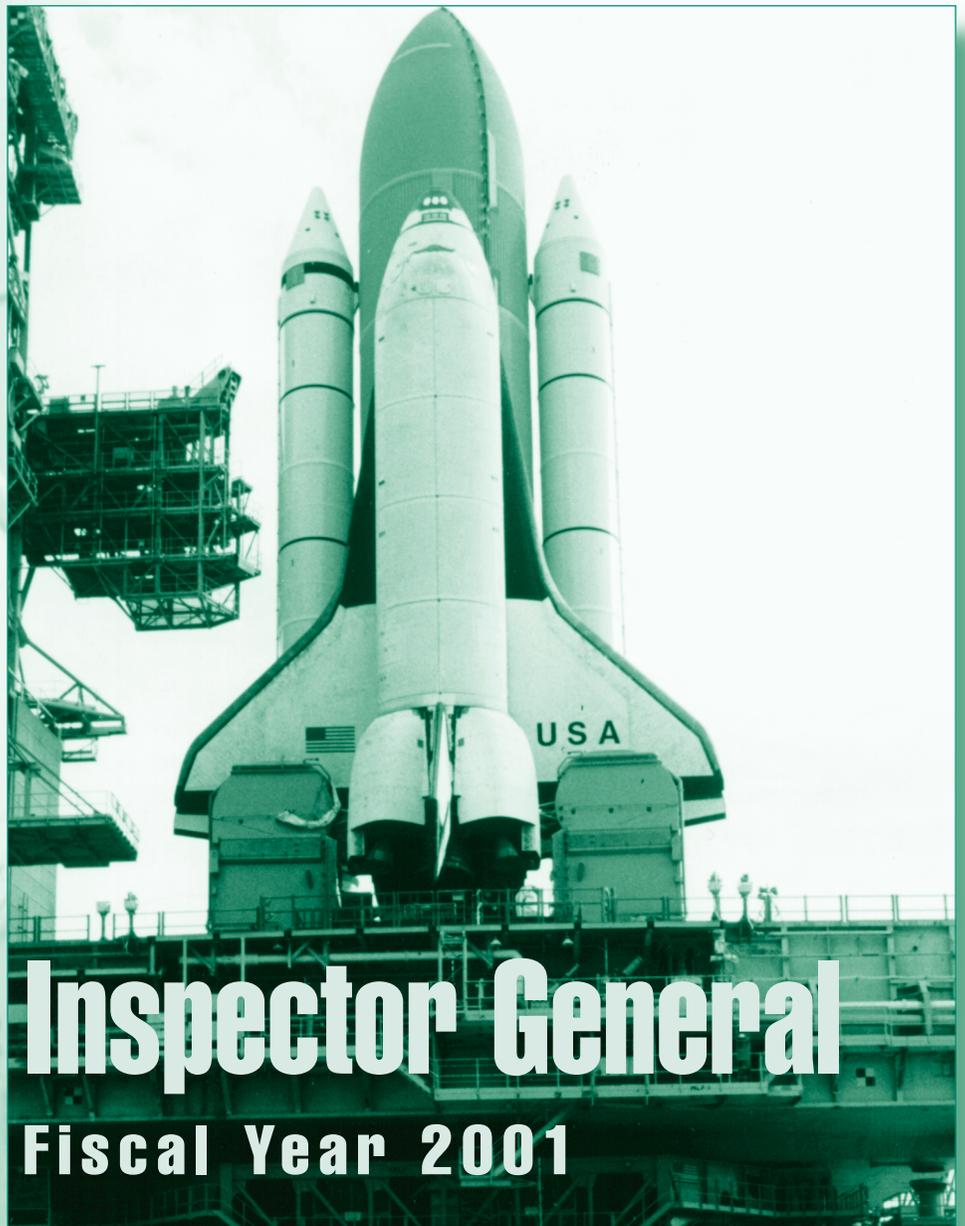




National Aeronautics and
Space Administration



Office of Inspector General

Annual Plan Fiscal Year 2001

Introduction

The Office of Inspector General (OIG) Annual Plan for Fiscal Year (FY) 2001 represents the planned work of the Offices of Audits; Inspections, Administrative Investigations, and Assessments; and Criminal Investigations. These three program offices will focus on issues that serve the needs of NASA, Congress, and the public.

Our planning and resources are directed to NASA's major programs and activities, particularly those areas we believe present the greatest challenges to Agency management. The NASA Administrator established safety as the Agency's number one priority. We will continue to support that priority by performing audits and reviews on safety-related issues. Information technology (IT) is a key tool of a scientific and technological organization. NASA's ability to remain free from unauthorized access of its network becomes more critical as the Agency's reliance on cyber-communications increases. With intrusions and other computer security breaches on the rise, we will continue to focus our work and significant resources to help assure the security and integrity of NASA's computer and communications systems. While NASA's reliance on contractors is increasing, the Federal Government is reducing contract audit and administration oversight, and streamlining acquisition regulations. Good contract management is key for the Agency's efficient and effective use of its resources. Therefore, we will also continue our focus on procurement.

This workplan provides the programs and issues that we plan to review during FY 2001. We consider these areas to be both relevant and important to the Agency's implementation of its strategic plan. This planning process is a flexible and evolving effort that we will update periodically to address emerging issues and problems, and to be responsive to the requests and concerns of Congress, NASA, and others. The most current workplan will be available through the OIG Internet homepage <<http://www.hq.nasa.gov/office/oig/hq>>.

We welcome your suggestions for improving this document or for additional areas and issues to review. You may contact my staff or me directly at the telephone numbers listed in the chart, Points of Contact, on page 5. You may also leave the information on the OIG Hotline at 1-800-424-9183 or TDD 1-800-535-8134.

Roberta L. Gross
Inspector General

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About the cover:

Space Shuttle Columbia sits on Launch Pad 39B in preparation for the launch of STS-93, the first Shuttle mission commanded by a female astronaut.

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ACRONYMS

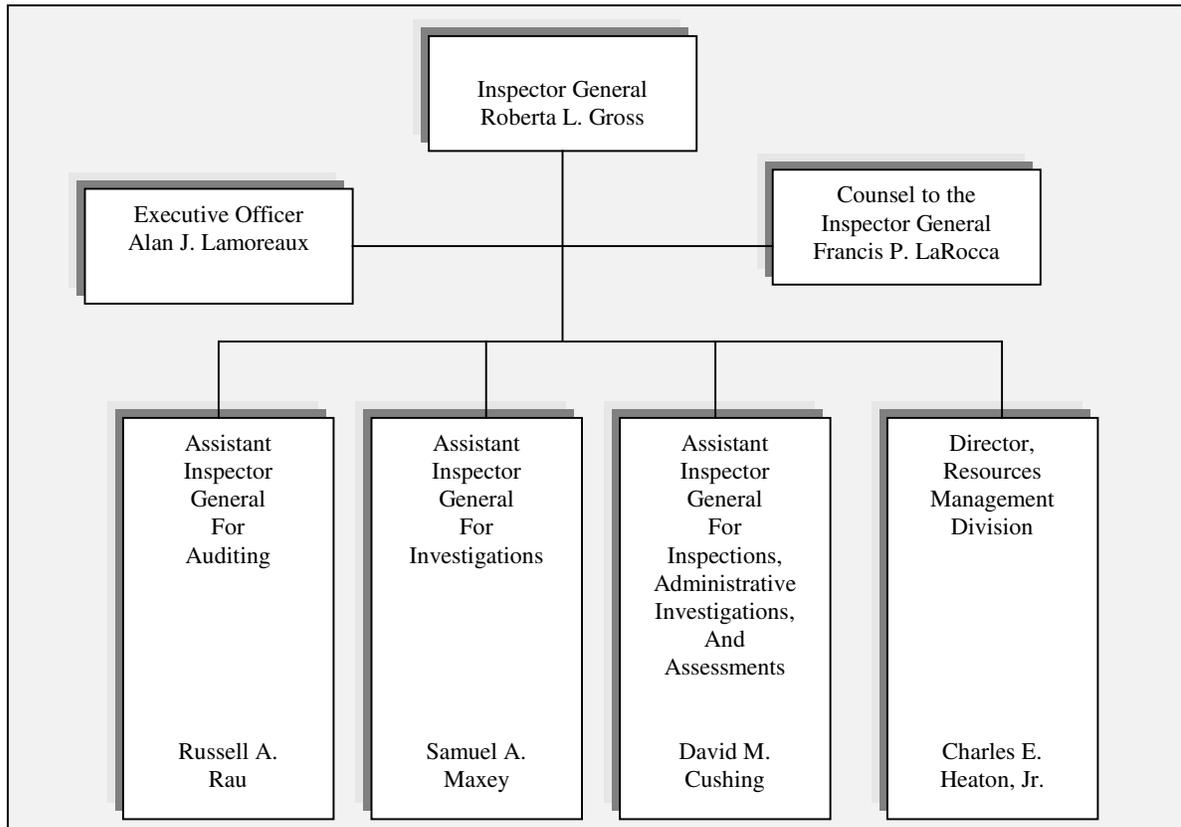
AIGA	Assistant Inspector General for Auditing
AIGI	Assistant Inspector General for Investigations
AIS	Automated Information Security
ASAP	Aerospace Safety Advisory Panel
ASI	Agency Safety Initiative
ASTP	Advance Space Transportation Programs
CCD	Commuter Crimes Division
CIO	Chief Information Officer
COMSEC	Communications Security
CPA	Certified Public Accountant
CRV	Crew Return Vehicle
CSOC	Consolidated Space Operations Contract
DCMA	Defense Contract Management Agency
ELV	Expendable Launch Vehicle
EOS	Earth Observing System
EPP	Emergency Preparedness Program
FAR	Federal Acquisition Regulation
FMFIA	Federal Manager's Financial Integrity Act
FY	Fiscal Year
GAO	General Accounting Office
GFE	Government Furnished Equipment
GPRA	Government Performance and Results Act
GSA	General Services Administration
HST	Hubble Space Telescope
IAIA	Inspections, Administrative Investigations and Assessments
IFMP	Integrated Financial Management Project
IPA	Independent Public Accounting
IRIS	Incident Reporting and Information System
ISS	International Space Station
IT	Information Technology
ITS	Information Technology Security
JPL	Jet Propulsion Laboratory
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NPG	NASA Policy Guidance
OCI	Office of Criminal Investigations
ODIN	Outsourcing Desktop Initiative
OIG	Office of Inspector General
OMB	Office of Management and Budget

PBC	Performance-Based Service Contracts
PCS	Portable Computer System
PDD	Presidential Decision Directive
QASP	Quality Assurance Surveillance Plans
RLV	Reusable Launch Vehicle
SSC	Stennis Space Center
STI	Scientific and Technical Information
STTR	Small Business Technology Transfer
TDD	Telecommunications Device for the Deaf
U.S.	United States
USA	United Space Alliance

Section I — Organization and Operation

The NASA OIG is a diverse multidiscipline workforce located at Headquarters and in field offices at all NASA Centers. During FY 2000, the OIG had an authorized budget of \$20.0 million. The OIG is currently staffed by 200 full-time civil servants located in offices at NASA Headquarters, each NASA Center, the Jet Propulsion Laboratory, and other sites throughout the country. The current organizational structure focuses resources on those areas representing the Agency's highest vulnerabilities, especially procurement, information technology, telecommunications activities, and export and sensitive technology controls and processes.

OIG Organization



OIG Authority

The Inspector General Act of 1978, as amended, grants the OIG the administrative authority to:

- Receive full access to all records and materials available to the Agency.
- Determine which audits, investigations, inspections, and reviews are necessary and issue appropriate reports.
- Issue subpoenas for non-Federal records.
- Report directly to the head of the Agency.
- Receive employee and other complaints, protect sources, and when necessary, refer matters to the United States Attorney General.
- Hire employees, experts, and consultants and procure necessary equipment and services.
- Obtain assistance from other agencies, including Federal, State, and local governments.

Office of Audits

We provide a broad range of professional audit services with emphasis on performance and information systems audits. Additionally, we oversee the work of outside auditors performing activities for NASA. The audit program is carried out by a staff of professional auditors who hold various professional certifications, including Certified Public Accountant (CPA) and Certified Internal Auditor. To effectively focus its resources, the Office of Audits correlates its work with NASA's major programs and activities.

The audit program's primary purpose is to review Agency and contractor programs and operations to determine whether:

- Financial and other information is reliable.
- Internal controls are adequate and resources are safeguarded.
- Appropriated funds are properly expended.
- Operations are efficient and economical.
- The intended results of programs and activities are achieved.

OIG audits are performed in accordance with Government and professional auditing standards, which usually result in written reports that summarize the work performed and recommend actions to correct significant problems. These reports are addressed to the Agency official(s) responsible for the subject matter. Copies of these reports are also distributed to other interested parties. The public may obtain copies by faxing a request to the Assistant Inspector General for Auditing (AIGA) at (202) 358-3022, or by

accessing the OIG Internet homepage at
<<http://www.hq.nasa.gov/office/oig/hq/audits.html>>.

Office of Inspections, Administrative Investigations, and Assessments

The primary purpose of the Office of Inspections, Administrative Investigations, and Assessments (IAIA) is to perform evaluations of Agency and contractor activities that require rapid response and reporting back to the Agency. The unit also conducts administrative investigations of non-criminal matters. Feedback on results of IAIA work usually includes written reports to Agency officials with recommended corrective measures, potential administrative actions, or other possible remedies, as appropriate. Formal reports and other IAIA work products also identify issues appropriate for expanded OIG audits or investigations. Interested parties may obtain copies of inspection and assessment reports by contacting the Director, Inspections and Assessments Division by faxing a request to (202) 358-2990, or by accessing the OIG Internet homepage at <<http://www.hq.nasa.gov/office/oig/hq/inspections/inspections.html>>.

Office of Criminal Investigations

The primary mission of the Office of Criminal Investigations (OCI) is to conduct criminal and civil investigations of reported or suspected fraudulent or criminal acts by contractors, employees, and others that impact NASA programs and operations. Special agents of the OCI work closely with other Federal law enforcement agencies and Federal prosecutors to detect, prosecute, and prevent these acts. Other OIG investigations concern matters affecting the integrity of NASA programs and personnel, such as corruption and environmental malfeasance. Although much investigative emphasis is placed on major procurement fraud, we have substantially increased our involvement in the detection and prevention of computer-related crimes.

Our Computer Crimes Division (CCD) responds to attacks against NASA's vast telephony, Internet, and space systems networks. Reactive response to cyber attacks requires that CCD work closely with Agency officials as well as with other law enforcement organizations. In addition to its investigative activities, CCD conducts outreach activities regarding the commission of cyber attacks.

Inquiries regarding investigative reports must be submitted under the Freedom of Information Act. Such inquiries must be submitted in writing and either mailed to the Assistant Inspector General for Investigations (AIGI) or faxed to (202) 358-2767. Further information about the investigations program can be found by accessing the OIG Internet homepage at <<http://www.hq.nasa.gov/office/oig/hq/investigations.html>>.

Agency Relationship with the OIG

NASA employees, as well as contractor and grantee employees, have certain responsibilities regarding the OIG. They should fully cooperate with OIG employees who

are conducting official business and promptly notify the OIG of any suspected or actual criminal activity, fraud, mismanagement, and other wasteful or abusive practices or acts. Agency officials and supervisors should also be knowledgeable of their internal control responsibilities, and work to increase staff awareness of internal controls and OIG activities. Provisions of the “Whistleblower Act” and related statutes, as well as the OIG’s authority to protect the confidentiality of sources under specific conditions, provide reasonable protections to those who report violations or problems.

Anonymous complaints are received telephonically through the 24-hour OIG Hotline at 1-800-424-9183 (TDD, 1-800-535-8134). The OIG also receives written complaints at the following address: NASA Office of Inspector General, P.O. Box 23089, L’Enfant Plaza Station, Washington, DC 20026. Complaints may also be faxed to (202) 358-2767. Our Cyber Hotline on the World Wide Web is <<http://www.hq.nasa.gov/office/oig/hq/hotline.html>>.

Points of Contact

The OIG values the comments and recommendations about the OIG and its mission. If you have questions or want further information regarding this workplan, you may contact the following individuals:

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Section II — Description of the Workplan

Under the authority of the Inspector General Act, the OIG's mission is to conduct and supervise independent audits, investigations, inspections, and other reviews to promote economy, efficiency, and effectiveness and prevent and detect fraud, waste, and mismanagement in Agency programs. To fulfill that mission and help NASA achieve its scientific and technologic goals, we have aligned our programs to focus on those areas we believe represent the Agency's highest vulnerabilities. We have identified those areas as NASA's top ten management challenges, to include:

1. Safety and Mission Assurance
2. International Space Station
3. Information Technology
4. Procurement
5. Fiscal Management
6. Program and Project Management
7. Launch Vehicles
8. Technology Development
9. International Agreements
10. Environmental Management

The NASA OIG has a positive role in helping the Agency meet its goals. We believe our planned projects for FY 2001 address NASA's top ten challenges and will assist NASA's missions in the new millennium. In addition, our review of the Agency's implementation of Government Performance and Results Act (GPRA) requirements cuts across all challenge areas. The GPRA work will assess the metrics NASA developed to measure the success of its programs and how well the Agency is measuring its performance.

NASA's dynamic environment, leading technology, and commercialization of the aerospace industry are some of the factors that require us to respond rapidly to new issues. Therefore, this workplan is a flexible, evolving document. Emerging priorities and issues may delay some planned assignments while new reviews not listed may be initiated. Current information on our planning and details related to specific workplan project objectives are provided to our customers and will be updated as needed on the NASA OIG homepage <<http://www.hq.nasa.gov/office/oig/hq>>.

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Section III — Summary of Carryover and Planned Projects Fiscal Year 2001

1. Safety and Mission Assurance

Background The NASA Administrator has stated that the Agency's number one core value is safety. NASA's Agency Safety Initiative (ASI) established a goal to make the Agency the nation's leader in the safety and occupational health of its workforce and the safety of the products and services it provides. The ASI's four Core Process Requirements are to promote and ensure safety for (1) the public, (2) astronauts and pilots, (3) employees on the ground, and (4) high-value equipment and property. Space exploration involves risk, including the risk of failure. Without risk, there can be little discovery, and discovery is NASA's principal mission. To maximize the likelihood of success, NASA must become an informed risk taker by identifying, understanding, and managing risk as part of all activities.

NASA has taken action to ensure its contractor workforce is supportive of and accountable for safety. In April 1999, the Agency established Risk-Based Acquisition Management as a NASA procurement initiative to reduce the likelihood and severity of impact from unforeseen events through vigorous risk management. A key element of the initiative includes revising the NASA Federal Acquisition Regulation (FAR) Supplement to incorporate risk management including safety and security considerations as the core concern of all contracting actions except for the purchase of commercial off-the-shelf items.

The Aerospace Safety Advisory Panel (ASAP) also continuously reviews NASA's safety processes and procedures. In its 1998 Annual Report, the ASAP made recommendations to help NASA improve safety. The ASAP report highlighted concerns with the potential effects on safety of workforce reductions and the continued transition of Space Shuttle functions to the Space Flight Operations Contract. Overall, the ASAP concluded that although safety is well served for the present, the picture is not as clear for the future. The ASAP particularly expressed concern with NASA's aging workforce and the Agency's inability to adequately plan for its succession because of hiring constraints. The report also states that the Space Shuttle and the International Space Station (ISS) have also been limited in their ability to plan for the future. For example, the ASAP expressed concern that beneficial and mandatory safety and operational upgrades for the Space Shuttle are being delayed because of a lack of funding.

Future Challenges Keys to ensuring safety in future NASA operations include:

- Assuring appropriate level of training for staff who conduct safety reviews and evaluations.

- Maintaining adequate safety reporting systems.
- Ensuring variances to standard safety procedures are appropriately justified, reviewed, and approved.
- Maintaining an effective emergency preparedness program.
- Ensuring Agency and contractor compliance with safety standards and regulations.
- Ensuring product safety and reliability.
- Ensuring the Space Shuttle and ISS maintains crew safety.

Table 1, which follows, describes our carryover and planned work for FY 2001 related to this challenge.

Table 1 – Safety and Mission Assurance Carryover and Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Aviation Safety Program (Carryover) (A0000100)	Determining whether overall program management is effectively coordinating with partner agencies and using metrics to determine accomplishments.
Audits	Audit of United Space Alliance (USA) Safety Procedures (Carryover) (A0004100)	Evaluating USA's safety procedures for NASA's Space Flight Operations Contract.
Audits	Aerospace Test Facilities (Carryover) (A0004500)	Determining whether NASA protects its national assets through a program that adequately maintains aerospace test facilities and ensures that facilities are reliable and free from significant safety problems.
Audits	Contractor Safety Procedures at Stennis Space Center (SSC) (Carryover) (A0004800)	Evaluating the safety practices of contractors at SSC to determine whether safety responsibilities are clearly defined and oversight is effective.
Audits	NASA's Incident Reporting and Information System (IRIS)	Determining whether information maintained in the IRIS is current, complete, consistent, and reliable; assessing the adequacy of management controls over the IRIS, and evaluating management's use of information contained in IRIS.
Audits	NASA Safety Variance Process	Determining whether safety variances are prepared in accordance with NASA policy and are supported by risk analysis and a safety office approval.

(Continued)

Table 1 – Safety and Mission Assurance Carryover and Planned Work
(continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Safety Programs of Major Contractors	Determining whether major NASA contractors' safety programs are well documented and effective, safety requirements and surveillance procedures are included in applicable contracts, and the NASA safety staff perform adequate surveillance of the contractors' safety programs.
Audits	NASA Emergency Preparedness Program (EPP)	Evaluating selected Center EPP's to determine whether they adequately address emergency response, mitigation, and recovery.
Audits	Orbital Debris Generation	Determining whether orbital debris assessments are being performed on applicable NASA projects and whether the assessments are performed in accordance with NASA policy and procedures.
Audits	Security Clearance Process	Determining whether the NASA personnel security clearance process is effective.
Audits	Effectiveness of Flight Readiness Reviews of Space Shuttle	Determining the effectiveness of the Flight Readiness Review process for balancing safety requirements and streamlining, identifying anomalies for resolution, and resolving exceptions.
Audits	Flight Range Safety for NASA-sponsored Tests (X-34)	Evaluating the adequacy of safety planning for flight tests conducted at non-NASA locations. In particular, assessing flight range safety issues associated with the X-34 flight test program.
Inspections	Drug-Free Workplace Program	Determining whether the Drug-Free Workplace Program is compliant with laws and regulations and evaluate controls for oversight and drug testing.
Inspections	On-Orbit Space Shuttle Risks	Determining whether funding for Space Shuttle safety upgrades is being appropriately directed toward reducing the risk from on-orbit hazards.
Inspections	Hubble Space Telescope (HST) Retrieval	Determining how costs and benefits of retrieving the HST compare with either de-orbiting the HST or sending it into a "graveyard" orbit. Determining whether there may be alternative approaches for final HST disposal.

(Continued)

Table 1 – Safety and Mission Assurance Carryover and Planned Work
(continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Inspections	International Space Station Noise Exposure Management	Determining whether noise levels for the ISS were properly determined; how they differ among ISS modules; the affects on astronauts, both while on station and long-term; and what, if any, modifications are planned to reduce ISS noise levels.
Inspections	NASA Medical Facilities	Determining the adequacy of internal controls to prevent excessive dispensing and loss of controlled substances at NASA medical facilities.
Inspections	Safety Clearance Procedures	Determining whether an effective safety clearance procedure, using a proper Occupational Safety and Health Administration lockout procedure, has been established and administered. Determining whether personnel are properly trained in safety clearance procedures.
Inspections	Health Reports by Flight Crews (ISS and Shuttle)	Determining whether appropriate reporting mechanisms are in place for adequate communication between flight crews, principal investigators performing experiments, and medical officers monitoring crews to ensure: (1) crew safety and health and (2) accurate science.

2. International Space Station

Background The mission of the ISS is to enable long-term exploration of space. The ISS will provide scientists, engineers, and entrepreneurs a platform on which to perform complex, long-duration, and replicable experiments in the unique environment of space. The launch of the *Zarya* Control Module in November 1998 began the assembly phase of the ISS. Since then, two other elements have been added—*Unity*, the United States (U.S.) Node 1, in December 1998; and *Zvezda*, the Russian-built Service Module, in July 2000. NASA’s acquisition of a Propulsion Module will reduce dependence on Russian participation in the ISS.

Our reviews have found significant concerns related to ISS cost, contingency planning, and the X-38/Crew Return Vehicle (CRV). ISS contracts continue to experience significant cost growth. In March 1999, Boeing, the prime contractor, announced that actual and projected cost overruns on the ISS prime contract had grown by \$203 million, from \$783 million to \$986 million. This was the third major increase in reported overruns within 2 years—a total increase of \$708 million over original cost estimates. NASA’s contingency planning for international partners did not include cost and schedule impacts, clearly identify mitigation measures and consequences, or include some actions being taken to address further Russian delays.

The United States is committed to providing a crew-return capability for the ISS. During our audit of X-38/CRV Project Management, we found that (1) NASA had made no provision for an operational test of the CRV to determine its safety for human space flight and (2) the Project’s acquisition strategy of “rapid prototyping” entailed significant risk compared to a more traditional approach.

Future Challenges The keys to continued ISS assembly and operation are:

- Managing the political, financial, technical, and safety challenges presented by an international partnership.
- Overcoming technical challenges inherent in manufacturing, assembling, and testing complex hardware and software components provided by multiple nations and integrated in space.
- Safely maintaining, upgrading, and operating a structure as complicated as the ISS.
- Maximizing the beneficial use of the ISS for scientific research and technology development.

Table 2, which follows, describes our carryover and planned work for FY 2001 related to this challenge.

Table 2 – International Space Station Carryover and Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Acquisition of Space Station Propulsion Modules (Carryover) (A0004300)	Determining whether NASA has developed a cost effective acquisition strategy for long term propulsion capability for the ISS.
Audits	Restructuring of the ISS Contract (Carryover) (A0005500)	Evaluating NASA's December 1999 restructuring of the ISS contract.
Audits	Crew Capacity on the Space Station	Determining whether NASA is taking action to ensure the ISS will have the capability to house a 7-person crew as planned..
Audits	International Space Station Electromagnetic Compatibility Testing	Determining whether NASA has developed an effective and efficient process to ensure that ISS components are electromagnetically compatible and free of electromagnetic interference.
Audits	Space Station Spare Parts Costs	Evaluating the process for acquiring spare parts for the ISS and assessing those prices for fairness and reasonableness.
Audits	Government Furnished Equipment (GFE) for the Space Station	Determining whether the ISS Program Office has assessed the cost-benefit of using GFE rather than contractor-furnished equipment and whether acceptance testing is adequate to ensure the GFE conforms to quality requirements.
Inspections	International Space Station Payload Engineering, Mission Management, and Processing	Determining whether researchers are satisfied with the procedures for manifesting experiments on the ISS and whether researchers have an effective voice in developing policies and procedures related to research on the ISS.

3. Information Technology

Background The Clinger-Cohen Act of 1996 increased the responsibility, authority, and accountability of individual Federal agencies for IT management. This Act vested the Agency Chief Information Officer (CIO) with responsibilities for improving the management of and accountability for the Agency's IT program. NASA's missions and programs depend on properly managed information resources. Consequently, NASA is a significant investor in IT. To streamline operations, NASA is further consolidating and outsourcing various IT operations, including local area networks and desktop computers, mid-range computing, administrative mainframe computer operations, and supercomputing.

Our activities continue to find a fragmented IT security program without clear lines of authority, inadequate policies and guidelines, and ineffective enforcement of existing policies and guidelines. We believe NASA's having separate organizations to handle classified and unclassified IT security causes confusion, inhibits the implementation of a workable IT security program, and leads to duplication of effort, when better solutions are available. Another example of the fragmentation is seen in the division of responsibilities for IT security among multiple Centers. This leads to coordination problems and lack of effective oversight.

We have issued numerous reports addressing these issues and consistently recommended that IT be designated as a high-risk area. The OIG has recommended that NASA designate IT security as a high-risk area in the annual Federal Manager's Financial Integrity Act (FMFIA) Report. We based our recommendation on our concerns about the fragmentation of the IT security program, the lack of policies and guidance, network physical and system security weaknesses, the lack of properly trained personnel, lack of threat analysis, and increasing threats against NASA IT systems. The Agency is committed to implementing a wide range of improvements.

Future Challenges The keys to an effective Information Technology program include:

- Ensuring data security, integrity, and application controls.
- Protecting operations and communications with spacecraft.
- Monitoring and evaluating the streamlining of operations through outsourcing IT operations for cost efficiencies, dependence on the vendor for technological direction, vulnerability of the strategic information to outsiders, and the dependency on the viability of the vendor.

Table 3, which follows, describes our carryover and planned work for FY 2001 related to this challenge.

Table 3 – Information Technology Carryover and Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Billings for Desktop Computing and Telecommunications Outsourcing at Marshall Space Flight Center (Carryover) (A0000801)	Determining adequacy of controls over contractor billings to Marshall for desktop computer and communications assets transitioned to the Outsourcing and Desktop Initiative (ODIN) contractor.
Audits	Audit of Information Technology Security at Kennedy Space Center (Kennedy) Shuttle Data Center (Carryover) (A0002600)	Evaluating host operating system and database security and integrity controls within the Shuttle Data Center at Kennedy.
Audits	UNIX Security – Johnson Space Center’s (Johnson’s) Mission Control Center (Carryover) (A0002800)	Evaluating selected host operating system and security and integrity controls within Johnson’s Mission Control Center.
Audits	NASA’s Planning and Implementation of Presidential Decision Directive 63 (PDD-63) (Carryover) (A0003200)	Evaluating whether NASA has developed and implemented a plan to protect the Agency’s cyber assets consistent with the requirements of PDD-63, “Policy on Critical Infrastructure Protection.”
Audits	UNIX Security at Jet Propulsion Laboratory (JPL) – Institutional Business Systems (Carryover) (A0004000)	Determining whether JPL has established effective policies and procedures and implemented effective operating system controls for its new Institutional Business Systems.
Audits	Telecommunications Management	Determining whether NASA has effectively and efficiently managed its telecommunication services.
Audits	Software Maintenance	Determining whether program and project managers are following NASA policy and standard practices to ensure maintainable software.
Audits	Information Technology Project Management	Evaluating the adequacy of NASA’s program and project management reviews as they relate to IT.
Audits	Security Provisions in Information Technology Contracts	Evaluating the security requirements included in NASA contracts for IT services.

(Continued)

Table 3 – Information Technology Carryover and Planned Work (continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Management of NASA's Public Key Infrastructure	Assessing whether NASA is effectively managing its public key infrastructure.
Audits	Contractor Critical Infrastructure Assurance	Evaluating the adequacy of NASA's oversight of its contractors' efforts to minimize NASA's critical cyber-based vulnerabilities.
Audits	Implementation of Selected Encryption Technologies	Assessing whether NASA is effectively implementing selected encryption technologies.
Audits	Critical Infrastructure Assurance – Phases II and III	Evaluating whether NASA has implemented its plan to protect NASA's cyber and physical assets consistent with the requirements of PDD-63.
Audits	NASA Information Security Program Management	Determining whether NASA has developed and implemented an information security program to effectively protect its assets, and ensure compliance with the Government Information Security Act.
Audits	Information Technology Acquisition Process	Determining whether NASA is acquiring IT in accordance with applicable laws, regulations, policies, and procedures.
Audits	Operating System Controls in Major NASA Information Systems	Determining whether the operating system environment has been configured and implemented to provide for an appropriate level of security and integrity.
Audits	Database Controls in Major NASA Information Systems	Determining whether database security and integrity controls have been adequately implemented in the major systems selected for audit.
Audits	Network Controls in Major NASA Information Systems	Determining whether controls in the network environment are adequate to protect against unauthorized access and transmission risks.
Inspections	Computer Banner Inspection (Continuous)	Determining whether banners are properly installed on NASA computers is being followed. This is an ongoing activity to be continued each fiscal year.
Inspections	Hard Drive: Clearing Controlled Information from Excessed Micro-computers (Continuous)	Determining whether computers in the process of being excessed have been properly cleaned of all data and software. This is an ongoing activity to be continued each fiscal year.

(Continued)

Table 3 – Information Technology Carryover and Planned Work (continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Inspections	Internet-Based Spacecraft Commanding (Carryover) (G-00-017)	Determining whether adequate IT security safeguards to protect command and control have been considered in the development of Internet-based commanding of satellite payloads and experiments.
Inspections	Assessment of Information Technology Security Training and Development (Carryover) (G-00-019)	Determining whether training and development for IT security personnel at NASA are adequate and in accordance with Federal and NASA standards.
Inspections	NASA’s Communications Security (COMSEC) Program	Determining whether NASA’s COMSEC program and its associated organizational structure is adequate to ensure compliance with nationally mandated COMSEC policy.
Inspections	Outsourcing Desktop Initiative Contractor Compliance with NPG 2810	Determining whether information technology contractors awarded for NASA ODIN are in compliance with guidance and direction contained in NPG 2810, “Security of Information Technology.”
Inspections	NASA Scientific and Technical Information (STI) Program	Determining whether the STI program is maintaining an accurate and up-to-date body of STI data and how well the information is being collected and disseminated.
Inspections	NASA E-mail Systems	Determining whether NASA has evaluated the various e-mail software packages to determine the most efficient for Agencywide needs.

4. Procurement

Background Procurement continues to be a significant support process for all of NASA's Enterprises and its overall mission. NASA's procurement obligations accounted for over 87 percent of the Agency's total obligations in FY 1999. NASA procures over \$12.5 billion in goods and services annually. In January 1999, the General Accounting Office (GAO) identified NASA contract management as a major management challenge and program risk. The GAO stated, in part, that NASA lacks adequate systems and processes to oversee procurement activities and to produce accurate and reliable management information in a timely manner. NASA's procurement workload, combined with the significant reductions in procurement personnel, continues to challenge the remaining staff's ability to adequately administer contracts and implement new procurement initiatives.

As NASA places more reliance on contractors to administer programs, we continue to find problems in a variety of areas, such as leasing, noncompetitive procurements, subcontract management, and use of contractors for on-site support. NASA also faces risks as the Agency moves toward the greater use of electronic commerce. During FY 1999, NASA made over 396,000 credit card purchase transactions, totaling over \$87 million. In addition, NASA's outsourcing activities, particularly IT functions, creates other concerns. While strategic processes and core oversight activities must remain in-house, activities that can be outsourced include: expert IT advice, specific applications, education, maintenance, aspects of software/physical security and disaster recovery. The advantages of outsourcing include potentially lower costs and faster access to new technology. However, outsourcing brings with it considerable risks unless the Agency establishes strong internal oversight controls.

Future Challenges Keys to effective procurement at NASA include:

- Ensuring proper levels of staffing to perform contracting requirements.
- Providing sufficient controls over and monitoring of both prime and subcontractors.
- Implementing or increasing the use of innovative procurement procedures such as earned value management and performance incentive fees.
- Ensuring costs billed to NASA cost-type contracts, due to the changing industry environment, are reasonable and allowable.

Table 4, which follows, describes our carryover and planned work for FY 2001 related to this challenge.

Table 4 – Procurement Carryover and Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Consolidated Space Operations Contract (CSOC) (Carryover) (A0000401)	Determining whether the CSOC contract meets the strategic needs of NASA Enterprises by reducing operations costs, consolidating and integrating operations across NASA, and increasing standardization and interoperability.
Audits	Review of Contractor Held Property Oversight (Carryover) (A0000701)	Determining whether NASA and its delegated agencies appropriately manage Government property held by contractors.
Audits	Contractors Use of Professional and Consultant Services (Carryover) (A0002100)	Determining whether NASA has adequate controls over contractors' use of professional and consultant services.
Audits	Survey of NASA's Faster, Better, Cheaper Initiative (Carryover) (A0002400)	Evaluating the implementation of faster, better, cheaper policies for acquisition management at NASA.
Audits	Audit of Boeing Company (Boeing) Advance Agreement with the Defense Contract Management Agency (DCMA) (Carryover) (A0003900)	Determining the reasonableness of the projected cost savings to NASA resulting from an advance agreement between the Boeing and the DCMA under which Boeing plans to discontinue operations at its Downey, California, facility.
Audits	NASA Administration of Grants and Agreements (Carryover) (A0004200)	Evaluating whether NASA appropriately uses grants and cooperative agreements and properly monitors grant and cooperative agreement requirements.
Audits	Audit of Multiple Award Task-Order Contracts (Carryover) (A0005700)	Evaluating NASA's management of multiple award task-order contracts to ensure consistency with statutory requirements and the adequacy of controls.
Audits	Procurement Workforce Planning (Carryover) (A0005800)	Determining whether the NASA Office of Procurement is adequately planning for its procurement workforce needs.
Audits	Effectiveness of NASA's Proposal Evaluation Process	Determining whether NASA procurement officers effectively evaluate proposals on cost-type contracts.

(Continued)

Table 4 – Procurement Carryover and Planned Work (continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	NASA Use of Electronic Commerce	Determining the effectiveness with which NASA is implementing Just-In-Time acquisition systems and other electronic commerce initiatives.
Audits	NASA Contract Close-out Process	Evaluating NASA's efforts to timely closeout inactive contracts to reduce unliquidated obligations.
Audits	NASA Contractor Purchasing Systems	Evaluating the adequacy of NASA oversight of select prime contractors' management of subcontracts.
Audits	NASA Support Service Contracts	Determining whether NASA is maintaining adequate oversight over its support service contractors.
Audits	Contractor Quality Systems	Determining whether DCMA is effectively performing delegated quality assurance activities on major NASA contracts.
Audits	Evaluation of NASA's Profit and Fee Initiative	Evaluating NASA's progress in implementing the profit and fee initiative.
Audits	NASA Contract Audit Follow-up Systems	Determining whether policies and procedures for resolving audit findings comply with Office of Management and Budget (OMB) Circular A-50, "Audit Followup," and whether follow-up activities ensure the prompt and effective resolution of audit recommendations.
Audits	Competition in United Space Alliance Subcontracting	Determining whether USA subcontract management results in adequate competition in subcontracting and arms-length transactions with subcontractors.
Inspections	Use of Support Service Contractors at the John H. Glenn Research Center (Carryover) (G-99-017)	Determining whether the use of support service contractors is appropriate and cost-effective, and in accordance with laws and regulations.
Inspections	Agencywide Use of Support Service Contractors (Carryover) (G-00-016)	Determining whether the use of support service contractors is appropriate and cost-effective, and in accordance with law and regulation.

(Continued)

Table 4 – Procurement Carryover and Planned Work (continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Inspections	Inspection of NASA Exchange Activities (Carryover) Glenn Research Center (G-99-016) Langley Research Center (G-00-001) Ames Research Center (G-00-003) Goddard Space Flight Center (Goddard) (G-00-005) Headquarters (G-00-006)	Determining whether Exchanges are being managed in accordance with applicable regulations and guidelines.
Inspections	Utilization of Quality Assurance Surveillance Plans (QASP) in Performance-Based Service Contracts	Determining whether Contracting Officers and Technical Representatives are establishing adequate QASP's, and Designated Quality Assurance Evaluators are performing surveillance in accordance with established QASP's.
Inspections	NASA Policy Guidance (NPG) 7120.5, "Approvals and Requirements for the Release of Solicitations"	Determining whether the integrity of the certifications being issued by the project or program offices are of a sufficiently high standard, the Certifying Official is technically competent to make the certification, and process improvements are identified.
Inspections	Utilization of the Electronic Past Performance Database during Source Selection	Determining whether the procedures for recording and maintaining contractor past performance information are adhered to in accordance with FAR 42.1503, Contracting Officers and Technical Specialists have the necessary access to contractor past performance information, and data collected is being used in the source selection process.
Inspections	Small Business Technology Transfer (STTR) Pilot Program	Determining the success of the STTR and the rate of contractors defaulting on their STTR contracts.

(Continued)

Table 4 – Procurement Carryover and Planned Work (continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Investigations	NASA Leases (Proactive Investigations)	Identifying improperly executed lease arrangements that caused or could cause NASA to incur unnecessary costs.
Investigations	Grants and Research Contracts (Proactive Investigations)	Identifying potentially fraudulent claims for work not performed.
Investigations	Contract and Subcontract Irregularities (Proactive Investigations)	Identifying irregularities that may be indicators of criminal activity in the area of cost mischarging, kickbacks, and bid-rigging.
Investigations	Non-Conforming and Substandard Parts and Materials (Proactive Investigations)	Determining the relationship between instances of parts failure or product defects and improper testing or non-testing by contractors, or providing parts that do not comply with contract specifications.
Investigations	Health Care Fraud (Proactive Investigations)	Identifying and developing fraud related issues in the health care arena.

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5. Fiscal Management

Background Improving financial management has become a significant issue throughout the Federal Government. The Chief Financial Officer Act of 1990 established the legal framework for improved Federal financial management. This Act requires agencies to prepare financial statements and the agency's OIG (or an independent public accounting (IPA) firm selected by the OIG) to audit these statements.

NASA's financial management environment comprised of decentralized, non-integrated systems was identified by the Agency as a significant area of concern in both its FY 1998 FMFIA Report and FY 1999 Accountability Report. The Agency has experienced difficulty in implementing the Integrated Financial Management Project (IFMP), a NASA-wide, fully integrated, transaction-driven financial management system intended to provide full-cost accounting and other budget information. The prime contractor for IFMP did not deliver the promised system and NASA issued a stop work order on March 10, 2000. As a result, NASA was forced to re-evaluate its entire scope and procedure for developing and implementing IFMP, and final implementation of IFMP has slipped indefinitely.

In our opinion, the continued delays in implementing the IFMP system will result in continued reliance on outdated systems that do not efficiently provide the financial and management information that the Agency needs. Also, NASA will not be able to implement full cost management as planned. The objective of full costing is to establish the true mission costs of programs and activities, thereby enabling NASA managers and other users of financial statement information to make more reliable business decisions in performing critical work with fewer resources. In addition to the challenges posed by IFMP, the Agency faces other obstacles in implementing full cost management, budgeting, and accounting. For example, in September 1999 we reported that the Agency should establish procedures that enable financial management activities to properly match disbursements to obligations in the correct appropriation and program year. In addition, internal controls over the Agency's financial statement preparation requires improvement as evidenced by the recent \$643 million overstatement of budgetary resources available to NASA in FY 1999.

Future Challenges The keys to improved fiscal management include:

- Monitoring contractor performance of financial statement audits to ensure that the statements are properly prepared and thoroughly reviewed.
- Ensuring adequate integration and testing of newly developed automated accounting modules or capability.
- Ensuring that the Agency continues to properly account for and record financial transactions as new capability is implemented.

Table 5, which follows, describes our carryover and planned work for FY 2001 related to this challenge.

Table 5 – Fiscal Management Carryover and Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Controls Over Processing Obligations (Carryover) (A0000900)	Determining whether year-end obligations are valid and properly represent bona fide needs that existed during the period funds were available.
Audits	Review of Carrier Account Operation (Carryover) (A0001000)	Evaluating whether carrier accounts are properly used to accumulate commitments, obligations, costs, and disbursements and distribute funds to benefiting programs.
Audits	Quality Control Review of NASA Goddard Employees Welfare Association Fiscal Year 1998 Financial Statements (Carryover) (A0005000)	Ensuring certified public accountants' (CPA) audit work and reports comply with generally accepted Government auditing standards and generally accepted professional auditing standards.
Audits	Quality Control Review of NASA's Fiscal Year 2000 Financial Statement Audit (Carryover) (A0005200)	Determining whether Arthur Andersen, the IPA firm, conducted its audit in accordance with government auditing standards and provisions of OMB Bulletin 98-08, "Audit Requirements for Federal Financial Statements."
Audits	Quality Control Review of NASA Headquarters Exchange Fiscal Year 1998 and 1999 Financial Statements (Carryover) (A0005900)	Ensuring the CPAs' audit work and reports comply with generally accepted Government auditing standards and generally accepted professional auditing standards.
Audits	NASA's Process for Establishing GPRA Performance Goals and Metrics	Determining whether NASA has effective policies and procedures for developing the individual performance goals and measures included in its Strategic and Annual Performance Plans.

(Continued)

Table 5 – Fiscal Management Carryover and Planned Work (continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Reimbursable Pricing and Billing	Evaluating reimbursable agreements to determine whether reimbursement amounts are accurately computed and appropriately billed and collected.
Audits	Deferred Maintenance	Determining whether NASA has accurately determined its deferred maintenance needs for property, plant, and equipment.
Audits	NASA's Unfunded Termination Liability	Determining whether NASA has adequately planned for potential contract terminations and set aside adequate funding reserves to cover associated costs in accordance with appropriations law.
Audits	Contract Payments Electronic Funds Transfer and Controls	Evaluating the internal controls associated with electronic fund transfer payments to contractors and to review compliance with existing rules and regulations.
Audits	A-133 Quality Control Reviews of Audits Performed for Non-Profit Institutions and State and Local Governments	Ensuring that CPAs' audit work and reports meet the applicable auditing and reporting guidance contained in OMB Circular A-133, generally accepted government auditing standards and generally accepted professional auditing standards. These audits ensure the proper accounting of the funds NASA awards to these institutions.
Audits	Quality Control Review of NASA's FY 2001 Financial Statement Audit	Determining whether the CPA firm selected to conduct the audit of the NASA financial statements performed its work in accordance with Government auditing standards and provisions of OMB Bulletin 98-08.
Audits	Quality Control Reviews of Audits Performed for NASA Exchanges	Ensuring that CPAs' audit work and reports comply with generally accepted government auditing standards and generally accepted professional auditing standards. These audits ensure proper accounting of NASA Exchange funds.

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6. Program and Project Management

Background In April 1998, NPG 7120.5A, “NASA Program and Project Management Processes and Requirements,” established a new management system for implementing Program and Project Management within NASA. The system governs the evaluation of all Agency programs and projects developed to “Provide Aerospace Products and Capabilities.” The system’s intent is to support the accomplishment of programs and projects (consistent with the Agency’s strategic plan) on schedule and within budget while meeting the needs of stakeholders and customers. This system can also be used for other projects such as non-flight infrastructure, construction of facilities, small business innovative research, and analysis projects. Tailoring this system should provide a mechanism to encourage and achieve “faster, better, cheaper” products while meeting customer expectations. During the past 24 months we have evaluated the causes of various program and project management issues on NASA contracts managed under the new NASA Management Instruction. During the initial months of FY 2000, the Agency was in the process of its first revision of the NPG when two of the Mars missions failed within 4 months of each other. This resulted in NASA’s decision to revisit the faster, better, cheaper process and to assess the effectiveness of NPG 7120.5. An Independent Assessment Team was set up to review the Mars failures as well as other reports to accomplish this. The Team’s report is scheduled for release on October 13, 2000. Over the next 3 to 5 years, we will continue to focus on the effectiveness and efficiencies of the revised NPG. We will evaluate if the new management system improves cost and schedule performance for the Agency’s major programs/acquisitions. In addition, we will recommend process improvements and assess its applicability to improving the operations of Agency functions.

Future Challenges Keys to effectively managing NASA programs and projects include:

- Improving planning to enable the Agency to accomplish its missions in the face of budget and human capital issues.
- Eliminating duplication in programs and improving coordination with other research and development organizations.
- Ensuring that programs and projects accurately assess their progress and successfully achieve their goals.
- Effectively using technology developments to increase Agency productivity.

Table 6, which follows, describes our carryover and planned work for FY 2001 related to this challenge.

Table 6 – Program and Project Management Carryover and Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Independent Reviews of the Space Shuttle and Space Station	Determining whether the waiver of an independent annual review for the Space Shuttle Program and reported waiver of an independent annual review for the Space Station Program are appropriate.
Audits	The Evolving Earth Observing System (EOS) Program	Determining the current status of the EOS program and whether the program is meeting, cost and schedule objectives, and mission requirements
Audits	Risk-Based Acquisition Management	Evaluating the progress toward improving the procurement process through risk-based acquisition management, which is intended to inject the principles and practices of risk management earlier in the acquisition cycle
Audits	Discovery Program	Determining whether the Discovery Program is effectively managed to minimize risks while meeting cost, schedule, and performance objectives and is in compliance with the NASA policy for program management.
Audits	Explorer Program	Evaluating the Explorer Program's Small Explorer-lite (SMEX) Project and determining how the new system architecture and development process is different from the initial SMEX process.
Audits	Space Science Research and Analysis Program Grant Management	Determining whether grants are awarded appropriately and grantee performance is appropriately monitored.
Audits	Aviation System Capacity Program	Determining whether program objectives, milestones, and performance measures are being achieved and aviation system capacity research funds are being effectively utilized.
Audits	Environmental Compatibility	Determining whether NASA is accomplishing its goal of reducing environmental noise and emissions; and the effectiveness of partnering activities with industry, academia, and other Government agencies.
Audits	NASA's Use of Cooperative Agreements on Major Aerospace Projects	Determining whether NASA's criteria for using cooperative agreements with major aerospace companies is appropriate and the level of insight into contractor operations is adequate to protect NASA's interests.

(Continued)

Table 6 – Program and Project Management Carryover and Planned Work
(continuation)

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Free Flight Program	Determining whether NASA air traffic management research is effectively managed and coordinated with airline industry partners, and whether air traffic management research funds are being effectively utilized.
Inspections	NASA Special Aeronautics Program (Carryover) (G-99-019)	Determining whether security guidelines are implemented to protect NASA special aeronautics programs.
Inspections (Joint Project with Audits)	NASA Support of Biotechnology Research 1995-1997 (Carryover) (G-00-007)	Determining whether NASA funding for biotechnology research in Russia was appropriately used for intended purposes.
Inspections	NASA's Use of Metric System (Carryover) (G-00-021)	Determining whether NASA's strategic plan, policies, and guidance relating to use or waiver of the metric system are in compliance with Federal laws and regulations.
Inspections	Disposition of NASA Historical Artifacts and Other Related Property	Determining whether NASA property of historical value is properly accounted for and released to appropriate institutions.
Inspections	Evaluation of Whistleblower Protection Processes at NASA	Determining whether adequate processes are in place to meet Whistleblower Protection Act requirements including required training and notifications.
Inspections	Software Engineering Assessment of the International Space Station	Determining whether ISS program management is using proper software engineering practices in the development and management of ISS flight software and software tools.

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7. Launch Vehicles

Background NASA uses two types of launch vehicles, the Expendable Launch Vehicle (ELV) and the Reusable Launch Vehicle (RLV). The ELV's do not carry people and each vehicle can be used only once. ELV's carry satellites and exploratory mission components into space, such as the Cassini and Mars Surveyor. NASA depends upon commercial sector suppliers for the ELV. The Commercial Space Act generally requires the Federal Government to acquire space transportation services from U.S. commercial providers. Since NASA acquires launch services commercially, the Agency does not maintain the same level of control as compared to in-house operations. Estimating costs and committing to scheduled launches are major challenges in this environment.

In contrast to ELV's, the RLV provides access to space using the same vehicle multiple times. The Space Shuttle is NASA's current operating RLV. However, the Space Shuttle fleet is aging and expensive to operate. The Space Shuttle budget for FY 2001 is nearly \$3.2 billion, approximately 23 percent of the total NASA budget. Although each of the Shuttle Orbiters is taken out of service about once every 3 years for planned major modifications and repairs, the age of the fleet often causes unscheduled repairs. The President's National Space Policy directed that NASA work with the private sector to develop flight demonstrators leading to a decision on a next-generation RLV system by the end of the decade. The Policy also directed NASA to develop new and innovative space technologies and smaller, more capable spacecraft to improve the performance and lower the cost of future space missions. The goal of the current RLV program is a substantial reduction in the cost of sending cargo to low-Earth orbit.

Future Challenges Keys to the development and use of launch vehicles include:

- Assuring the availability of small ELV's to ensure schedule milestones and cost effectiveness of NASA missions.
- Evaluating whether NASA's providing the majority of developmental funds and assigning technology rights to its industry partners in the development of the new RLV's is in the best interest of the Government.
- Ensuring that plans are in place and are effectively implemented to address Shuttle systems obsolescence, technical/safety upgrades, and funding.

Table 7, which follows, describes our carryover and planned work for FY 2001 related to this challenge.

Table 7 – Launch Vehicles Carryover and Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Audit of X-37 Technology Management (Carryover) (A0003400)	Evaluating technology management on the X-37 Project and determining how the technologies addressed will be managed and used by NASA in meeting next-generation RLV requirements.
Audits	Shuttle Launch Rate Support	Determining whether NASA has taken action to address the impact of the projected high launch rate in terms of infrastructure and processing capabilities.
Audits	Space Shuttle Safety Upgrades	Determining whether NASA selected the proposed safety upgrades to the Shuttle within a managed framework that includes both the potential improvement and projected cost when evaluating each alternative.
Audits	Management of Expendable Launch Vehicle Services	Determining the impact of recent legislation and launch vehicle failures on NASA's successful launch rate.
Audits	Second Generation Reusable Launch Vehicle	Determining whether the criteria NASA will use to decide on a second generation RLV in 2005 is adequate and program funding, including the extent of planned industry contribution, is appropriate and realistic.
Audits	Advanced Space Transportation Programs (ASTP)	Determining whether the strategies and procedures for planning and executing ASTP technology investments and assigning priorities to them are adequate.
Audits	Hypersonic Technology Program	Determining whether program goals are reasonable and achievable, funding is appropriate, and program cost and schedule are realistic and properly managed.

8. Technology Development

Background The National Aeronautics and Space Act of 1958 (Space Act) charges NASA with “the improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles.” To achieve this goal, NASA—often in partnership with industry and academia—researches and develops new aeronautics and space technologies. Through cooperative programs (e.g., Small Business Innovative Research, Small Business Technology Transfer), the Agency seeks to transfer technologies to U.S. industry.

The emphasis NASA has placed on technology development has varied over time and differs among the Agency’s Enterprises. For example, NASA’s aeronautics programs have a long tradition of research and technology development in support of the aeronautics industry. However, although NASA’s early space efforts were successful in developing new technologies, NASA’s focus on the Space Shuttle, the Space Station, and large, low-risk science missions during the 1970’s and 1980’s resulted in the development of few new space technologies.

During the 1990’s, NASA increased its space technology development efforts and its use of space technologies developed by the growing commercial space industry and the Department of Defense. In addition, the Agency initiated the New Millennium Program (which flight tests space technology) and reinvigorated the X-vehicles program (which flight tests aerospace technologies).

Recent major changes have drawn our attention to NASA’s technology development activities:

- The NASA Office of the Chief Technologist has been abolished and the Agency’s technology development efforts are now the responsibility of the Office of Aero-Space Technology.
- Consolidation in the aerospace industry has left the United States with only one builder of large commercial aircraft. This raises issues about NASA research and development in support of the commercial aircraft industry.
- NASA’s high-speed aeronautics research program has been canceled.
- The commercial space industry continues to thrive, driving new space technology development in many areas.
- The International Space Station era has begun, opening up an opportunity for increased in-space research and technology development.

Future Challenges Key issues affecting technology development activities include:

- Determining whether appropriate controls are in place on NASA’s cooperative technology development programs (e.g., Small Business Innovative Research, Small Business Technology Transfer Research, cooperative agreements).
- Assessing whether NASA is following the advice of its advisory bodies concerning technology development.
- Assessing whether NASA is making appropriate use of technologies developed outside of the Agency, and whether NASA is duplicating technology research that has been (or would have been) developed outside of the Agency.
- Assessing whether NASA is effectively transferring the technologies it develops to U.S. companies.
- Determining whether NASA’s technology development organization is structured appropriately to ensure effective technology development and whether NASA’s Enterprises are cooperating in research and technology development.
- Assessing whether NASA’s technology demonstration programs are being compromised by added requirements unrelated to technology demonstration.
- Assessing whether NASA is adequately ensuring that the technologies it develops are not misappropriated, trade secrets being protected, and is technology development information appropriately secured.
- Determining whether NASA technology demonstrations are unfairly distorting the marketplace by favoring one company’s approach to the detriment of other companies.

Table 8, which follows, describes our planned work for FY 2001 related to this challenge.

Table 8 –Technology Development Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	Effectiveness of the New Millennium Program	Determining whether the New Millennium Program is effectively managed to achieve the desired results of validating new technologies for flight programs while gathering scientific data.
Audits	NASA Intellectual Property	Assessing NASA and contractor compliance with new-technology reporting requirements, and the adequacy of the patent and royalty process for licensing new technology.
Audits	Regional Technology Transfer Centers	Determining whether the purpose and mission of the NASA Commercial Technology Network is being accomplished in an efficient and effective manner.

9. International Agreements

Background One of the goals of the National Space Policy is to promote international cooperative activities that are in the national interest. The Space Act gives NASA statutory authority to enter into binding agreements with foreign entities. Since its inception, NASA has entered into approximately 3,500 international agreements. These agreements span every NASA Enterprise and involve numerous programs and projects—the most notable being the ISS Program. NASA’s international agreements also provide for foreign nationals and representatives to have access to NASA facilities and information. NASA’s Office of External Relations is responsible for determining the appropriateness and level of that access. Inherent in a decision to grant foreign personnel access is the risk of sabotage or disclosure of information of military or economic importance.

NASA’s management of export-controlled technologies is an area of concern. NASA needs a process to identify and classify export control so NASA employees are aware of the technologies they need to protect. The Federal Bureau of Investigation notified NASA that Agency programs are a high-priority target for foreign intelligence services. Past and current work revealed a need for NASA to strengthen its internal controls sufficiently to detect both internal theft and inadvertent loss of NASA technology and research.

Future Challenges Key considerations with the use of international agreements are:

- Program and project vulnerability to schedule delays and cost overruns that require diplomatic rather than contractual solutions.
- Security controls on technology that impacts national security.
- Controls to assure the quality and timeliness of the goods and services provided.
- Mechanisms to assure a balance between program needs and national considerations.
- Plans with specific critical paths and planned alternative courses of action to maintain program/project continuity.
- Proper controls over access to NASA facilities by foreign national visitors.

Table 9, which follows, describes our planned work for FY 2001 related to this challenge.

Table 9 – International Agreements Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	NASA's Compliance with Export Laws and Regulations	Determining whether NASA is exporting controlled technology in accordance with U.S. Export Laws and Regulations, and established NASA export guidance.
Audits	Deemed Exports of NASA Information and Technology	Determining whether NASA has appropriate policies and procedures in place to ensure that technology and information is not inadvertently exported to foreign nationals. Any release to a foreign national of technology or software that is subject to the Export Administration Regulations is "deemed to be an export" to the home country of that foreign national and is commonly referred to as "deemed exports."

10. Environmental Management

Background Years of operations and research activities have left NASA with major environmental cleanup issues. NASA has recognized the existence of several significant environmental issues in previous annual FMFIA Reports, including identifying responsible parties and negotiating cleanup cost sharing agreements. In addition, the Agency's FY 1999 Accountability Report includes a new significant area of concern—funding for the decommissioning of the Plum Brook nuclear reactor in Ohio. The total estimated cost for decommissioning the reactor is \$157 million.

Management has been slow in complying with NASA policies established for identifying principal responsible parties and negotiating cost sharing and cost recovery agreements. In reports issued in FY's 1997 and 1998, we recommended that NASA negotiate cost sharing and cost recovery agreements for JPL and the Santa Susana Field Laboratory (Santa Susana) in California. While negotiations have begun for JPL, they have progressed slowly. Negotiations have not begun for Santa Susana. To minimize its cleanup costs, NASA should pursue identifying principal responsible parties and negotiating cost sharing and/or cost recovery agreements. NASA is paying millions of dollars to clean up its facilities that were often contaminated by other Government agencies and/or contractors. These agencies and contractors should be responsible for their fair share of the cleanup costs. We believe that environmental cost sharing remains a significant area of concern under Environmental Management.

In March 2000, we reported that certain mission-related programs and projects did not consider environmental impacts as required by the National Environmental Policy Act (NEPA) and NASA guidance. We also found NASA's environmental planning, oversight, guidance, and training related to NEPA compliance to be inadequate. We recommended that NASA management should report NEPA noncompliance for mission-related programs and projects as a potential material control weakness, and improve controls over environmental management for NASA's mission-related activities.

Future Challenges Keys to effective management of environmental issues include:

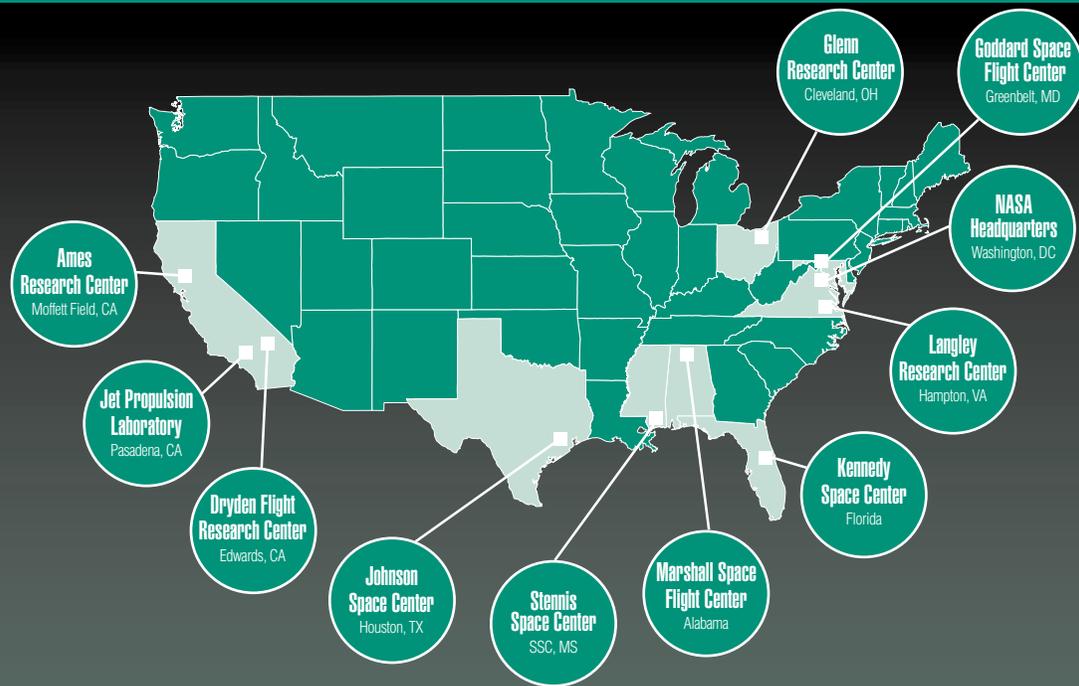
- Prioritizing and addressing environmental obligations.
- Developing consistent procedures under an Agencywide policy.
- Negotiating cost-sharing agreements for environmental cleanup with previous Government and private sector tenants that are also responsible parties.

Table 10, which follows, describes our planned work for FY 2001 related to this challenge.

Table 10 – Environmental Management Planned Work

<i>Program Area</i>	<i>Project</i>	<i>Focus</i>
Audits	NASA's Implementation of Pollution Prevention	Determining whether NASA is implementing pollution prevention to the fullest extent and to what extent any hazardous substances used at NASA can be and are being replaced.
Audits	Management of Resource Conservation and Recovery Act Cleanup Activities	Determining whether progress is being made with respect to cleanup efforts at the NASA Resource Conservation and Recovery Act sites, and whether cleanup efforts are being conducted economically, efficiently, and in compliance with requirements.
Audits	NASA Management of Waste Reduction Activities	Determining whether NASA is in compliance with the waste reduction initiatives in Executive Order 13010 and has assessed opportunities to consolidate waste reduction activities with other co-located Federal facilities.
Investigations	Environmental Issues (Proactive Investigations)	Identifying selected contractors and facilities associated with NASA that are not in compliance with environmental laws and regulations.

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