

Memorandum of Understanding

Between

**Department of Transportation
Federal Aviation Administration**

and

National Aeronautics and Space Administration

Concerning

Future Space Transportation Systems

I. Background

On October 9, 1998, the Administrators of the Federal Aviation Administration (FAA), Department of Transportation (DOT) and the National Aeronautics and Space Administration (NASA) entered into an Agreement entitled "A Partnership To Achieve Goals in Aviation and Future Space Transportation" for the purpose of developing a "close partnership in the pursuit of complementary goals in aviation and future space transportation." This Agreement provides the basis for second tier Memoranda of Understanding (MOU's), such as this one, which describe collaborative activities expected to benefit both agencies' missions. These MOU's will set out the rationale, objectives, and examples of the types of research activities that would support complementary goals in program areas. Memoranda of Agreement (MOA's) will delineate specific cooperative activities involving resource commitments by both agencies.

This MOU describes the FAA/NASA cooperative activities that will be conducted under the category of future space transportation systems and reusable launch vehicle technology, research and development.

II. Rationale

The National Space Transportation Policy (NSTC-4, August 5, 1994) designates NASA as "lead agency for technology development and demonstration for next generation reusable space transportation systems." NSTC-4 also directs the Department of Transportation (FAA) to "license, facilitate, and promote commercial launch operations as set forth in the Commercial Space Launch Act, as amended, and Executive Order 12465." The Commercial Space Act of 1998, P.L. 105-303, granted regulatory authority to the DOT for commercial reentry activities. Because the FAA will license and regulate commercial launch and reentry activities that may

utilize NASA-developed technologies, interagency cooperation would benefit both the industry and the public.

III. Objective

The objective of this MOU is to promote collaborative use by the FAA and NASA of technical information, research results, and potentially funded activities, which will assist each agency in fulfilling its respective roles and responsibilities. Under this MOU, NASA and the FAA will facilitate the exchange of information and research results to achieve this objective. In particular, they shall exchange information and the results of their respective technical studies in the following areas:

A. Reusable Launch Vehicle (RLV) System Development, Technology, Maintenance, and Operations, which may include:

- technology readiness
- standards
- safety and risk criteria
- ground and flight testing
- maintenance and operations

B. Launch and Reentry Site Infrastructure and Integration into the National Airspace System (NAS), which may include:

- launch and reentry site characteristics and operations
- vehicle trajectories
- impacts of nominal operations or flight anomalies on the NAS
- technology requirements for seamless or near-seamless integration of RLV's into the NAS
- technology readiness
- advanced concepts for RLV infrastructure and operations in the NAS

C. Training and Health Requirements for crew and passengers, which may include the impact of human space flight on passenger health and safety, and definition of preliminary passenger health requirements for human space travel.

D. Environmental Effects of Space Transportation Systems, which may include the actual or potential interactions of the environmental effects of various reusable space transportation systems and launch and reentry sites with environmental impacts such as noise generation and vehicle emissions.

Other specific areas of collaborative work in the area of future space transportation not listed above may also be considered under this MOU. If the parties exchange non-publicly available technical information, they will consult with each other regarding appropriate protection mechanisms.

IV. Authority

A. NASA - This MOU is entered into on behalf of NASA under the authority of 42 U.S.C. §2473(c), Section 203(c) of the National Aeronautics and Space Act of 1958.

B. DOT/FAA - This MOU is entered into on behalf of the FAA under the authority of 49 U.S.C. §§106(l) (6) and (m), 49U.S.C. Subtitle IX, chapter 701, and Executive Order 12465.

V. Scope of Activities and Management

A. The scope of this initiative includes all FAA research, engineering, and development, and regulatory activities related to commercial space transportation and all NASA activities related to space transportation research, development, operations, and technology, including the NASA Advanced Space Transportation Program (ASTP) and related activities within NASA's Research and Technology Base programs.

B. Oversight for this MOU shall be provided through the FAA/NASA Executive Committee, established by the Agreement entitled "A Partnership to Achieve Goals in Aviation and Future Space Transportation," signed by the Administrators of each agency on October 9, 1998. The Associate Administrator for Research and Acquisitions at the FAA and the Associate Administrator for Aero-Space Technology at NASA, or their designees, shall preside over all deliberations.

C. The FAA/NASA Joint Working Group (JWG) for Space Transportation will be responsible for implementing and monitoring this MOU. The Associate Administrator for Commercial Space Transportation at the FAA and the Director of NASA Marshall Space Flight Center (NASA's Lead Center for Space Transportation Development), or their designees, shall preside over all JWG activities. Where interagency agreement cannot be achieved by the JWG or where actions require approval of higher authority than that of the JWG members, joint recommendations by the JWG co-chairpersons (FAA/NASA) will be forwarded to the FAA/NASA Executive Committee or to the appropriate Associate Administrators.

D. MOA's shall be developed by the appropriate FAA and NASA program or project managers for specific research activities. Each MOA will describe the task assignment including objectives, plans, schedules, products, foreseen benefits, and funding over the period of performance. These MOA's shall be approved and signed by the appropriate NASA Center Director(s) and FAA Associate Administrator(s). MOA's shall be required when financial resources are committed to or transferred between the agencies. MOA's shall include Economy Act orders, pursuant to 31 U.S.C. 1535, should one agency order goods or services from the other in fulfillment of a project's objectives.

VI. Products, Milestones and Reports

Detailed objectives, products, schedules, and reports will be developed as part of each individual MOA entered into under the provisions of Section V. D. of this MOU.

VII. Funding

The intent of the FAA and NASA is to share in the funding of any cooperative/joint programs entered into pursuant to this MOU, consistent with the authority of each agency. All activities conducted under or pursuant to this MOU, including MOA's developed under Section V. D., are subject to the availability of appropriated funds and agency discretion, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. §1341. This MOU is not a funding document, and does not represent the obligation or transfer of funds.

VIII. Modification or Termination

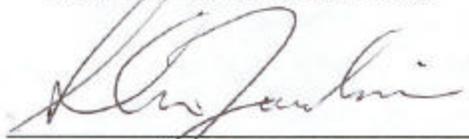
This MOU may be modified at any time upon the mutual written consent of both parties, or may be terminated upon the written request of either party.

IX. Period of Performance

This MOU shall take effect upon the date of the last signature of the approving officials appearing below and shall remain in effect unless terminated upon written request of either party. All subsequent MOA's under this MOU shall incorporate appropriate periods of performance, not to exceed 5 years. A MOA may be renewed for an additional period of performance not to exceed 5 years.

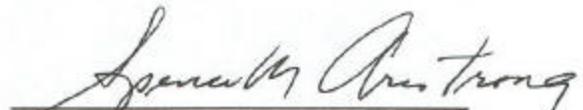
AGREED:

FAA ASSOCIATE ADMINISTRATOR FOR
RESEARCH AND ACQUISITIONS


ASSOCIATE ADMINISTRATOR

Oct 28, 1999
DATE

NASA ASSOCIATE ADMINISTRATOR FOR
AERO-SPACE TECHNOLOGY


ASSOCIATE ADMINISTRATOR

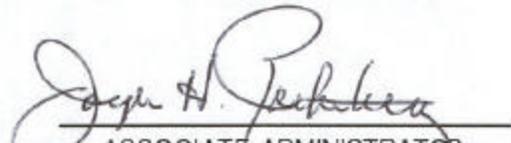
27 Oct 99
DATE

FAA ASSOCIATE ADMINISTRATOR FOR
COMMERCIAL SPACE TRANSPORTATION


ASSOCIATE ADMINISTRATOR

October 28, 1999
DATE

NASA ASSOCIATE ADMINISTRATOR FOR
SPACE FLIGHT


ASSOCIATE ADMINISTRATOR

10-14-99
DATE

Date

NASA Associate Administrator for
Life and Microgravity Sciences
and Applications


Associate Administrator

September 23/99
Date