

**THE WHITE HOUSE****WASHINGTON**

December 21, 2004

NATIONAL SECURITY PRESIDENTIAL DIRECTIVE/NSPD-40

MEMORANDUM FOR THE VICE PRESIDENT

THE SECRETARY OF STATE

THE SECRETARY OF THE TREASURY

THE SECRETARY OF DEFENSE

THE ATTORNEY GENERAL

THE SECRETARY OF COMMERCE

THE SECRETARY OF TRANSPORTATION

THE SECRETARY OF ENERGY

THE SECRETARY OF HOMELAND SECURITY

CHIEF OF STAFF TO THE PRESIDENT

DIRECTOR, OFFICE OF MANAGEMENT AND BUDGET

ASSISTANT TO THE PRESIDENT FOR NATIONAL SECURITY  
AFFAIRS

ASSISTANT TO THE PRESIDENT FOR ECONOMIC POLICY

ASSISTANT TO THE PRESIDENT FOR DOMESTIC POLICY

ASSISTANT TO THE PRESIDENT FOR HOMELAND SECURITY

DIRECTOR, OFFICE OF SCIENCE AND TECHNOLOGY POLICY

UNITED STATES TRADE REPRESENTATIVE

DIRECTOR OF CENTRAL INTELLIGENCE

CHAIRMAN OF THE JOINT CHIEFS OF STAFF

ADMINISTRATOR, NATIONAL AERONAUTICS AND SPACE  
ADMINISTRATION

DIRECTOR, NATIONAL SCIENCE FOUNDATION

SUBJECT: U.S. Space Transportation Policy

This directive establishes national policy, guidelines, and implementation actions for United States space transportation programs and activities to ensure the Nation's ability to maintain access to and use space for U.S. national and homeland security, and civil, scientific, and commercial purposes. This directive supersedes Presidential Decision Directive/National Science and Technology Council-4, National Space Transportation Policy, dated August 5, 1994, in whole, and the following portions of Presidential Decision Directive/National Science and Technology Council-8/National Security Council-49, National Space Policy, dated September 14, 1996, that pertain to space transportation programs and activities: Civil Space Guideline 3b, Defense Space Sector Guideline c, Commercial Space Guideline 5, and Intersector Guideline 2.

## Background

For over four decades, U.S. space transportation capabilities have helped the Nation secure peace and protect national security, enabled the Nation to lead the exploration of our solar system and beyond, and increased economic prosperity and our knowledge of the Earth and its environment. Today, vital national security, homeland security, and economic interests are increasingly dependent on United States Government and commercial space assets. U.S. space transportation capabilities -- encompassing access to, transport through, and return from space -- are the critical foundation upon which U.S. access to and use of space depends.

In accordance with my direction in National Security Presidential Directive-31, U.S. Space Exploration Policy, dated January 14, 2004, the United States is embarking on a robust space exploration program to advance U.S. scientific, security, and economic interests. A central component of this program is to extend human presence across the solar system, starting with a human return to the Moon by the year 2020, in preparation for human exploration of Mars and other destinations. The Space Shuttle will be returned to flight as soon as practical, based on the recommendations of the Columbia Accident Investigation Board; used to complete assembly of the International Space Station, planned for the end of this decade; and then retired. A new crew exploration vehicle will be developed to provide crew transportation for missions beyond low Earth orbit.

Access to space through U.S. space transportation capabilities is essential to: (1) place critical United States Government assets and capabilities into space; (2) augment space-based capabilities in a timely manner in the event of increased operational needs or minimize disruptions due to on-orbit satellite failures, launch failures, or deliberate actions against U.S. space assets; and (3) support government and commercial human space flight. The United States, therefore, must maintain robust, responsive, and resilient U.S. space transportation capabilities to assure access to space. In doing so, the United States will emphasize safety in flight and on the ground.

Assuring access to space requires maintaining a viable space transportation industrial and technology base. A significant downturn in the market for commercial launch services has undermined for the time being the ability of industry to recoup its significant investment in current launch systems and effectively precludes industry from sustaining a robust

industrial and technology base sufficient to meet all United States Government needs. To assure access to space for United States Government payloads, therefore, the United States Government must provide sufficient and stable funding for acquisition of U.S. space transportation capabilities in order to create a climate in which a robust space transportation industrial and technology base can flourish.

To exploit space to the fullest extent, however, requires a fundamental transformation in U.S. space transportation capabilities and infrastructure. In that regard, the United States Government must capitalize on the entrepreneurial spirit of the U.S. private sector, which offers new approaches and technology innovation in U.S. space transportation, options for enhancing space exploration activities, and opportunities to open new commercial markets, including public space travel. Further, dramatic improvements in the reliability, responsiveness, and cost of space transportation would have a profound impact on the ability to protect the Nation, explore the solar system, improve lives, and use space for commercial purposes. While there are both technical and budgetary obstacles to achieving such capabilities in the near term, a sustained national commitment to developing the necessary technologies can enable a decision in the future to develop such capabilities.

#### Goal and Objectives

The fundamental goal of this policy is to ensure the capability to access and use space in support of national and homeland security, civil, scientific, and economic interests. To achieve this goal, the United States Government shall:

- 1) Ensure the availability of U.S. space transportation capabilities necessary to provide reliable and affordable space access, including access to, transport through, and return from space;
- 2) Demonstrate an initial capability for operationally responsive access to and use of space -- providing capacity to respond to unexpected loss or degradation of selected capabilities, and/or to provide timely availability of tailored or new capabilities -- to support national security requirements;
- 3) Develop space transportation capabilities to enable human space exploration beyond low Earth orbit, consistent with the

direction contained in National Security Presidential Directive-31, U.S. Space Exploration Policy, dated January 14, 2004;

4) Sustain a focused technology development program for next-generation space transportation capabilities that dramatically improve the reliability, responsiveness, and cost of access to, transport through, and return from space, and enables a decision to acquire these capabilities in the future;

5) Encourage and facilitate the U.S. commercial space transportation industry to enhance the achievement of national security and civil space transportation objectives, benefit the U.S. economy, and increase the industry's international competitiveness; and

6) Sustain and promote a domestic space transportation industrial base, including launch systems, infrastructure, and workforce, necessary to meet ongoing United States Government national security and civil requirements.

Implementation of this directive shall be within the overall policy and resource guidance of the President, the availability of appropriations, and applicable law and regulations.

#### Implementation Guidelines

To achieve the goals of this directive, departments and agencies shall take the following actions:

##### I. Assuring Access to Space

- 1) "Assured access" is a requirement for critical national security, homeland security, and civil missions and is defined as a sufficiently robust, responsive, and resilient capability to allow continued space operations, consistent with risk management and affordability. The Secretary of Defense and the Administrator of the National Aeronautics and Space Administration, as appropriate, are responsible for assuring access to space.
- 2) The Secretary of Defense shall be the launch agent for the national security sector and shall maintain the capability to develop, evolve, operate, and purchase services for those space transportation systems, infrastructure, and support activities necessary to meet national security requirements.

- 3) The Administrator of the National Aeronautics and Space Administration shall be the launch agent for the civil sector and shall maintain the capability to develop, evolve, operate, and purchase services for those space transportation systems, infrastructure, and support activities necessary to meet civil requirements, including the capability to conduct human and robotic space flight for exploration, scientific, and other civil purposes. The National Aeronautics and Space Administration shall engage in development activities only for those requirements that cannot be met by capabilities being used by the national security or commercial sectors.
- 4) For the foreseeable future, the capabilities developed under the Evolved Expendable Launch Vehicle program shall be the foundation for access to space for intermediate and larger payloads for national security, homeland security, and civil purposes to the maximum extent possible consistent with mission, performance, cost, and schedule requirements. New U.S. commercial space transportation capabilities that demonstrate the ability to reliably launch intermediate or larger payloads will be allowed to compete on a level playing field for United States Government missions.
  - a) The Secretary of Defense shall maintain overall management responsibilities for the Evolved Expendable Launch Vehicle program and shall fund the annual fixed costs for both launch services providers unless or until such time as the Secretary of Defense, following coordination with the Director of Central Intelligence and the Administrator of the National Aeronautics and Space Administration, certifies to the President that a capability that reliably provides assured access to space can be maintained without two Evolved Expendable Launch Vehicle providers.
  - b) Not later than 2010, the Secretary of Defense, the Director of Central Intelligence, and the Administrator of the National Aeronautics and Space Administration shall evaluate the long-term requirements, funding, and management responsibilities for the Evolved Expendable Launch Vehicle system(s) and infrastructure. That evaluation shall include recommending a proportionate shift of the existing funding responsibility of the Secretary of Defense to reflect any change to the balance between national security and civil missions employing an Evolved Expendable Launch Vehicle.

- c) Any department or agency seeking to significantly modify or develop new launch systems derived from the Evolved Expendable Launch Vehicles or its major components, including human rating, shall be responsible for any necessary funding arrangements and shall coordinate with the Secretary of Defense and, as appropriate, the Secretaries of Commerce and Transportation and the Administrator of the National Aeronautics and Space Administration.
- 5) Before 2010, the United States shall demonstrate an initial capability for operationally responsive access to and use of space to support national security requirements. In that regard, the Secretary of Defense, in coordination with the Director of Central Intelligence, shall:
- a) Develop the requirements and concept of operations for launch vehicles, infrastructure, and spacecraft to provide operationally responsive access to and use of space to support national security, including the ability to provide critical space capabilities in the event of a failure of launch or on-orbit capabilities; and
  - b) Identify the key modifications to space launch, spacecraft, or ground operations capabilities that will be required to implement an operationally responsive space launch capability.
- 6) The Federal space launch bases and ranges are vital components of the U.S. space transportation infrastructure and are national assets upon which access to space depends for national security, civil, and commercial purposes. The Secretary of Defense and the Administrator of the National Aeronautics and Space Administration shall operate the Federal launch bases and ranges in a manner so as to accommodate users from all sectors; and shall transfer these capabilities to a predominantly space-based range architecture to accommodate, among others, operationally responsive space launch systems and new users.

## II. Space Exploration

- 1) The space transportation capabilities necessary to carry out space exploration will be developed consistent with National Security Presidential Directive-31, U.S. Space Exploration Policy, dated January 14, 2004.

- 2) Consistent with that direction, the Administrator of the National Aeronautics and Space Administration shall develop, in cooperation with the Secretary of Defense as appropriate, options to meet potential exploration-unique requirements for heavy lift beyond the capabilities of the existing Evolved Expendable Launch Vehicles.
  - a) These options will emphasize the potential for using derivatives of the Evolved Expendable Launch Vehicles to meet space exploration requirements. In addition, the Administrator shall evaluate the comparative costs and benefits of a new dedicated heavy-lift launch vehicle or options based on the use of Shuttle-derived systems.
  - b) The Administrator and the Secretary shall jointly submit to me a recommendation regarding the preferred option to meet future heavy-lift requirements. This recommendation will include an assessment of the impact on national security, civil, and commercial launch activities and the space transportation industrial base.

### III. Transformation of Space Transportation Capabilities

- 1) The United States shall sustain a focused technology development program for next-generation space transportation capabilities to transform U.S. access to and use of space. In that regard, the Secretary of Defense and the Administrator of the National Aeronautics and Space Administration, in cooperation with industry as appropriate, shall:
  - a) Within two years of the date of this directive develop the requirements, concept of operations, technology roadmaps, and investment strategy for next-generation space transportation capabilities with the objective of dramatically improving the reliability, responsiveness, and cost of Earth-to-orbit space transportation for deployment of spacecraft and other payloads in Earth orbit, exclusive of human space flight; and
  - b) Pursue research and development of in-space transportation capabilities to enable responsive space transportation capabilities and the transformation of the Nation's ability to navigate in space. These efforts shall include, but not be limited to: automated rendezvous and docking, and the ability to deploy, service, and retrieve payloads or spacecraft in Earth orbit. The Administrator of the National Aeronautics and

Space Administration, in cooperation with the Secretary of Energy and other departments and agencies as appropriate, shall pursue research and development of space nuclear power and advanced propulsion technologies to more quickly, affordably, and safely expand the reach of exploration into the solar system and beyond.

#### IV. Commercial Space Transportation

- 1) The United States Government is committed to encouraging and facilitating a viable U.S. commercial space transportation industry that supports U.S. space transportation goals, benefits the U.S. economy, and is internationally competitive. Toward that end, United States Government departments and agencies shall:
  - a) Purchase commercially available U.S. space transportation products and services to the maximum extent possible, consistent with mission requirements and applicable law;
  - b) Provide a timely and responsive regulatory environment for licensing commercial space launch and reentry activities;
  - c) Maintain, subject to periodic review and the competitiveness of U.S. industry, the liability risk-sharing regime for U.S. commercial space transportation activities set forth in the Commercial Space Launch Act, as amended (49 USC, Subtitle IX, Chapter 701), including provisions for indemnification by the United States Government;
  - d) Refrain from conducting activities with commercial applications that preclude, deter, or compete with U.S. commercial space transportation activities, unless required by national security;
  - e) Involve the U.S. private sector in the design and development of space transportation capabilities to meet United States Government needs;
  - f) Provide stable and predictable access to the Federal space launch bases and ranges, and other government facilities and services, as appropriate, for commercial purposes on a direct-cost basis, as defined in the Commercial Space Launch Act, as amended (49 USC, Subtitle IX, Chapter 701). The United States Government reserves the right to use such facilities and services on a



priority basis to meet national security and critical civil mission requirements;

- g) Encourage private sector and state and local government investment and participation in the development and improvement of space infrastructure, including non-Federal launch and reentry sites; and
  - h) Provide for the private sector retention of technical data rights in acquiring space transportation capabilities, limited only to the extent necessary to meet United States Government needs.
- 2) The Secretary of Transportation shall license and have safety oversight responsibility for commercial launch and reentry operations and for operation of non-Federal launch and reentry sites, as set forth in the Commercial Space Launch Act, as amended (49 USC, Subtitle IX, Chapter 701), and Executive Order 12465. The Secretary of Transportation shall coordinate with the Secretary of Defense, the Administrator of the National Aeronautics and Space Administration, and other United States Government departments and agencies, as appropriate.
- a) The Secretaries of Transportation and Defense shall establish common public safety requirements and other common standards, as appropriate, taking into account launch vehicle type and concept of operation, for launches from Federal and non-Federal launch sites. The Secretaries of Transportation and Defense shall coordinate these requirements with the Administrator of the National Aeronautics and Space Administration and other departments and agencies as appropriate.
- 3) The Secretaries of Commerce and Transportation shall encourage, facilitate, and promote U.S. commercial space transportation activities, including commercial human space flight.

#### V. U.S. Space Transportation Industrial and Technology Base

- 1) A viable domestic industrial and technology base is the foundation of a successful U.S. space transportation capability and is critical to assuring access to space for national security and civil purposes. To assure access to space and ensure national security and civil space transportation needs will continue to be met in the future:

a) United States Government payloads shall be launched on space launch vehicles manufactured in the United States, unless exempted by the Director of the Office of Science and Technology Policy, in consultation with the Assistant to the President for National Security Affairs.

- This policy does not apply to use of foreign launch vehicles on a no-exchange-of-funds basis to support the following: flight of scientific instruments on foreign spacecraft, international scientific programs, or other cooperative government-to-government programs. This policy also does not apply to the use of foreign launch vehicles to launch United States Government secondary scientific payloads for which no U.S. launch service is available.
- The proposed use of a non-U.S.-manufactured launch vehicle will be subject to interagency coordination as early in the program as possible and prior to the sponsoring department's or agency's request for authority to negotiate and conclude an agreement. Interagency coordination will take into account national security and foreign policy concerns, civil and scientific interests, and the performance, availability, and economic and budgetary considerations associated with use of the proposed launch vehicle.

b) The use of foreign components or technologies, and the participation of foreign governments and entities, in current and future U.S. space transportation systems is permitted consistent with U.S. law and regulations, as well as nonproliferation, national security, and foreign policy goals and commitments and U.S. obligations under the Strategic Arms Reduction Treaty, Intermediate Nuclear Forces Treaty, and the Missile Technology Control Regime. Such use or participation will not be permitted where it could result in critical national security or civil space launches being jeopardized by delays or disruptions in receipt of foreign-produced systems, components, technology, or expertise.

## VI. Nonproliferation and Use of Excess Ballistic Missiles

- 1) In order to prevent the proliferation of missile technology and to limit the adverse impact of use of excess ballistic missiles on U.S. space transportation capabilities:

- a) Excess U.S. ballistic missiles shall either be retained for government use or destroyed. United States Government agencies may use such assets to launch payloads into orbit on a case-by-case basis, with the approval of the Secretary of Defense, when the following conditions are met: (1) the payload supports the sponsoring agency's mission; (2) such use is consistent with the obligations of the United States under treaties and other international agreements to which the United States is a party, including the Missile Technology Control Regime guidelines, the Strategic Arms Reduction Treaty, and the Intermediate Nuclear Forces Treaty; and (3) the sponsoring agency certifies that such use results in a cost savings to the United States Government compared to the use of available commercial launch services that would also meet mission requirements, including performance, schedule, and risk, and limits the impact on the U.S. space transportation industry;
- b) The United States Government encourages other nations that possess excess ballistic missiles to limit their use to government purposes only or destroy them. The United States Government will consider on a case-by-case basis requests from U.S. companies to use foreign excess ballistic missiles for space launch purposes. Any such use must be in conformity with arms control agreements, U.S. nonproliferation policies, U.S. technology transfer policies, and the Missile Technology Control Regime guidelines; and
- c) The United States Government shall consider on a case-by-case basis requests to launch foreign space transportation systems in the United States for commercial purposes, including exhibitions and demonstrations. Any such use shall be subject to interagency coordination and must be in conformity with U.S. national security and foreign policy interests, arms control agreements, U.S. nonproliferation policies, U.S. technology transfer policies, the Missile Technology Control Regime guidelines, and launch and re-entry licensing regulations.

#### Implementing Actions

Within 180 days from the date of this directive, the Secretaries of Defense, Commerce, and Transportation, the Director of Central Intelligence, and the Administrator of the National Aeronautics and Space Administration, as appropriate, shall

jointly submit to me a national space transportation strategy that includes requirements, implementation plans, schedules, and resources required for:

- 1) Reliable and affordable space access, including assuring access to space for critical national security and civil missions. The strategy shall address how the Evolved Expendable Launch Vehicle program will be managed through 2009, and efforts to modernize the Federal space launch bases and ranges;
- 2) Demonstration of an initial capability for operationally responsive access to and use of space to support national security requirements;
- 3) Access to, transport through, and return from space for space exploration, including options to meet exploration-unique requirements for heavy lift beyond the capabilities of existing launch vehicles;
- 4) Focused technology development efforts to transform U.S. access to and use of space, including development of next-generation space transportation capabilities for deployment of spacecraft or other payloads in Earth orbit and in-space transportation; and
- 5) Measures to encourage and facilitate the U.S. commercial space transportation industry to enhance the achievement of national security and civil space transportation objectives, benefit the U.S. economy, and increase the industry's international competitiveness. The strategy shall consider the development of markets and plans for commercial human space flight.

A large, stylized handwritten signature in black ink, likely belonging to George W. Bush, positioned below the list of requirements.