NASA Policy Directive

NPD 8610.12H
Effective Date: September 23, 2015
Expiration Date: February 12, 2029

COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES

Printable Format (PDF)

Subject: Orbital Space Transportation Services (Revalidated with Change 2)

Responsible Office: Space Operations MD

Change Log

Change #	Date	Description
2	February 12, 2024	Update to align with NPR 1400.1 requirements. Corrected organization name change from HEOMD to SOMD throughout, to include administrative edits.
1	April 26, 2019	Update with 1400 compliance and updated policy statements and corrected authorities.

1. POLICY

a. It is NASA's policy to encourage and facilitate a viable, healthy, and competitive U.S. commercial space transportation industry. This directive addresses the process that enables NASA to plan for and utilize commercial space transportation services using space transportation vehicles manufactured in the U.S. for NASA and NASA-sponsored payloads to the maximum extent practicable.

(1) Alternatively, NASA may use the Space Launch System (SLS) for the following circumstances:

(a) payloads and missions that contribute to extending human presence beyond low-Earth orbit and substantially benefit from the unique capabilities of the SLS, or

(b) other payloads and missions that substantially benefit from the unique capabilities of the SLS, or

(c) on a space available basis, Federal Government or educational payloads that are consistent with NASA's mission for exploration beyond low-Earth orbit, or

(d) compelling circumstances, as determined by the Administrator (and after notification to the Congress), or

(e) foreign payloads implementing NASA agreements for international collaborative efforts relating to science or technology.

(2) NASA may use alternative sources of space transportation services, such as other U.S. Government (USG)-owned space transportation vehicles (e.g., Department of Defense (DoD) excess Intercontinental Ballistic Missile (ICBM)) or foreign space transportation services only after appropriate determinations and/or approvals are obtained per the following:

(a) If, on a case-by-case basis (and subject to any required approvals for use of foreign space transportation services), the Administrator determines that one of the following exceptions applies:

(i) cost-effective space transportation services that meet, or can be modified to meet, specific mission requirements, would not be reasonably available from U.S. commercial providers when required; or

(ii) the use of space transportation services from U.S. commercial providers poses an unacceptable risk of loss of a unique scientific opportunity; or

(iii) after consultation with the Secretary of the Space Force, the use of space transportation services from U.S. commercial providers is inconsistent with national security objectives; or

(iv) the use of space transportation services from U.S. commercial providers is inconsistent with international agreements for international collaborative efforts relating to science and technology; or

(v) it is more cost-effective to transport a payload in conjunction with a test or demonstration of a space transportation vehicle owned by the Federal Government.

(b) The use of foreign space transportation services for the launch of NASA and NASA-sponsored payloads is allowed if an exemption to the National Space Transportation Policy is coordinated through the Assistant to the President and National Security Advisor and the Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy. Consistent with interagency standards and coordination guidelines, such an exemption is not required when NASA or NASA-sponsored payloads use foreign space transportation services to support:

(i) no-exchange-of-funds agreements involving international scientific programs, launches of scientific instruments on foreign spacecraft, or other cooperative government-to-government agreements.

(ii) launches of secondary technology demonstrator or secondary scientific payloads for which no U.S. space transportation service is available.

(iii) hosted payload arrangements on a spacecraft not owned by the U.S.

(iv) the ISS (in context of ISS international partnerships).

b. It is NASA's policy to utilize space transportation services for NASA and NASA-sponsored payloads in concert with the risk posture of each payload (reference NPD 8610.7).

c. It is NASA's policy to maximize the utilization of the lift capability of an available space transportation service to the maximum extent practicable. To this end, NASA may:

(1) Enable co-manifesting/dual manifesting of two or more NASA or NASA-sponsored payloads with concurrence of the primary payload(s)'s sponsoring organization and approval by the FPB, taking into consideration the payloads' risk classification and a strategic best-value assessment of all manifest options. Co-manifesting/dual manifesting of NASA or NASA-sponsored payloads with commercial or other USG payloads will be addressed on a case-by-case basis by the FPB.

(2) Utilize excess capabilities of available space transportation services on NASA missions for the launch of NASA and NASA-sponsored secondary and tertiary payloads and/or associated carriers only when the payloads:

(a) are consistent with NASA requirements for research, development, demonstration, scientific, commercial, or educational programs.

(b) are approved by the FPB.

(c) add minimal or no additional risk above baseline to the primary payload mission, or the primary payload's sponsoring organization concurs with the addition.

(3) Utilize excess capability on available USG-owned space transportation vehicles for the launch of NASA or NASA-sponsored secondary and tertiary payloads and/or associated carriers only when, in addition to the constraints of paragraphs (1) and (2) above, the FPB assesses whether such an action might preclude, discourage, or compete with U.S. commercial space transportation activities.

(4) Allow NASA or NASA-sponsored hosted payloads to utilize a government or commercial host space vehicle (U.S. or foreign) using U.S. or foreign space transportation systems, subject to applicable interagency notification or coordination requirements.

d. It is NASA's policy to provide transportation to the ISS for payloads requiring the unique capabilities of the ISS and in accordance with associated agreements. Such provisions to commercial payloads should not compete with existing or emerging U.S. commercial space transportation services unless such transportation is provided to facilitate the development of commercial space capabilities for a broader industry. Therefore, NASA-provided transportation to the ISS will be transitioned to a commercial space transportation service at an appropriate time that is in the best interest of the broader market.

e. Consistent with the preceding paragraphs, it is NASA's policy to provide space transportation services to other USG entities outside NASA (typically U.S. civil sector agencies) on a reimbursable or cooperative basis. Where applicable, standard pricing formulas or charges should be developed and used for recurring or similar reimbursable activities. For unique or highly differentiated uses, the AA for SOMD may negotiate prices with other USG entities on a case-by-case basis in accordance with standard pricing guidance. NASA's reimbursable pricing guidance is found in NPD 9080.1 and NPR 9090.1.

2. APPLICABILITY

a. This NPD is applicable to NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers. This language applies to the Jet Propulsion Laboratory, a Federally Funded Research and Development Center, other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants or agreements.

b. This NPD is not applicable to suborbital transportation services.

c. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

d. In this NPD, all document citations are assumed to be the latest version unless otherwise noted.

3. AUTHORITY

a. National Aeronautics and Space Administration Authorization Act of 2010, 42 U.S.C. 18321 et seq.

b. National Aeronautics and Space Administration Authorization Act, 51 U.S.C. 20101 et seq.

c. Commercial Space Act of 1998, as amended, 51 U.S.C. 50101 et seq.

d. Commercial Space Launch Competitiveness Act, 51 U.S.C. 70101 et seq.

e. PPD-4, "National Space Policy of the United States of America" dated June 28, 2010, as amended by SPD-1, "Reinvigorating America's Human Space Exploration Program" dated December 11, 2017.

f. PPD-26, "National Space Transportation Policy" dated November 21, 2013.

4. APPLICABLE DOCUMENTS AND FORMS

a. NPD 1360.2, Initiation and Development of International Cooperation in Space and Aeronautics Programs.

b. NPD 8610.7, Launch Services Risk Mitigation Policy for NASA-Owned and/or NASA-Sponsored Payloads/Missions.

c. NPR 8705.4, Risk Classification for NASA Payloads.

d. NPD 9080.1, Review, Approval, and Imposition of User Charges.

e. NPR 9090.1, Reimbursable Agreements.

f. NC 1000.15, FPB Charter. (FPB) Charter.

5. RESPONSIBILITY

a. The AA SOMD is responsible for space transportation services for NASA or NASA-sponsored payloads. In support, the AA SOMD shall:

(1) Plan and request budget approval to safely develop and operate the SLS system and Orion to maintain sustaining technical management and space transportation acquisition capability for the Launch Services Program (LSP), the Commercial Crew Program (CCP), and the ISS Program (ISSP).

(2) Provide/arrange space transportation services for all NASA and NASA sponsored payloads that require orbital launch. These services include:

(a) NASA SOMD-led space transportation service arrangements through LSP, CCP, ISSP, or the Exploration Systems Development Mission Directorate (ESDMD) (for SLS Orion).

(b) Use of DoD-owned space transportation vehicle (e.g., excess ICBM based systems).

(c) Other unique acquisitions of commercial space transportation services.

(3) Exceptions to paragraph (2) above include the following unique acquisitions of space transportation services:

(a) The use of a foreign space transportation service that is part of a scientific collaboration.

(b) The acquisition of on-orbit delivery arrangements procured as part of the satellite contract.

(c) The acquisition of accommodations on a host space vehicle to incorporate a NASA or NASA-sponsored hosted payload.

(d) Space transportation services for class D (NPR 8705.4 Risk Classification for NASA Payloads) non-primary payloads may be arranged by SOMD or the payload-sponsoring organization.

(e) On a case-by-case basis, as approved by the FPB, an organization other than SOMD may provide/arrange space transportation services for a Class D primary payload (e.g., some Small Explorer (SMEX) Announcements of Opportunity (AO).

(4) Chair the FPB in accordance with the FPB Charter (NC 1000.15). This role includes, but is not limited to, the following responsibilities:

(a) Assess proposed requirements to utilize a foreign space transportation service. Provide concurrence, via the FPB, to initiate formal interagency coordination for the use of a foreign space transportation service, whether purchased or on a no-exchange-of-funds collaborative effort. FPB concurrence is not required for the use of foreign space transportation services in support of ISS. For the purchase or use of foreign space transportation services, SOMD will coordinate with the lead office, the Office of International and Interagency Relations (OIIR), on any requisite interagency notification, coordination, or exemption request under the National Space Transportation Policy.

(b) Assess proposed requirements to utilize FAA-licensed, delivery on orbit, or space transportation services acquired via other innovative mechanisms. Provide concurrence via the FPB to initiate any associated service acquisition. For a hosted payload, concurrence is not required, but is brought to the FPB for awareness and inclusion on the FPB manifest.

(c) Assess proposed requirements to utilize a USG-owned space transportation vehicle utilizing the policy and exceptions described in this directive. Provide concurrence via the FPB to forward to the Administrator when the Administrator's determination is required.

(i) In coordination with OIIR and Office of Legislative and Intergovernmental Affairs (OLIA), ensure completion of interagency coordination and congressional notification for the use of a DoD-owned space transportation vehicle that uses excess ICBM assets for the launch of a NASA or NASA-sponsored primary payload.

(ii) In coordination with OLIA, ensure congressional notification for the use of SLS for compelling circumstances.

(d) Assess proposed requirements to co-manifest/dual manifest two or more NASA or NASA-sponsored payloads.

(e) Assess proposed addition of secondary/tertiary payloads to NASA missions.

(5) Provide cost information on SOMD-procured space transportation services for inclusion in the budget of the payload's sponsoring organization.

(6) Negotiate and approve pricing for primary and secondary/co-manifested payloads on SLS consistent with paragraphs 5.a(5) and 1.e.

(7) Include the cost of payload impacts in comparative cost trades, in consultation with the payload-sponsoring organization and when making space transportation services planning decisions.

b. Payload-sponsoring organizations, responsible for NASA or NASA- Sponsored Payloads requiring launch, shall:

(1) Consistent with the law, design and budget payloads/missions to accommodate the space transportation services capabilities of U.S. commercial providers to the maximum extent practicable.

(2) Support the activities of SOMD and the FPB, including timely submittal of proposed space transportation service requirements, in concert with their chosen payload risk classification per NPR 8705.4, including, but not limited to the following:

(a) Submit proposed foreign space transportation service requirements to the FPB prior to the Agency's request for authority to negotiate and conclude an agreement.

(b) Submit proposed space transportation service requirements using FAA-licensed, delivery on orbit or other innovative contractual arranagements to the FPB well in advance of any associated service acquisition. For hosted payloads, communicate planned space transportation arrangements to the FPB for information only for inclusion in the FPB manifest. Provide such communication to the FPB once the arrangements are made; but, no later than, 90 days prior to launch.

(c) Submit proposed space transportation service requirements for the use of a USG-owned space transportation vehicle to the FPB as early as practical. For use of DoD-owned space transportation vehicles, submit prior to initiation of formal interagency coordination, if required, and initiation of any contractual actions.

(3) Provide funds for payload-specific or mission-specific space transportation services.

(4) When making payload-planning decisions, coordinate with SOMD regarding space transportation services (e.g., in comparative cost trades and AOs).

(5) Provide for transportation of payloads to the launch site.

(6) In coordination with OIIR, negotiate any international collaborative agreements that include a no-exchange-of-funds foreign space transportation service for NASA or NASA-sponsored payloads in accordance with NPD 1360.2.

(7) Negotiate any on-orbit delivery arrangements procured as part of the satellite contract.

(8) Negotiate any hosted payload agreements for NASA or NASA-sponsored hosted payloads with host space vehicles. Note: if the hosted payload will or may be launched on a foreign space transportation service, approval by the Administrator is required. OIIR will subsequently provide appropriate notification to the Executive Office of the President.

(9) Obtain the concurrence/signature of the AA SOMD on any proposed international cooperative arrangement that would involve the commitment of SOMD-provided/arranged space transportation services in accordance with NPD 1360.2.

6. DELEGATION OF AUTHORITY

None.

7. MEASUREMENT/VERIFICATION

Compliance with the NPD will be evaluated on a continuing basis by the SOMD and the payload-sponsoring organizations through the FPB meetings, which will consider all the factors that affect the efficient and productive accommodation of payloads on SOMD-provided/arranged space transportation. These include timely and comprehensive exchange of information by both parties concerning: space transportation vehicle capabilities, manifests, schedules, cost of services, payload descriptions and characteristics, payload requirements, and payload schedules.

8. CANCELLATION

NPD 8610.12G, Human Exploration and Operation Mission Directorate (HEOMD) Space Transportation Services for NASA and NASA-Sponsored Payloads, dated February 23, 2005.

Revalidated February 12, 2024, with Change 2, original signed by:

Charlie F. Bolden
Administrator

ATTACHMENT A: DEFINITIONS

Co-manifested or dual payloads. A case where two or more payloads (primary payloads or a mixture of primary and secondary payloads) are assigned to launch from the same launch vehicle. *Specific characteristics*: All spacecraft are accepting of the achievable orbital placement/trajectory and are able to accommodate the coupled loads each causes the other. All primary payload mission parties decide how to enter into and share funding for the space transportation service.

Cost-effective space transportation service. The cost-effectiveness of a space transportation service is determined through a strategic best-value assessment led by SOMD. The assessment can include multiple mission aspects such as: unique mission requirements, technical risk, schedule needs, inter-dependencies between other government agencies and international partners, current and past investments, as well as the cost of the space transportation service(s). In the case that no U.S. commercial space transportation service can reasonably meet the unique requirements of the mission (e.g., a mission requiring SLS unique capabilities), then, by definition, no cost-effective commercial space transportation service is available.

Foreign space transportation services. Space transportation services provided by a foreign entity, government, or commercial company that does not meet the definition of a US commercial provider as defined in 51 U.S.C. 50101.

Hosted payload. A payload comprised of one or more sensors or instruments that is attached and/or integrated into a host space vehicle for the purpose of obtaining one or more ongoing resources from the host for the life of the hosted payload. *Specific characteristics*: A hosted payload's objective is typically independent of its host's objective, but is dependent on the host space vehicle for one or more resources (e.g., volume, mass, power, communications). A hosted payload typically does not drive the launch schedule or orbital placement/trajectory. The host space vehicle provider or owner is the lead for the space transportation service agreement. Terms are negotiated, but the hosted payload typically pays for its own integration onto the host space vehicle and/or the marginal costs of the hosted payload's share of ongoing mission operations (resources used, e.g., power, thermal, data processing, and communications).

Host space vehicle. A spacecraft or other space vehicle (e.g., a spent launch vehicle stage) which is supplying one or more resources (volume, mass, power, communications, etc.) to a hosted payload.

Instrument. A hardware package considered a part of the payload and designed to perform a discrete function and contribute to the overall objective of the payload.

NASA payload. A payload developed by a NASA Mission Directorate or office, either in-house or under contract.

NASA-sponsored payload. A payload provided by a non-NASA entity under formal agreement with a NASA Mission Directorate or office; e.g., international cooperative payloads, NASA space commercialization payloads.

Payload. A specific complement of instruments, sensors, equipment, and support hardware carried into space to accomplish a mission or a discrete activity in outer space. *Specific characteristics*: Personnel are not considered a payload nor a part of a payload.

Payload-sponsoring organization. An office (a Mission Directorate or other office) within NASA Headquarters responsible for a particular NASA or NASA-sponsored payload (including the International Space Station (ISS) and Space Communications Offices within the SOMD).

Primary payload. A payload that justifies its own launch. *Specific characteristics*: A primary payload typically defines the orbital placement/trajectory, flight design, critical path of the mission integration, including launch preparation process, and mission operations.

Secondary payload. A payload that is manifested subordinate to a primary payload and, therefore, is subordinate in launch date and orbit selection. *Specific characteristics*: A single secondary payload does not justify a dedicated launch; however, a launch could be justified for the flight of multiple secondaries. A secondary payload is usually independent of the primary payload, providing its own power and communication system, but is dependent on a primary payload's launch vehicle to achieve orbit/desired trajectory. A secondary payload can be manifested on a mission where excess performance margin allows such an addition. A secondary payload does not drive the launch mission's orbit selection, flight design, or mission integration critical path without agreement from the primary payload. The secondary payload does not cause a launch delay without agreement from the primary payload. The secondary payload should have available an appropriate fidelity mass simulator to meet the schedule needs of the primary payload should the secondary be unable to support the launch date. There can be more than one secondary payload on a launch mission. The primary payload's organization typically pays the majority of, if not the entire, space transportation service costs; however, a secondary payload provider typically pays for its integration costs.

Space transportation services. For the purposes of this policy, the preparation of a space transportation vehicle and its payloads for transportation to, from, or within outer space, and the conduct of transporting a payload to, from, or within outer space. *Specific characteristics*: NASA typically procures commercial space transportation services. Such services are considered to be a commercial item which, by definition, may be customarily used by the general public (re: 51 U.S.C. Section 50132 and FAR 2.101(b)). For this reason USG-owned space transportation vehicles cannot be considered a commercial item.

Space transportation vehicle. For the purposes of this policy, any vehicle or system constructed for the purpose of operating in, or transporting a payload to, from, or within, outer space, and includes any component of such vehicle not specifically designed or adapted for a payload.

Tertiary (or auxiliary) payload. A payload that is lower in priority than a secondary (a third-order payload), e.g., a CubeSat. *Specific characteristics*: A tertiary payload has all the same characteristics as noted above for a secondary.

ATTACHMENT B: ACRONYMS

AA Associate Administrator

AO Announcements of Opportunity

CCP Commercial Crew Program

CFR Code of Federal Regulations

DoD Department of Defense

ESDMD Exploration Systems Development Mission Directorate

FAA Federal Aviation Administration

FAR Federal Acquisition Regulation

FPB Flight Planning Board

ICBM Inter-Continental Ballistic Missile

ISS International Space Station

ISSP International Space Station Program

JPL Jet Propulsion Laboratory, a Federally Funded Research and Development Center

LSP Launch Services Program

NC NASA Charter

NPD NASA Policy Directive

NPR NASA Procedural Requirements

OIIR Office of International and Interagency Relations

OLIA Office of Legislative and Intergovernmental Affairs

PPD Presidential Policy Directive

SLS Space Launch System

SMEX Small Explorer

SOMD Space Operations Mission Directorate

USC United States Code

USG United States Government

ATTACHMENT C: REFERENCES

C.1 48 CFR 1.000 et seq., Federal Acquisition Regulation

(URL for Graphic)

None.

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