

AMENDMENT NO.

CAL. NO.

[STAFF WORKING DRAFT]

October 6, 2004

Purpose: To amend chapter 701 of title 49, United States Code, with respect to suborbital commercial space flight.

IN THE SENATE OF THE UNITED STATES—108TH Cong., 2D Sess.

H.R. 3752, 108TH Congress, 2D Session

OCTOBER —, 2004

() Referred to the Committee on _____ and ordered to be printed

() Ordered to lie on the table and to be printed

INTENDED to be proposed by Mr. MCCAIN (for himself and Mr. HOLLINGS)

Viz: Strike out all after the enacting clause and insert the following:

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Commercial Space
3 Launch Amendments Act of 2004”.

4 **SEC. 2. AMENDMENTS.**

5 (a) FINDINGS AND PURPOSES.—Section 70101 of
6 title 49, United States Code, is amended—

7 (1) in subsection (a)(3), by inserting “human
8 space flight,” after “microgravity research,”;

1 (2) in subsection (a)(4)—

2 (A) by striking “satellite”; and

3 (B) by striking “services now available
4 from” and inserting “capabilities of”;

5 (3) in subsection (a)(7), by inserting “safety of
6 crew and space flight participants,” after “public
7 health and safety,”;

8 (4) in subsection (a)(8), by striking “and” at
9 the end;

10 (5) in subsection (a)(9), by striking the period
11 and inserting a semicolon;

12 (6) by adding at the end of subsection (a) the
13 following new paragraphs:

14 “(10) the goal of safely opening space to the
15 American people and their private commercial, sci-
16 entific, and cultural enterprises should guide Federal
17 space investments, policies, and regulations;

18 “(11) private industry has begun to develop
19 commercial launch vehicles capable of carrying
20 human beings into space and greater private invest-
21 ment in these efforts will stimulate the Nation’s
22 commercial space transportation industry as a
23 whole;

1 “(12) space transportation is inherently risky,
2 but the industry should be held to the highest stand-
3 ard of safety when transporting humans;

4 “(13) a critical area of responsibility for the Of-
5 fice of the Associate Administrator for Commercial
6 Space Transportation is to regulate the operations
7 and safety of the emerging commercial human space
8 flight industry;

9 “(14) the public interest is served by creating
10 a clear legal, regulatory, and safety regime for com-
11 mercial human space flight; and

12 “(15) the regulatory standards governing
13 human space flight will evolve as the industry ma-
14 tures and public acceptance of the risks and benefits
15 also will evolve as the industry and government com-
16 mit to the highest levels of safety.”; and

17 (7) in subsection (b)(3)—

18 (A) by striking “issue and transfer” and
19 insert “issue permits and commercial licenses
20 and transfer”;

21 (B) by inserting “, consistent with this
22 chapter,” after “authorizing those operations,
23 and”; and

1 (C) by inserting “safety of crew and space
2 flight participants,” after “public health and
3 safety,”.

4 (b) DEFINITIONS.—Section 70102 of title 49, United
5 States Code, is amended—

6 (1) by redesignating paragraphs (2) through
7 (17) as paragraphs (3), (4), (5), (6), (7), (8), (9),
8 (10), (12), (13), (14), (15), (16), (18), (21), and
9 (22), respectively;

10 (2) by inserting after paragraph (1) the fol-
11 lowing new paragraph:

12 “(2) ‘crew’ means any employee of a licensee or
13 transferee, or of a contractor or subcontractor of a
14 licensee or transferee, who performs activities in the
15 course of that employment directly relating to the
16 launch, reentry, or other operation of or in a launch
17 vehicle or reentry vehicle that carries human
18 beings.”;

19 (3) in paragraph (4), as so redesignated by
20 paragraph (1) of this subsection, by inserting “,
21 crew, or space flight participant” after “any pay-
22 load”;

23 (4) in paragraph (6)(A), as so redesignated by
24 paragraph (1) of this subsection, by striking “and

1 payload” and inserting “, payload, crew (including
2 crew training), or space flight participant”;

3 (5) in paragraph (8)(A), as so redesignated by
4 paragraph (1) of this subsection, by inserting “or
5 human beings” after “place a payload”;

6 (6) by inserting after paragraph (10), as so re-
7 designated by paragraph (1) of this subsection, the
8 following new paragraph:

9 “(11) except in section 70104(c), ‘permit’
10 means an experimental permit issued under section
11 70105a.”;

12 (7) in paragraph (13), as so redesignated by
13 paragraph (1) of this subsection, by inserting “crew,
14 or space flight participants,” after “and its pay-
15 load,”;

16 (8) in paragraph (14)(A), as so redesignated by
17 paragraph (1) of this subsection, by striking “and
18 its payload” inserting “and payload, crew (including
19 crew training), or space flight participant”;

20 (9) by inserting after paragraph (16), as so re-
21 designated by paragraph (1) of this subsection, the
22 following new paragraph:

23 “(17) ‘space flight participant’ means an indi-
24 vidual, who is not crew, carried within a launch vehi-
25 cle or reentry vehicle.”;

1 (10) by inserting after paragraph (18), as so
2 redesignated by paragraph (1) of this subsection, the
3 following new paragraphs:

4 “(19) unless and until regulations take effect
5 under section 70120(e)(2), ‘suborbital rocket’ means
6 a vehicle, rocket-propelled in whole or in part, in-
7 tended for flight on a suborbital trajectory, and the
8 thrust of which is greater than its lift for the major-
9 ity of the rocket-powered portion of its ascent.

10 “(20) ‘suborbital trajectory’ means the inten-
11 tional flight path of a launch vehicle, reentry vehicle,
12 or any portion thereof, whose vacuum instantaneous
13 impact point does not leave the surface of the
14 Earth.”; and

15 (11) in paragraph (21), as so redesignated by
16 paragraph (1) of this subsection—

17 (A) by striking “or” at the end of subpara-
18 graph (C);

19 (B) by striking the period at the end of
20 subparagraph (D) and inserting “; or”; and

21 (C) by adding at the end the following new
22 subparagraph:

23 “(E) crew or space flight participants.”.

24 (c) COMMERCIAL HUMAN SPACE FLIGHT.—(1) Sec-
25 tion 70103(a) of title 49, United States Code, is amended

1 by inserting “, through the Associate Administrator for
2 Commercial Space Transportation,” after “Secretary of
3 Transportation”.

4 (2) Section 70103(b)(1) of title 49, United States
5 Code, is amended by inserting “, including those involving
6 space flight participants” after “private sector”.

7 (3) Section 70104(a) of title 49, United States Code,
8 is amended—

9 (A) by striking “LICENSE REQUIREMENT.—A
10 license issued or transferred under this chapter” and
11 inserting “REQUIREMENT.—A license issued or
12 transferred under this chapter, or a permit,”; and

13 (B) by inserting after paragraph (4) the fol-
14 lowing:

15 “Notwithstanding this subsection, a permit shall not au-
16 thorize a person to operate a launch site or reentry site.”.

17 (4) Section 70104(b) of title 49, United States Code,
18 is amended by inserting “or permit” after “holder of a
19 license”.

20 (5) Section 70104 of title 49, United States Code,
21 is amended by adding at the end the following new sub-
22 section:

23 “(d) SINGLE LICENSE OR PERMIT.—The Secretary
24 of Transportation shall ensure that only 1 license or per-
25 mit is required from the Department of Transportation

1 to conduct activities involving crew or space flight partici-
2 pants, including launch and reentry, for which a license
3 or permit is required under this chapter. The Secretary
4 shall ensure that all Department of Transportation regula-
5 tions relevant to the licensed or permitted activity are sat-
6 isfied.”.

7 (6) Section 70105(a) of title 49, United States Code,
8 is amended—

9 (A) in paragraph (1)—

10 (i) by inserting “this chapter and the pro-
11 tection of” after “Consistent with”;

12 (ii) by inserting “safety of crew and space
13 flight participants,” after “public health and
14 safety,”; and

15 (iii) by striking “a license is not issued”
16 and inserting “the Secretary has not taken ac-
17 tion on a license application”; and

18 (B) in paragraph (2), by inserting “(including
19 crews and space flight participants as described in
20 subsection (b))” after “or personnel”.

21 (7) Section 70105(b)(1) of title 49, United States
22 Code, is amended by inserting “or permit” after “for a
23 license”.

24 (8) Section 70105(b)(2)(B) of title 49, United States
25 Code, is amended—

1 (A) by striking “an additional requirement nec-
2 essary to protect” and inserting “any additional re-
3 quirement necessary to protect, consistent with this
4 chapter,”; and

5 (B) by inserting “safety of crew and space
6 flight participants,” after “public health and safe-
7 ty,”.

8 (9) Section 70105(b)(2)(C) of title 49, United States
9 Code, is amended—

10 (A) by inserting “or permit” after “for a li-
11 cense”; and

12 (B) by inserting “safety of crew and space
13 flight participants,” after “public health and safe-
14 ty,”.

15 (10) Section 70105(b)(2)(D) of title 49, United
16 States Code, is amended by inserting “or permit” after
17 “for a license”.

18 (11) Section 70105(b)(3) of title 49, United States
19 Code, is amended—

20 (A) by inserting “safety of crew and space
21 flight participants,” after “public health and safe-
22 ty,”; and

23 (B) by adding at the end the following: “The
24 Secretary may not grant a waiver under this para-
25 graph that would permit the launch or reentry of a

1 launch vehicle or a reentry vehicle without a license
2 or permit if a human being will be on board.”.

3 (12) Section 70105(b) of title 49, United States
4 Code, is amended by adding at the end the following new
5 paragraphs:

6 “(4) The holder of a license or a permit under this
7 chapter may launch or reenter crew only if—

8 “(A) the crew has received training and has
9 satisfied medical or other standards specified in the
10 license or permit in accordance with regulations pro-
11 mulgated by the Secretary; and

12 “(B) the holder of the license or permit and
13 crew have complied with all requirements of the laws
14 of the United States that apply to crew.

15 “(5) The holder of a license or a permit under this
16 chapter may launch or reenter a space flight participant
17 only if—

18 “(A) in accordance with regulations promul-
19 gated by the Secretary, the holder of the license or
20 permit has informed the space flight participant in
21 writing about the risks of the launch and reentry, in-
22 cluding the safety record of the launch or reentry ve-
23 hicle type, and the Secretary has informed the space
24 flight participant in writing of any relevant informa-
25 tion related to risk or probable loss during each

1 phase of flight gathered by the Secretary in making
2 the determination required by section 70112(a)(2)
3 and (c);

4 “(B) in accordance with regulations promul-
5 gated by the Secretary, the space flight participant
6 has provided written informed consent to participate
7 in the launch and reentry and written certification
8 of compliance with any regulations promulgated
9 under paragraph (6)(A); and

10 “(C) the holder of the license or permit has
11 complied with any regulations promulgated by the
12 Secretary pursuant to paragraph (6).

13 “(6)(A) The Secretary may issue regulations requir-
14 ing space flight participants to undergo an appropriate
15 physical examination prior to a launch or reentry under
16 this chapter. This subparagraph shall cease to be in effect
17 three years after the date of enactment of the Commercial
18 Space Launch Amendments Act of 2004.

19 “(B) The Secretary may issue additional regulations
20 setting reasonable requirements for space flight partici-
21 pants, including medical and training requirements. Such
22 regulations shall not be effective before the expiration of
23 3 years after the date of enactment of the Commercial
24 Space Launch Amendments Act of 2004.”.

1 (13) Section 70105(c) of title 49, United States
2 Code, is amended by inserting “or permit” after “of a li-
3 cense”.

4 (14) Chapter 701 of title 49, United States Code, is
5 amended by inserting after section 70105 the following
6 new section:

7 **“§ 70105a. Experimental permits**

8 “(a) A person may apply to the Secretary of Trans-
9 portation for an experimental permit under this section
10 in the form and manner the Secretary prescribes. Con-
11 sistent with this chapter and the protection of the public
12 health and safety, safety of crew and space flight partici-
13 pants, safety of property, and national security and for-
14 eign policy interests of the United States, the Secretary,
15 not later than 120 days after receiving an application pur-
16 suant to this section, shall issue a permit if the Secretary
17 decides in writing that the applicant complies, and will
18 continue to comply, with this chapter and regulations pre-
19 scribed under this chapter. The Secretary shall inform the
20 applicant of any pending issue and action required to re-
21 solve the issue if the Secretary has not made a decision
22 not later than 90 days after receiving an application. The
23 Secretary shall transmit to the Committee on Science of
24 the House of Representatives and Committee on Com-
25 merce, Science, and Transportation of the Senate a writ-

1 ten notice not later than 15 days after any occurrence
2 when the Secretary has failed to act on a permit within
3 the deadline established by this section.

4 “(b) In carrying out subsection (a), the Secretary
5 may establish procedures for safety approvals of launch
6 vehicles, reentry vehicles, safety systems, processes, serv-
7 ices, or personnel (including crews and space flight partici-
8 pants as described in section 70105(b)) that may be used
9 in conducting commercial space launch or reentry activi-
10 ties pursuant to a permit.

11 “(c) In order to encourage the development of a com-
12 mercial space flight industry, the Secretary may when
13 issuing permits use the authority granted under section
14 70105(b)(2)(C).

15 “(d) The Secretary may issue a permit only for reus-
16 able suborbital rockets that will be launched or reentered
17 solely for—

18 “(1) research and development to test new de-
19 sign concepts, new equipment, or new operating
20 techniques;

21 “(2) showing compliance with requirements as
22 part of the process for obtaining a license under this
23 chapter; or

1 “(3) crew training prior to obtaining a license
2 for a launch or reentry using the design of the rock-
3 et for which the permit would be issued.

4 “(e) Permits issued under this section shall—

5 “(1) authorize an unlimited number of launches
6 and reentries for a particular suborbital rocket de-
7 sign for the uses described in subsection (d); and

8 “(2) specify the type of modifications that may
9 be made to the suborbital rocket without changing
10 the design to an extent that would invalidate the
11 permit.

12 “(f) Permits shall not be transferable.

13 “(g) A permit may not be issued for, and a permit
14 that has already been issued shall cease to be valid for,
15 a particular design for a reusable suborbital rocket after
16 a license has been issued for the launch or reentry of a
17 rocket of that design.

18 “(h) No person may operate a reusable suborbital
19 rocket under a permit for carrying any property or human
20 being for compensation or hire.

21 “(i) For the purposes of sections 70106, 70107,
22 70108, 70109, 70110, 70112, 70115, 70116, 70117, and
23 70121 of this chapter—

24 “(1) a permit shall be considered a license;

1 “(2) the holder of a permit shall be considered
2 a licensee;

3 “(3) a vehicle operating under a permit shall be
4 considered to be licensed; and

5 “(4) the issuance of a permit shall be consid-
6 ered licensing.

7 This subsection shall not be construed to allow the trans-
8 fer of a permit.”.

9 (15) Section 70106(a) of title 49, United States
10 Code, is amended—

11 (A) by inserting “at a site used for crew or
12 space flight participant training,” after “assemble a
13 launch vehicle or reentry vehicle,”; and

14 (B) by striking “section 70104(c)” and insert-
15 ing “sections 70104(c), 70105, and 70105a”.

16 (16) Section 70107(c)(2) of title 49, United States
17 Code, is amended by inserting “the safety of crew or space
18 flight participants,” after “public health and safety,”.

19 (17) Section 70108(a) of title 49, United States
20 Code, is amended by striking “detrimental to the public
21 health and safety” and inserting “detrimental to the pub-
22 lic health and safety, safety of crew and space flight par-
23 ticipants”.

1 (18) Section 70110(a)(1) of title 49, United States
2 Code, is amended by inserting “or 70105a” after
3 “70105(a)”.

4 (19) Section 70112(b)(2) of title 49, United States
5 Code, is amended—

6 (A) by inserting “crew, space flight partici-
7 pants,” after “transferee, contractors, subcontractors,”; and

9 (B) by inserting “or by space flight partici-
10 pants,” after “its own employees”.

11 (20) Section 70113(a)(1) of title 49, United States
12 Code, is amended by inserting “but not against a space
13 flight participant,” after “subcontractor of a customer,”.

14 (21) Section 70113(f) of title 49, United States Code,
15 is amended by striking “December 31, 2004.” and insert-
16 ing “December 31, 2009. This section does not apply to
17 permits.”.

18 (22) Section 70115(b)(1)(D)(i) of title 49, United
19 States Code, is amended by inserting “crew or space flight
20 participant training site,” after “site of a launch vehicle
21 or reentry vehicle,”.

22 (23) Section 70120 of title 49, United States Code,
23 is amended by adding at the end the following new sub-
24 sections:

1 “(c) AMENDMENTS.—(1) Not later than 12 months
2 after the date of enactment of the Commercial Space
3 Launch Amendments Act of 2004, the Secretary shall
4 publish proposed regulations to carry out that Act, includ-
5 ing regulations relating to crew, space flight participants,
6 and permits for launch or reentry of reusable suborbital
7 rockets. Not later than 18 months after such date of en-
8 actment, the Secretary shall issue final regulations.

9 “(2)(A) Starting 3 years after the date of enactment
10 of the Commercial Space Launch Amendments Act of
11 2004, the Secretary may issue final regulations changing
12 the definition of suborbital rocket under this chapter. No
13 such regulation may take effect until 180 days after the
14 Secretary has submitted the regulation to the Congress.

15 “(B) The Secretary may issue regulations under this
16 paragraph only if the Secretary has determined that the
17 definition in section 70102 does not describe, or will not
18 continue to describe, all appropriate vehicles and only
19 those vehicles. In making that determination, the Sec-
20 retary shall take into account the evolving nature of the
21 commercial space launch industry.

22 “(d) EFFECTIVE DATE.—(1) Licenses for the launch
23 or reentry of launch vehicles or reentry vehicles with
24 human beings on board and permits may be issued by the

1 Secretary prior to the issuance of the regulations de-
2 scribed in subsection (c).

3 “(2) As soon as practicable after the date of enact-
4 ment of the Commercial Space Launch Amendments Act
5 of 2004, the Secretary shall issue guidelines or advisory
6 circulars to guide the implementation of that Act until
7 regulations are issued.

8 “(3) Notwithstanding paragraphs (1) and (2), no li-
9 censes for the launch or reentry of launch vehicles or re-
10 entry vehicles with human beings on board or permits may
11 be issued starting three years after the date of enactment
12 of the Commercial Space Launch Amendments Act of
13 2004 unless the final regulations described in subsection
14 (c) have been issued.”.

15 (24) The table of sections for chapter 701 of title 49,
16 United States Code, is amended by inserting after the
17 item relating to 70105 the following new item:

“70105a. Experimental permits.”.

18 **SEC. 3. STUDIES.**

19 (a) RISK SHARING.—Not later than 60 days after the
20 date of enactment of this Act, the Secretary of Transpor-
21 tation shall enter into an arrangement with a nonprofit
22 entity for the conduct of an independent comprehensive
23 study of the liability risk sharing regime in the United
24 States for commercial space transportation under section
25 70113 of title 49, United States Code. To ensure that

1 Congress has a full analysis of the liability risk sharing
2 regime, the study shall assess methods by which the cur-
3 rent system could be eliminated, including an estimate of
4 the time required to implement each of the methods as-
5 sessed. The study shall assess whether any alternative
6 steps would be needed to maintain a viable and competi-
7 tive United States space transportation industry if the
8 current regime were eliminated. In conducting the assess-
9 ment under this subsection, input from commercial space
10 transportation insurance experts shall be sought. The
11 study also shall examine liability risk sharing in other na-
12 tions with commercial launch capability and evaluate the
13 direct and indirect impact that ending this regime would
14 have on the competitiveness of the United States commer-
15 cial space launch industry in relation to foreign commer-
16 cial launch providers and on United States assured access
17 to space.

18 (b) SAFETY.—The Secretary of Transportation, in
19 consultation with the Administrator of the National Aero-
20 nautics and Space Administration, shall enter into an ar-
21 rangement with a nonprofit entity for a report analyzing
22 safety issues related to launching human beings into
23 space. In designing the study, the Secretary should take
24 into account any recommendations from the Commercial
25 Space Transportation Advisory Committee and the Na-

1 tional Aeronautics and Space Administration's Aerospace
2 Safety Advisory Panel. The report shall be submitted to
3 the Senate Committee on Commerce, Science, and Trans-
4 portation and the House of Representatives Committee on
5 Science within 4 years of the date of enactment of this
6 Act. The report shall analyze and make recommendations
7 about—

8 (1) the standards of safety and concepts of op-
9 eration that should guide the regulation of human
10 space flight and whether the standard of safety
11 should vary by class or type of vehicle, the purpose
12 of flight, or other considerations;

13 (2) the effectiveness of the commercial licensing
14 and permitting regime under chapter 701 of title 49,
15 United States Code, particularly in ensuring the
16 safety of the public and of crew and space flight par-
17 ticipants during launch, in-space transit, orbit, and
18 reentry, and whether any changes are needed to that
19 chapter;

20 (3) whether there is a need for commercial
21 ground operations for commercial space flight, in-
22 cluding provision of launch support, launch and re-
23 entry control, mission control, range operations, and
24 communications and telemetry operations through

1 all phases of flight, and if such operations developed,
2 whether and how they should be regulated;

3 (4) whether expendable and reusable launch
4 and reentry vehicles should be regulated differently
5 from each other, and whether either of those vehicles
6 should be regulated differently when carrying human
7 beings;

8 (5) whether the Federal Government should
9 separate the promotion of human space flight from
10 the regulation of such activity;

11 (6) how third parties could be used to evaluate
12 the qualification and acceptance of new human space
13 flight vehicles prior to their operation; and

14 (7) how nongovernment experts could partici-
15 pate more fully in setting standards and developing
16 regulations concerning human space flight safety.

17 **SEC. 4. TECHNICAL AMENDMENT.**

18 Section 102(c) of the Commercial Space Act of 1998
19 is repealed.

Amend the title so as to read “A bill to promote the development of the emerging commercial human space flight industry, to extend the liability indemnification regime for the commercial space transportation industry, and for other purposes.”.

○