voluntarily adopted those guidelines in 2000 and 2001 when it signed the Interagency Committee for Aviation Policy (ICAP) Safety Standards Agreement along with 14 other Federal agencies. That agreement states that each agency is solely responsible for managing its flight programs; writing its own safety standards (based on the Federal Safety Standards Guidelines); and instituting a self-oversight program that includes independent inspection services, which are obtained and managed by the agency.

The AMD fulfills the self-oversight requirement through the IAOP’s biennial reviews of each Center’s aircraft operations. The IAOP review program provides a peer review and management evaluation of the procedures and practices used by Center Flight Operations Offices to ensure safe and efficient accomplishment of assigned missions and goals. In addition to providing Center Directors and Headquarters management officials with an overview of the general health of flight operations, the review teams also identify deficiencies in, or deviations from, NASA-wide policies, procedures, and guidelines. Results of the reviews are used to update NASA-wide or local requirements to enhance standardization and improve productivity. The IAOP review teams are primarily composed of NASA flight operations personnel (from Centers other than the Center under review), but each team often includes at least one member from outside the Agency. As demonstrated in the 17 IAOP reviews conducted from October 2002 through March 2006, participants or observers who were external to NASA’s aircraft operations or NASA were routinely included on the team (16 out of the 17 review teams). The

17 review teams included participants or observers from NASA Headquarters, NASA Centers, external Federal agencies, the ASAP, and contractors.

Although NASA generally includes a member who is external to NASA and NASA's aircraft operations on each IAOP review team, it is not required by NASA policy. Because the majority of personnel that serve on the IAOP team require a certain level of aviation knowledge and experience and NASA's aviation community is relatively small (approximately 800, of which fewer than that are qualified to serve), having IAOP team members external to NASA and NASA's aircraft operations provide additional assurance that an objective and impartial review is conducted. According to GSA, it plans to implement a verification process for the self-oversight programs, which would provide outside assurance of the effectiveness of an agency's self-oversight program. Until such a process is implemented, NASA should require, at a minimum, that one member of each IAOP review team be external to NASA and NASA's aircraft operations to provide greater assurance of an objective and impartial review.

Kennedy Hotline Complaint

During this audit, the OIG received a hotline complaint alleging that NASA had not taken adequate steps to alleviate the risk of bird strikes to the Space Shuttle and to aircraft taking off or landing at Kennedy's runway, commonly referred to as the Shuttle Landing Facility (SLF). The complainant also alleged that NASA allowed a civilian pilot to decline the use of bird abatement precautions during a takeoff at the SLF. We substantiated the complaint as it related to bird strike risks; however, the complaint was unsubstantiated as it related to the civilian pilot declining the use of bird abatement precautions.

Bird Strike Risks. NASA did not require that its airfields have a formal Wildlife Management Program, which would include addressing the risk of bird strikes around those airfields. The potential for bird strikes is particularly acute at Kennedy's SLF and the Space Shuttle launch pads because they are located within a fish and wildlife sanctuary. NASA formed a "Tiger Team" in June 2006, consisting of a representative from AMD and the airfield managers of three airfields (Ames, Kennedy, and Wallops), to address this issue. The Tiger Team was tasked to review Federal guidance concerning wildlife management and recommend changes to NASA guidance. As a result of the Tiger Team's efforts, NASA added chapter 13, "NASA Airfield Operations," to draft NPR 7900.3B, requiring each NASA airfield to have a Wildlife Hazard Management Plan (to include bird abatement) and for the IAOP to include confirmation and validity of the plan during its biennial reviews.

At Kennedy, the following actions have been initiated:

- expansion of a "bird watch" process to alert flight crews of the level of potential bird activity;
- development of procedures to input bird strike data into the Incident Reporting Information System to facilitate tracking of bird strikes;

- development of procedures for periodic reviews of SLF bird hazards, modeled after a process used at Patrick Air Force Base, Florida; and
- coordination with the Federal wildlife management specialists in aircraft management offices at Ames and Wallops.

Although the portion of the complaint related to bird strikes was substantiated, we believe that NASA's actions taken subsequent to that complaint have adequately addressed the bird strike issue.

Civilian Pilot Use of Bird Abatement Precautions. The allegation concerning a civilian pilot declining use of bird abatement precautions was unsubstantiated. For that specific incident, we determined that the pilot did not decline bird abatement precautions and that Kennedy personnel responsible for bird watch were present on the SLF well before the pilot's scheduled takeoff. Those personnel reported that no birds were observed on the airfield during the pre-takeoff runway inspection. Although the pilot experienced a bird strike on takeoff, that bird strike was not the result of his declining the use of bird abatement precautions. Instead, the birds he encountered were observed too late to prevent the bird strike. The actions taken by Kennedy to improve their wildlife management program should further reduce the risk of bird strikes encountered by civilian or government pilots at the SLF.

Management Actions

We recognize the initiative taken by AMD and the Office of Infrastructure and Administration in revising NPR 7900.3A to proactively address concerns that we raised during the course of the audit. NPR 7900.3B, once issued, will provide for more detailed requirements than the current NPR. For example, the draft requires an annual review of NASA aircraft requirements and the projection of those requirements over a 5-year period in an annual report to the AMD. In addition, the draft establishes Center-level aviation safety working groups to conduct independent biennial reviews of flight operations. In our opinion, NPR 7900.3B provides needed requirements that, when implemented, will improve the efficiency and effectiveness of NASA's aircraft operations.

Recommendation, Management's Response, and Evaluation of Management's Response

We recommended that the Assistant Administrator for Infrastructure and Administration revise draft NPR 7900.3B to require each IAOP review team to have at least one non-NASA member.

Management's Response. The Assistant Administrator nonconcurred, stating that the IAOP process is an independent, Headquarters-sanctioned review and that IAOP review teams are carefully composed of expertise from across the Agency. In addition, when deemed necessary, the IAOP review teams are augmented by

personnel from other Federal agencies. The Assistant Administrator also stated that NASA is in the process of applying for the GSA verification program—the GSA/Interagency Committee for Aircraft Policy Federal Aviation “Gold Standard,” and plans to submit its program package by August 2007. The Assistant Administrator proposed an alternative course of action to resolve the recommendation. Instead of revising NPR 7900.3B, she will issue a written, standing invitation to the NASA ASAP to attend every IAOP functional review.

Evaluation of Management’s Response. We consider the Assistant Administrator’s alternative course of action responsive and the recommendation resolved. We will close the recommendation upon completion and verification of management’s corrective action.

We appreciate the courtesies extended our staff during the audit. If you have any questions, or need additional information, please contact Ms. Carol N. Gorman, Space Operations and Exploration Director, at 202-358-2562 or me at 202-358-2572.



Evelyn R. Klemstine

2 Enclosures

cc:

Chief Safety and Mission Assurance Officer
Associate Administrator for Aeronautics Research Mission Directorate
Associate Administrator for Institutions and Management
Associate Administrator for Science Mission Directorate
Associate Administrator for Space Operations Mission Directorate
Assistant Administrator for Internal Controls and Management Systems
Director, Ames Research Center
Director, Dryden Flight Research Center
Director, Glenn Research Center
Director, Johnson Space Center
Director, Kennedy Space Center
Director, Langley Research Center
Director, Marshall Space Flight Center
Director, Wallops Flight Facility

Objectives, Scope, and Methodology

Objectives

The overall audit objective was to evaluate whether NASA's aircraft operations were effectively and efficiently managed. Our specific objectives were to determine whether (1) the size and structure of NASA aircraft operations were adequate to support the Agency's requirements and that planning was underway to respond to changes in those requirements resulting from the President's Vision for Space Exploration; (2) Centers had implemented NASA's policies and procedures to ensure the effectiveness of aircraft operations and safety programs, to include mishap and close call investigations; and (3) NASA provided adequate oversight of its aircraft and aircraft operations. We also reviewed internal controls as they related to the overall objective.

Regarding the first objective, we limited our review to NASA aircraft used for program support and research and development because the Agency had commissioned a concurrent review of its mission management aircraft to evaluate whether commercial aircraft could cost-effectively support mission management requirements.⁵ Our audit of "NASA Aircraft A-76 Studies" (IG-07-015, May 17, 2007) reported on the conclusions of the Agency's review.

Regarding the second objective, we did not review aircraft mishap and close call investigations because we plan a comprehensive review of NASA's mishap and close call process, which will include the investigation of aircraft-related mishaps and close calls.

We added as part of our second objective a review of a hotline complaint received by our office on February 12, 2006. The complainant alleged that NASA had not taken adequate steps to alleviate the risk of bird strikes to aircraft taking off or landing at Kennedy. The complainant also alleged that NASA allowed a civilian pilot to decline the use of bird abatement precautions on the runway during a takeoff.

Scope

We performed this audit from October 2005 through February 2007 in accordance with generally accepted government auditing standards. We limited the scope of our audit because of other ongoing or planned reviews. Specifically, we limited our review to NASA aircraft used for program support and research and development because the Agency had commissioned a concurrent review of its mission management aircraft. We

⁵ Office of Management and Budget Circular No. A-76, "Performance of Commercial Activities," May 29, 2003, establishes Federal policy for the competition of commercial activities. Circular A-76 requires Federal agencies to conduct cost comparisons for commercial activities they operate and to determine the most economical way to perform the activities. These comparisons are referred to as A-76 studies and are normally updated every 5 years.

did not review aircraft mishap and close call investigations because we plan a comprehensive review of NASA's mishap and close call process, which will include the investigation of aircraft-related mishaps and close calls.

Methodology

We conducted fieldwork for aircraft operations and management at Ames, Dryden, Glenn, Johnson, Kennedy, Langley, Marshall, and Wallops. We interviewed aircraft operations and management personnel at those locations and at the AMD in NASA Headquarters. We discussed aircraft management with NASA officials in the Aeronautics Research, Exploration Systems, Science, and Space Operations Mission Directorates and GSA. In interviews with Kennedy aircraft operations personnel, the IAOP, and AMD, we addressed a hotline complaint about the risk of bird strikes to the Space Shuttle and to aircraft taking off or landing at Kennedy's SLF. We observed the IAOP during a review at Kennedy in March 2006.

We reviewed the following Federal and NASA policies and procedures on aircraft operations and management:

- Code of Federal Regulations, Title 41, Part 102, "Management of Government Aircraft," July 1, 2005;
- Code of Federal Regulation Title 14 "Aeronautics and Space," Part 139 "Certification of Airports," January 1, 2004 and January 1, 2005;
- GSA Interagency Committee for Aviation Policy, "Safety Standards Agreement," 2000 and 2001;
- GSA Interagency Committee for Aviation Policy, "Safety Standards Guidelines for Federal Flight Programs," December 22, 1999;
- Office of Management and Budget Circular No. A-76, "Performance of Commercial Activities," May 29, 2003;
- Office of Management and Budget Circular No. A-126, "Improving the Management and Use of Government Aircraft," May 22, 1992;
- NPD 1000.3C, "The NASA Organization," February 15, 2007;
- NPD 7900.4B, "NASA Aircraft Operations Management," April 27, 2004;
- NPR 7900.3A, "Aircraft Operations Management w/Interim Revision to Chapter 3," April 8, 1999;
- Draft NPR 7900.3B, "Aircraft Operations Management Manual";
- NPD 8700.1C, "NASA Policy for Safety and Mission Success (Revalidated 3/22/06)," October 13, 2002; and
- Aircraft Operations Division 09295, Aircraft Operations and Training Procedures, T-38 Operating Procedures, Volume 1, April 2005, Johnson Space Center.

We reviewed internal and external reports and documents relating to aircraft operations and management, including the following:

- National Aeronautics and Space Act of 1958, Section 203, “Functions of the Administration”;
- IAOP reports for December 2002 through May 2006 for Ames, Dryden, Glenn, NASA Headquarters, Johnson, Kennedy, Langley, Marshall, and Wallops;
- Annual Aircraft Reports of 2003, 2004, and 2005;
- Office of Program Analysis and Evaluation and Exploration System Mission Directorate, “Readiness Assessment of the Glenn Research Center,” February 22, 2006;
- Office of Program Analysis and Evaluation, “Review of NASA’s Mission Management Aircraft Requirements,” December 2005;
- White Paper published by the Draft Systems Engineering and Institutional Transition Team, “Consolidation of Aircraft and Aircraft Operations within NASA,” January 24, 2006;
- Conklin and de Decker Report, “Assessment of NASA Aircraft Operations, Cost and Requirement,” dated July 24, 2003;
- Conklin and de Decker A-76 Study; “Aviation Services Study, Johnson Space Center, Mission Management Aircraft,” August 11, 2006;
- Conklin and de Decker A-76 Study; “Aviation Services Study, Marshall Space Flight Center, Mission Management Aircraft,” August 11, 2006;
- Conklin and de Decker A-76 Study; “Aviation Services Study, Kennedy Space Center, Mission Management Aircraft,” August 15, 2006;
- NASA Strategic Management Council Meeting Minutes of December 13, 2005;
- NASA Operations Management Council Meeting of February 17, 2006;
- NASA Aircraft Operations budget and cost data; and
- 2006 flight information for T-38 aircraft located at Johnson.

Use of Computer-Processed Data

Except for aircraft inventory data, we did not rely on computer-processed data for this memorandum. We established the validity and reliability of the aircraft inventory data through physical observations of aircraft during our site visits.

Review of Internal Controls

We reviewed internal controls that were established for coordinating, using, and managing NASA aircraft operations. NASA’s policy and procedures for aircraft operations are consistent with Federal laws and policies. NASA prepared the annual report on aircraft utilization and aviation safety for the Assistant Administrator for Infrastructure and Administration. In addition, the IAOP reviewed NASA aviation activities, emphasizing the efficient use of related resources and operational aviation safety. Although NASA’s policy and procedures do not currently include specific

guidance on how reported results should be used to effect aircraft reassignment or disposition decisions, the pending revision to NPR 7900.3A will provide adequate specific guidance.

Prior Coverage

During the last 5 years, the Government Accountability Office issued one report of particular relevance to the subject of our audit: “NASA Travel: Passenger Aircraft Services Annually Cost Taxpayers Millions More Than Commercial Airlines” (GAO-05-818, August 26, 2005). Unrestricted Government Accountability Office reports can be accessed over the Internet at <http://www.gao.gov>. Our “NASA Aircraft A-76 Studies” report can be accessed at <http://www.hq.nasa.gov/office/org/hq/audits/reports/FY07/index.html>.

Management's Comments

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001



May 10, 2007

Reply to AIRS of

Aircraft Management Division

TO: Assistant Inspector General for Auditing
FROM: Assistant Administrator for Infrastructure and Administration
SUBJECT: Management Response to Draft Audit Report entitled "Management of Aircraft Operations" (Assignment A-05-027-00)

Thank you for the opportunity to comment on the Draft Audit Report, Assignment A-05-027-00, provided on April 11, 2007. Below is NASA Management's response to the recommendation set forth in the draft report.

Recommendation: The Assistant Administrator for Infrastructure and Administration should revise draft NPR 7900.3B to require each Intercenter Aircraft Operation Panel (IAOP) review team to have at least one non-NASA member.

Non-concur. NASA Management does not concur with this recommendation

The IAOP Review process is an independent, Headquarters-sanctioned review that looks at the health and safety of aircraft operations at each of the Centers on a biennial basis. This review also addresses compliance with agency and federal policies for operating aircraft. In addition to expertise from other NASA Centers and a Headquarters Office of Aircraft Management (AMD) Executive Secretary, a representative from Headquarters Office of Safety and Mission Assurance (OSMA) participates in every review and co-signs the report with the IAOP Team Leader. Since its inception in the late 1970's, the reviews have supported and advised the Agency's Senior Management in all aspects of aircraft operations and safety. These comprehensive reviews have emphasized aviation safety and the efficient use of related resources at each Center, by ensuring adherence to Agency and Federal policies and as a peer review process sharing best practices to improve all of NASA aviation. NASA's IAOP Review program fulfills the requirement cited in 41 CFR 102-33 for "agency independent oversight and assessments to verify compliance with the standards" set forth in Federal Regulations.

IAOP review teams are carefully comprised of expertise from across the agency specifically matched to the operations, issues and challenges of the target Center. When we have deemed it necessary to supplement that agency expertise to address a known issue or area of emphasis at a Center, we have augmented the Review Team with personnel from other Federal agencies such as the Federal Aviation Administration

(FAA), U.S. Navy Test Pilot School, General Services Administration (GSA), Department of Justice, Department of the Interior, and the U.S. Forest Service. For example, FAA expertise in aircraft certification and airworthiness was applied in a review of Ames Research Center's planned SOFIA operations. Twice in the past six years, the GSA official charged with the responsibility to schedule the GSA equivalent of our IAOP Reviews was invited to participate as a team member at an actual review. A representative of the NASA Aerospace Safety Advisory Panel (ASAP) also attended one of these reviews as an observer. Both individuals were very complimentary about the quality of the NASA review process, and voiced no concerns about its independence. The ASAP has a standing invitation to attend every functional review and every semi-annual IAOP meeting, and they have attended many of them. I will formalize that standing invitation by letter to the ASAP by the end of May 2007.

IAOP review teams have twice recommended cessation of flight operations as a result of safety concerns raised by IAOP review team members. Additionally, IAOP review team recommendations were the genesis for substantive changes to NPR 8621.1A, Mishap Reporting, Investigation and Record Keeping, to raise the visibility of aircraft mishaps and expedite the sharing of lessons learned. IAOP reviews have also recommended Cultural Surveys to identify and address human factors issues and management conflicts at target Centers.

The audit report states on page seven that "GSA plans to implement a verification process for self oversight, which would provide outside assurance of the effectiveness of an agency's self-oversight program". NASA is in the process of applying for this verification process, which is called the GSA/Interagency Committee for Aircraft Policy (ICAP) Federal Aviation "Gold Standard". We have had informal discussions with the GSA manager responsible for the Gold Standard and are planning to submit our package by August 2007.



Olga Dominguez

cc:
Office of Infrastructure and Administration/Mr. Abbed
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