

NASA OIG Review

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Key Reports

INFORMATION TECHNOLOGY SECURITY

Successful accomplishment of NASA's mission depends heavily on automated information resources. As technology evolves, these resources face increasing vulnerability to external and internal attack. Recent OIG reports continue to address the vulnerability of NASA information systems to attacks.



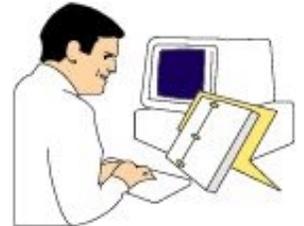
Our report on *NASA's Vulnerabilities to Hostile Attacks as of September 30, 2000 (IG-01-002)* listed numerous areas in which the Agency had IT security problems. These included:

- Training, developing and recruiting highly skilled IT personnel
- Security planning
- Physical security
- Personnel security
- Access warning banners
- Software change controls
- Continuity of operations
- Host- and network-based security
- Communications security
- Incident response capabilities

Throughout FY 2000, NASA and the OIG worked together in an effort to identify and correct these problems. However, NASA's vulnerability to hostile attacks remains high. The report concluded that NASA's IT security program is fragmented, and that NASA's IT security was a material control weakness reportable in accordance with the Federal Managers'

Financial Integrity Act (FMFIA). NASA management disagrees with this characterization.

Another recent report, *System Information Technology Security Planning (IG-00-055)*, also identified weaknesses in NASA's IT security planning, policy, and implementation. We found



that NASA had not adequately complied with the Computer Security Act of 1987 and OMB Circular A-130, "Management of Federal Information Resources." We recommended that NASA management establish a process to manage the development and implementation of IT system security plans and revise Agency IT security policy on personnel screening requirements. NASA management concurred with seven of the report's ten recommendations. We are working with management to resolve the other recommendations.

NASA OIG News Releases

The NASA Office of Inspector General issues news releases regarding audits, inspections, criminal investigations, and OIG publications. News releases can be received electronically by following the instructions below:

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ASTRONAUT MEDICAL AIRCRAFT

In response to a congressional request, we reviewed NASA's plan to acquire an aircraft for use as a dedicated medical transport for the International Space Station crew. Our *Assessment of the Crew Medical Transport Barter Arrangement (G-00-015)* found that negotiations were underway for NASA to acquire a Boeing Business Jet in a barter arrangement involving NASDA, the Government of Japan, and Mitsubishi, Inc. According to NASA, the medical transport aircraft would be used to provide a contingency response capability during launch, landing, and on-orbit operations; to enhance post-flight recovery support for astronauts after long-duration missions; and to enhance the astronauts' pre-launch health stabilization support.



Boeing Business Jet

NASA determined that the acquisition of the aircraft was the most effective approach to meeting crew medical needs. However, we found NASA's analyses supporting this determination did not consider all reasonable alternatives. We recommended that NASA conduct an independent analysis to determine the most appropriate approach to providing its astronauts with emergency, pre-launch, and post-mission medical support and reconsider the Agency's plan to acquire a dedicated crew medical transport through a barter arrangement.

NASA management did not concur with the report's recommendation. Management also stated that it has already considered alternatives and believes the barter arrangement is the most expeditious means of obtaining the crew medical transport capability.

OVERSIGHT OF RUSSIAN BIOTECHNOLOGY



From 1994 to 1997, NASA provided funding to Russian research institutes as part of the Agency's \$400 million procurement of goods and services associated with U.S./Russian cooperative space activities in the Shuttle/Mir era. This \$20 million Russian Science Research Program (RSRP) supported research in ten disciplines, one of which was biotechnology.

Our report, *NASA Oversight of Russian Biotechnology Research, 1994-1997 (G-00-007)*, found that NASA's funding of biotechnology research through the RSRP

was successful in some regards. Both NASA and Russian overhead costs were relatively low and the program was highly efficient in transferring funding to Russian research institutes. The contract between NASA and the Russian Space Agency was also well designed in some aspects and NASA did well in emphasizing the importance of proper treatment of human and animal research subjects.

However, by not exercising its ability to influence project selection, and not providing oversight of the peer review process, NASA reduced its ability to determine whether the Russians were conducting a merit-based peer review process that would produce high-quality science. In hindsight, NASA could also have structured the RSRP contract to provide increased assurance that the funding would actually reach the researchers.

NASA made one serious misstep. After learning that it was funding biotechnology research at institutes that had been part of the Soviet biological warfare program, and after being provided guidance by the State Department on how to collaborate safely with such institutes, NASA did not follow the State Department guidance.

We recommended that NASA carefully coordinate with the State Department on any future program that funds foreign researchers, particularly in nations not traditionally allied with the United States. NASA concurred with our findings and recommendation.

SPACE STATION PROGRAM EXPORTS

NASA's international activities often involve the transfer of commodities, software, or technologies to foreign entities. The transfers are generally subject to export control laws and regulations, regardless of whether they occur in the United States, overseas, or in space. NASA's contractors are responsible for following the same U.S. export laws and regulations as the Agency.

Our audit, *Contractor Exports of Controlled Technologies (IG-00-048)*, found that a NASA contractor, Boeing Space and Communications Group, might not have complied with applicable export laws and regulations when exporting controlled items on behalf of the Space Station program. Boeing was unable to readily produce records related to exports of controlled technologies. Further, on two of the six NASA-obtained export licenses related to the Space Station, Boeing potentially exported controlled technologies beyond the scope of its licenses. We made several recommendations to improve compliance with export requirements. Management concurred with the recommendations.

FOREIGN VISITORS AT NASA

Under the National Aeronautics and Space Act of 1958, NASA has a responsibility to cooperate with other nations in the conduct of its activities. NASA hosts foreign national visitors to attend meetings or conferences, perform intermittent or regular work on a program related to an international agreement, conduct scientific research under a cooperative educational program, or work for a support contractor. Our audit of *Foreign National Visitors at NASA Centers (IG-00-034)* found controls over access to NASA Centers by these visitors needed to be strengthened and uniformly applied on an Agencywide basis. Controls over access by foreign national visitors varied among the four Centers we reviewed. We also found that NASA lacks a visitor management information system for foreign nationals. We recommended that management:

- Revise the definition of a foreign national in NASA policy guidance to ensure controls are in effect at NASA Centers for all visitors who are not U.S. citizens.
- Revise existing policy to establish NASA-wide requirements and procedures for obtaining National Agency Checks and for escorting foreign visitors.
- Establish a NASA-wide policy for badging foreign nationals.
- Develop and implement a NASA-wide management information system to support the foreign national visitor program.

Management concurred with all of the recommendations and planned responsive corrective actions.

CONTRACTOR SAFETY

The NASA Administrator has stated that safety is the Agency's highest core value. Our report, *Contract Safety Requirements at Kennedy Space Center and Marshall Space Flight Center (IG-00-035)*, identifies the actions NASA is taking to ensure its contractor workforce is supportive of, and accountable for, safety.



Through the Risk-Based Acquisition Management Initiative, the Agency is revising the updated NASA Federal Acquisition Regulation Supplement to ensure that risk is the core concern of all new contracting actions, except

for the purchase of commercial off-the-shelf items. Although the initiative is a positive step toward

improving the safety practices of NASA contractors, the initiative does not apply to existing contracts. In 15 of 25 existing contracts we reviewed, the Agency had not applied basic safety provisions, such as required contract safety clauses, contractor safety plans at contract award, and Center safety office involvement in the procurement process. As a result, all NASA contractors, including some involved in hazardous operations, may not be supporting the same safety goals as NASA. We recommended that management:

- Determine whether contracts have required safety clauses and contractor safety plans.
- Determine the cost-effectiveness of modifying those contracts determined deficient, assess the risk of not modifying the contracts, and make those modifications deemed cost-effective and necessary.
- Direct Center safety offices to assist the responsible Center official in performing an appropriate level of contractor surveillance for each current applicable contract.

Management concurred with the recommendations and initiated responsive corrective actions. In addition, the NASA Administrator personally advocated that procurement officials act on the recommendations of the report.

Ongoing Reviews

SPACE STATION PROPULSION MODULES

The objective of this audit is to determine whether NASA has developed a cost-effective acquisition strategy for long-term propulsion capability for the International Space Station. We will determine whether NASA identified and adopted the most feasible means for providing long-term propulsion capability for the Space Station, and whether the Agency has developed an appropriate acquisition strategy to limit the cost of the propulsion modules.

PROCUREMENT WORKFORCE PLANNING

The purpose of this audit is to determine whether NASA is adequately planning for its procurement workforce needs. We will determine whether: (1) the Centers will have adequately trained procurement staff for future needs; (2) the contracting intern program has been effective in recruiting and retaining new staff; and (3) appropriate investments in education, training, and development exist.

Ongoing Reviews

AEROSPACE TEST FACILITIES

In this audit, we will determine whether NASA efficiently and effectively uses and maintains aerospace test facilities. We will assess utilization at existing and planned test facilities, and NASA's controls over repair and maintenance activities at test facilities to ensure safe and reliable operations.

NASA TELECOMMUNICATIONS MANAGEMENT

The objective of this effort is to assess whether NASA has effectively and efficiently managed its telecommunications services. We will determine whether management controls are sufficient to ensure that NASA procures only required services and support.

APPROVING ACCESS

The purpose of this audit is to determine whether NASA appropriately grants individual access to computer systems, programs, and data. We will determine whether: (1) appropriate background investigations have been performed for NASA and contractor personnel who obtain user accounts and access privileges, and (2) the level of access granted to contractor employees is commensurate with contract requirements.

VERIFYING GPRA DATA

The objective of the audit is to assess the quality of data that supported NASA's Fiscal Year 2000 Performance Report. We will review and test selected performance targets to assess whether the data are appropriate for the performance target. We will also evaluate the data for completeness, accuracy, consistence, and timeliness.

METRIC SYSTEM

Following the discovery that a problem involving units of measurement had led to the loss of the Mars Climate Orbiter, we initiated a review of the Agency's use of the metric system. This assessment will review Agency compliance with Federal laws and regulations, as well as NASA policies, regarding use of the metric system of measurement.

Investigations

The OIG's investigative staff conduct criminal and regulatory investigations in which NASA is a victim. Highlights of recent investigations follow:

COMPUTER HACKER PLEADS GUILTY

Following an investigation conducted by Special Agents of the OIG's Computer Crimes Division and the FBI, a New York man pled guilty to five counts of gaining unauthorized access to nonpublic computers, unauthorized interception of communications, and unauthorized possession of access devices (credit card numbers and usernames/passwords).

The hacker gained unauthorized access to two computers at NASA's Jet Propulsion Laboratory. Investigators also found that he possessed credit card numbers, usernames, and passwords for other computer systems. As a result of his guilty plea, the man faces a maximum sentence of 27 years in prison and fines totaling \$950,000. Sentencing has been set for March 7, 2001.

CRUISE BY LAND

The Goddard Employee Welfare Association hired a travel agent to book a cruise to the Bahamas, but instead of arranging the cruise, the agent pocketed the money. The Office of Criminal Investigations (OCI) conducted an investigation that resulted in the prosecution of the travel agent.



The OCI obtained a warrant for her arrest, and the Montgomery County Sheriff's Office returned her via a 5-day, cross-country bus trip. The travel agent was sentenced to 18 months incarceration with a suspended sentence and 2 years probation. She was credited with 14 days of jail time served while awaiting extradition. The OCI recovered \$10,800 for the employee association and the travel agent was ordered to pay an additional \$7,300 restitution to other affected parties.



Investigations

CHILD PORNOGRAPHY

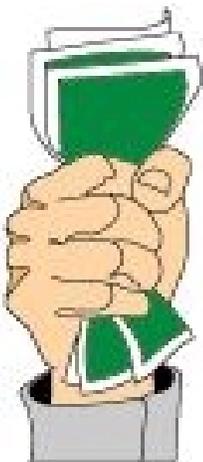
On November 13, 2000, a former computer administrator for a contractor at the Glenn Research Center in Cleveland, OH, pled guilty to four felony counts of producing and distributing child pornography, receiving child pornography by computer, and possession of child pornography. The employee signed a plea agreement in which he admitted to violating the four felony counts.



The former employee used NASA's high-speed computers and large storage capacities to send, receive, and store large quantities of child pornography. He utilized encryption technology and other tools to disguise his true identity and the nature of the computer media.

As a result of the plea agreement, the former employee could receive a sentence ranging from 11 to 14 years incarceration, followed by up to 3 years of supervised release. His agreement further requires him to make full restitution to his victims and forfeit his video camera, computers and related equipment used in the commission of his crimes. His sentencing is scheduled for April 5, 2001.

KICKBACKS AND THEFT OF NASA PROPERTY



On June 6, 2000, a NASA industrial supply vendor and five former NASA contractor employees were indicted for conspiracy in the solicitation and acceptance of kickbacks. Two of the contractor employees and an additional contractor employee were also indicted for felony theft of NASA Government property.

The vendor paid kickbacks to six employees of Johnson Controls World Services, Inc., a former NASA prime contractor at the John C. Stennis Space Center to induce non-competed subcontract awards to his company. The scheme caused the Space Center to order millions of dollars worth of materials

that were not needed. In some instances, the materials were subsequently stolen and resold to NASA.

The vendor pled guilty to paying kickbacks to six contractor employees. Three prime contractor employees pled guilty to kickback conspiracy charges and three employees pled guilty to felony theft of NASA Government property in excess of \$18,800.

The OCI is also pursuing another kickback case that recently resulted in a Florida company and its owner pleading guilty to violating the Anti-Kickback Act of 1986. The company paid a Lockheed Martin procurement supervisor to obtain NASA subcontracts.

SHUTTLE CHALLENGER PARTS ON eBAY

All recovered pieces of the Space Shuttle Challenger are Government property. However, on October 28, 1999, a heat shield tile from the Challenger was offered for sale on the Internet auction site, eBay.

A former sailor assigned to the *USS Aubrey Fitch* listed the tile for auction. The *USS Aubrey Fitch* participated in the 1986 effort to recover parts of the Challenger from the waters of the Atlantic Ocean. During the operation, the sailor obtained the heat shield by dipping a bucket into the Ocean. Although all debris retrieved from the Challenger was supposed to be returned to a hangar at the Kennedy Space Center for use in the reconstruction of the Challenger, the man kept the heat shield.



Challenger STS 51-L
Mission Patch

On August 22, 2000, the former sailor pled guilty in U.S. District Court to possession of Government property with the intent to convert to his own use. The court sentenced him to 2 years probation.

NASA OIG HOTLINE

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More New Reports!

- Review of Research Flight Operations at the Glenn Research Center (*Report IG-00-037*)
- Consolidated Space Operations Contract—Cost Benefit Analysis and Award Fee Structure (*Report IG-00-043*)
- NASA's Independent Cost Estimating Capability (*Report IG-00-045*)
- NASA's Planning and Implementation for Presidential Decision Directive 63—Phase I (*Report IG-00-057*)
- Configuration Controls in Desktop Outsourcing (*Report IG-00-060*)
- Assessment of the Portable Computer System and the Data Display Process (*Report G-99-010A*)
- International Space Station Command and Control Communications Security (*Report G-99-010B*)

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The website of the NASA Office of Inspector General is located at:

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The website describes the NASA OIG's mission and contains links to our published reports, testimony, and news releases, as well as contact information for the OIG staff.

- Intergovernmental Personnel Act Assignments to NASA. (*Report G-99-018*)
- Assessment of Agencywide Use of Support Service Contractors at NASA (*Report G-00-016*)
- Kennedy Space Center Proposed Media Center (*Report IG-00-047*)



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