

States national and economic security and the United States global competitive posture, and inspiring young people in their educational pursuits;

(4) to build upon the cooperative and mutually beneficial framework established by the ISS partnership agreements and experience in developing and undertaking programs and meeting objectives designed to realize the goal of human space flight set forth in subsection (a); and

(5) to achieve human exploration of Mars and beyond through the prioritization of those technologies and capabilities best suited for such a mission in accordance with the stepping stone approach to exploration under section 70504 of title 51.

(Pub. L. 111-267, title II, §202, Oct. 11, 2010, 124 Stat. 2812; Pub. L. 115-10, title IV, §§411, 412, Mar. 21, 2017, 131 Stat. 33.)

#### AMENDMENTS

2017—Subsec. (a). Pub. L. 115-10, §411, amended subsec. (a) generally. Prior to amendment, text read as follows: “The long term goal of the human space flight and exploration efforts of NASA shall be to expand permanent human presence beyond low-Earth orbit and to do so, where practical, in a manner involving international partners.”

Subsec. (b)(5). Pub. L. 115-10, §412, added par. (5).

### § 18313. Assurance of core capabilities

#### (a) Sense of Congress

It is the sense of Congress that—

(1) the ISS, technology developments, the current Space Shuttle program, and follow-on transportation systems authorized by this chapter form the foundation of initial capabilities for missions beyond low-Earth orbit to a variety of lunar and Lagrangian orbital locations; and

(2) these initial missions and related capabilities should be utilized to provide operational experience, technology development, and the placement and assured use of in-space infrastructure and in-space servicing of existing and future assets.

#### (b) Sense of Congress regarding human space flight capability assurance

It is the sense of Congress that the Administrator shall proceed with the utilization of the ISS, technology development, and follow-on transportation systems (including the Space Launch System, multi-purpose crew vehicle, and commercial crew and cargo transportation capabilities) under subchapters II and III of this chapter in a manner that ensures—

(1) that these capabilities remain inherently complementary and interrelated;

(2) a balance of the development, sustainment, and use of each of these capabilities, which are of critical importance to the viability and sustainability of the U.S. space program; and

(3) that resources required to support the timely and sustainable development of these capabilities authorized in either subchapter II or subchapter III of this chapter are not derived from a reduction in resources for the capabilities authorized in the other subchapter.

#### (c) Limitation

Nothing in subsection (b) shall apply to or affect any capability authorized by any other subchapter of this chapter<sup>1</sup>

(Pub. L. 111-267, title II, §203, Oct. 11, 2010, 124 Stat. 2812; Pub. L. 112-273, §2, Jan. 14, 2013, 126 Stat. 2454; Pub. L. 115-10, title IV, §416(a), Mar. 21, 2017, 131 Stat. 34.)

#### AMENDMENTS

2017—Subsec. (b). Pub. L. 115-10, §416(a)(1), (3), redesignated subsec. (c) as (b) and struck out former subsec. (b). Prior to amendment, text of subsec. (b) read as follows:

“(1) DEVELOPMENT OF FOLLOW-ON SPACE TRANSPORTATION SYSTEMS.—The Administrator shall proceed with the development of follow-on space transportation systems in a manner that ensures that the national capability to restart and fly Space Shuttle missions can be initiated if required by the Congress, in an Act enacted after October 11, 2010, or by a Presidential determination transmitted to the Congress, before the last Space Shuttle mission authorized by this chapter is completed.

“(2) REQUIRED ACTIONS.—In carrying out the requirement in paragraph (1), the Administrator shall authorize refurbishment of the manufactured external tank of the Space Shuttle, designated as ET-94, and take all actions necessary to enable its readiness for use in the Space Launch System development as a critical skills and capability retention effort or for test purposes, while preserving the ability to use this tank if needed for an ISS contingency if deemed necessary under paragraph (1).”

Subsecs. (c), (d). Pub. L. 115-10, §416(a)(2), (3), substituted “subsection (b)” for “subsection (c)” in subsec. (d) and redesignated subsec. (d) as (c). Former subsec. (c) redesignated (b).

2013—Subsecs. (c), (d). Pub. L. 112-273 added subsecs. (c) and (d).

#### REFERENCES IN TEXT

Any other subchapter of this chapter, referred to in subsec. (d), was in the original “any other title of this Act”, meaning any other title of Pub.L. 111-267, Oct. 11, 2010, 124 Stat. 2805. In addition to title II which is classified generally to this subchapter, Pub. L. 111-267 contains titles III to XII which are classified generally to subchapters II to XI, respectively, of this chapter and titles I and XIII, 126 Stat. 2809, 2846, which are not classified to the Code.

### SUBCHAPTER II—EXPANSION OF HUMAN SPACE FLIGHT BEYOND THE INTERNATIONAL SPACE STATION AND LOW-EARTH ORBIT

#### § 18321. Human space flight beyond low-Earth orbit

##### (a) Findings

Congress makes the following findings:

(1) The extension of the human presence from low-Earth orbit to other regions of space beyond low-Earth orbit will enable missions to the surface of the Moon and missions to deep space destinations such as near-Earth asteroids and Mars.

(2) The regions of cis-lunar space are accessible to other national and commercial launch capabilities, and such access raises a host of national security concerns and economic implications that international human space endeavors can help to address.

<sup>1</sup> So in original. Probably should be followed by a period.

(3) The ability to support human missions in regions beyond low-Earth orbit and on the surface of the Moon can also drive developments in emerging areas of space infrastructure and technology.

(4) Developments in space infrastructure and technology can stimulate and enable increased space applications, such as in-space servicing, propellant resupply and transfer, and in situ resource utilization, and open opportunities for additional users of space, whether national, commercial, or international.

(5) A long term objective for human exploration of space should be the eventual international exploration of Mars.

(6) Future international missions beyond low-Earth orbit should be designed to incorporate capability development and availability, affordability, and international contributions.

(7) Human space flight and future exploration beyond low-Earth orbit should be based around a pay-as-you-go approach. Requirements in new launch and crew systems authorized in this chapter should be scaled to the minimum necessary to meet the core national mission capability needed to conduct cis-lunar missions. These initial missions, along with the development of new technologies and in-space capabilities can form the foundation for missions to other destinations. These initial missions also should provide operational experience prior to the further human expansion into space.

**(b) Report on international collaboration**

**(1) Report required**

Not later than 120 days after October 11, 2010, the Administrator shall submit to the appropriate committees of Congress a report on the following assets and capabilities:

(A) Any effort by NASA to expand and ensure effective international collaboration on the ISS.

(B) The efforts of NASA, including its approach and progress, in defining near-term, cis-lunar space human missions.

**(2) NASA contributions**

In preparing the report required by paragraph (1), the Administrator shall assume that NASA will contribute to the efforts described in that paragraph the following:

(A) A Space Launch System.

(B) A multi-purpose crew vehicle.

(C) Such other technology elements the Administrator may consider appropriate, and which the Administrator shall specifically identify in the report.

(Pub. L. 111-267, title III, §301, Oct. 11, 2010, 124 Stat. 2813.)

**§ 18322. Space Launch System as follow-on launch vehicle to the Space Shuttle**

**(a) United States policy**

It is the policy of the United States that NASA develop a Space Launch System as a follow-on to the Space Shuttle that can access cis-lunar space and the regions of space beyond low-Earth orbit in order to enable the United States

to participate in global efforts to access and develop this increasingly strategic region.

**(b) Initiation of development**

**(1) In general**

The Administrator shall, as soon as practicable after October 11, 2010, initiate development of a Space Launch System meeting the minimum capabilities requirements specified in subsection (c).

**(2) Modification of current contracts**

In order to limit NASA's termination liability costs and support critical capabilities, the Administrator shall, to the extent practicable, extend or modify existing vehicle development and associated contracts necessary to meet the requirements in paragraph (1), including contracts for ground testing of solid rocket motors, if necessary, to ensure their availability for development of the Space Launch System.

**(c) Minimum capability requirements**

(1) IN GENERAL.—The Space Launch System developed pursuant to subsection (b) shall be designed to have, at a minimum, the following:

(A) The initial capability of the core elements, without an upper stage, of lifting payloads weighing between 70 tons and 100 tons into low-Earth orbit in preparation for transit for missions beyond low-Earth orbit.

(B) The capability to carry an integrated upper Earth departure stage bringing the total lift capability of the Space Launch System to 130 tons or more.

(C) The capability to lift the multipurpose crew vehicle.

(D) The capability to serve as a backup system for supplying and supporting ISS cargo requirements or crew delivery requirements not otherwise met by available commercial or partner-supplied vehicles.

(2) FLEXIBILITY.—The Space Launch System shall be designed from inception as a fully-integrated vehicle capable of carrying a total payload of 130 tons or more into low-Earth orbit in preparation for transit for missions beyond low-Earth orbit. The Space Launch System shall, to the extent practicable, incorporate capabilities for evolutionary growth to carry heavier payloads. Developmental work and testing of the core elements and the upper stage should proceed in parallel subject to appropriations. Priority should be placed on the core elements with the goal for operational capability for the core elements not later than December 31, 2016.

(3) TRANSITION NEEDS.—The Administrator shall ensure critical skills and capabilities are retained, modified, and developed, as appropriate, in areas related to solid and liquid engines, large diameter fuel tanks, rocket propulsion, and other ground test capabilities for an effective transition to the follow-on Space Launch System.

(4) The capacity for efficient and timely evolution, including the incorporation of new technologies, competition of sub-elements, and commercial operations.