

108TH CONGRESS
2^D SESSION

H. R. 5382

IN THE SENATE OF THE UNITED STATES

NOVEMBER 20, 2004

Received

AN ACT

To promote the development of the emerging commercial human space flight industry, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

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,”;

9 (2) in subsection (a)(4)—

10 (A) by striking “satellite”; and

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

13 (3) in subsection (a)(8), by striking “and” at
14 the end;

15 (4) in subsection (a)(9), by striking the period
16 and inserting a semicolon;

17 (5) by adding at the end of subsection (a) the
18 following new paragraphs:

19 “(10) the goal of safely opening space to the
20 American people and their private commercial, sci-
21 entific, and cultural enterprises should guide Federal
22 space investments, policies, and regulations;

23 “(11) private industry has begun to develop
24 commercial launch vehicles capable of carrying
25 human beings into space and greater private invest-
26 ment in these efforts will stimulate the Nation’s

1 commercial space transportation industry as a
2 whole;

3 “(12) space transportation is inherently risky,
4 and the future of the commercial human space flight
5 industry will depend on its ability to continually im-
6 prove its safety performance;

7 “(13) a critical area of responsibility for the
8 Department of Transportation is to regulate the op-
9 erations and safety of the emerging commercial
10 human space flight industry;

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

14 “(15) the regulatory standards governing
15 human space flight must evolve as the industry ma-
16 tures so that regulations neither stifle technology de-
17 velopment nor expose crew or space flight partici-
18 pants to avoidable risks as the public comes to ex-
19 pect greater safety for crew and space flight partici-
20 pants from the industry.”;

21 (6) in subsection (b)(2)—

22 (A) by striking “and” at the end of sub-
23 paragraph (A);

24 (B) by inserting “and” after the semicolon
25 in subparagraph (B); and

1 (C) by adding at the end the following new
2 subparagraph:

3 “(C) promoting the continuous improve-
4 ment of the safety of launch vehicles designed
5 to carry humans, including through the
6 issuance of regulations, to the extent permitted
7 by this chapter;”; and

8 (7) in subsection (b)(3), by striking “issue and
9 transfer” and inserting “issue permits and commer-
10 cial licenses and transfer”.

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

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

17 (2) by inserting after paragraph (1) the fol-
18 lowing new paragraph:

19 “(2) ‘crew’ means any employee of a licensee or
20 transferee, or of a contractor or subcontractor of a
21 licensee or transferee, who performs activities in the
22 course of that employment directly relating to the
23 launch, reentry, or other operation of or in a launch
24 vehicle or reentry vehicle that carries human
25 beings.”;

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

5 (4) in paragraph (6)(A), as so redesignated by
6 paragraph (1) of this subsection, by striking “and
7 payload” and inserting “, payload, crew (including
8 crew training), or space flight participant”;

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

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

15 “(11) except in section 70104(c), ‘permit’
16 means an experimental permit issued under section
17 70105a.”;

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

22 (8) in paragraph (14)(A), as so redesignated by
23 paragraph (1) of this subsection, by striking “and
24 its payload” inserting “and payload, crew (including
25 crew training), or space flight participant”;

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

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

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

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

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

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

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

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

3 (C) by adding at the end the following new
4 subparagraph:

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

6 (c) COMMERCIAL HUMAN SPACE FLIGHT.—(1) Sec-
7 tion 70103(b)(1) of title 49, United States Code, is
8 amended by inserting “, including those involving space
9 flight participants” after “private sector”.

10 (2) Section 70103 of title 49, United States Code,
11 is amended by redesignating subsection (c) as subsection
12 (d), and by inserting after subsection (b) the following new
13 subsection:

14 “(c) SAFETY.—In carrying out the responsibilities
15 under subsection (b), the Secretary shall encourage, facili-
16 tate, and promote the continuous improvement of the safe-
17 ty of launch vehicles designed to carry humans, and the
18 Secretary may, consistent with this chapter, promulgate
19 regulations to carry out this subsection.”.

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

22 (A) by striking “License Requirement.—A li-
23 cense issued or transferred under this chapter” and
24 inserting “Requirement.—A license issued or trans-
25 ferred under this chapter, or a permit,”; and

1 (B) by inserting after paragraph (4) the fol-
2 lowing: “Notwithstanding this subsection, a permit
3 shall not authorize a person to operate a launch site
4 or reentry site.”.

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

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

11 “(d) SINGLE LICENSE OR PERMIT.—The Secretary
12 of Transportation shall ensure that only 1 license or per-
13 mit is required from the Department of Transportation
14 to conduct activities involving crew or space flight partici-
15 pants, including launch and reentry, for which a license
16 or permit is required under this chapter. The Secretary
17 shall ensure that all Department of Transportation regula-
18 tions relevant to the licensed or permitted activity are sat-
19 isfied.”.

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

22 (A) in paragraph (1), by striking “a license is
23 not issued” and inserting “the Secretary has not
24 taken action on a license application”; and

1 (B) in paragraph (2), by inserting “(including
2 approval procedures for the purpose of protecting
3 the health and safety of crews and space flight par-
4 ticipants, to the extent permitted by subsections (b)
5 and (c))” after “or personnel”.

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

9 (8) Section 70105(b)(2)(B) of title 49, United States
10 Code, is amended by striking “an additional requirement
11 necessary to protect” and inserting “any additional re-
12 quirement necessary to protect”.

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

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

17 (B) by striking “and” at the end thereof.

18 (10) Section 70105(b)(2) of title 49, United States
19 Code, is amended by redesignating subparagraph (D) as
20 subparagraph (E) and inserting after subparagraph (C)
21 the following new subparagraph:

22 “(D) additional license requirements, for a
23 launch vehicle carrying a human being for com-
24 pensation or hire, necessary to protect the
25 health and safety of crew or space flight partici-

1 pants, only if such requirements are imposed
2 pursuant to final regulations issued in accord-
3 ance with subsection (c); and”.

4 (11) Section 70105(b)(2)(E) of title 49, United
5 States Code, as so redesignated by paragraph (11) of this
6 subsection, is amended by inserting “or permit” after “for
7 a license”.

8 (12) Section 70105(b)(3) of title 49, United States
9 Code, is amended by adding at the end the following: “The
10 Secretary may not grant a waiver under this paragraph
11 that would permit the launch or reentry of a launch vehicle
12 or a reentry vehicle without a license or permit if a human
13 being will be on board.”.

14 (13) Section 70105(b) of title 49, United States
15 Code, is amended by adding at the end the following new
16 paragraphs:

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

19 “(A) the crew has received training and
20 has satisfied medical or other standards speci-
21 fied in the license or permit in accordance with
22 regulations promulgated by the Secretary;

23 “(B) the holder of the license or permit
24 has informed any individual serving as crew in
25 writing, prior to executing any contract or other

1 arrangement to employ that individual (or, in
2 the case of an individual already employed as of
3 the date of enactment of the Commercial Space
4 Launch Amendments Act of 2004, as early as
5 possible, but in any event prior to any launch
6 in which the individual will participate as crew),
7 that the United States Government has not cer-
8 tified the launch vehicle as safe for carrying
9 crew or space flight participants; and

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

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

17 “(A) in accordance with regulations pro-
18 mulgated by the Secretary, the holder of the li-
19 cense or permit has informed the space flight
20 participant in writing about the risks of the
21 launch and reentry, including the safety record
22 of the launch or reentry vehicle type, and the
23 Secretary has informed the space flight partici-
24 pant in writing of any relevant information re-
25 lated to risk or probable loss during each phase

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

4 “(B) the holder of the license or permit
5 has informed any space flight participant in
6 writing, prior to receiving any compensation
7 from that space flight participant or (in the
8 case of a space flight participant not providing
9 compensation) otherwise concluding any agree-
10 ment to fly that space flight participant, that
11 the United States Government has not certified
12 the launch vehicle as safe for carrying crew or
13 space flight participants;

14 “(C) in accordance with regulations pro-
15 mulgated by the Secretary, the space flight par-
16 ticipant has provided written informed consent
17 to participate in the launch and reentry and
18 written certification of compliance with any reg-
19 ulations promulgated under paragraph (6)(A);
20 and

21 “(D) the holder of the license or permit
22 has complied with any regulations promulgated
23 by the Secretary pursuant to paragraph (6).

24 “(6)(A) The Secretary may issue regulations re-
25 quiring space flight participants to undergo an ap-

1 appropriate physical examination prior to a launch or
2 reentry under this chapter. This subparagraph shall
3 cease to be in effect three years after the date of en-
4 actment of the Commercial Space Launch Amend-
5 ments Act of 2004.

6 “(B) The Secretary may issue additional regu-
7 lations setting reasonable requirements for space
8 flight participants, including medical and training
9 requirements. Such regulations shall not be effective
10 before the expiration of 3 years after the date of en-
11 actment of the Commercial Space Launch Amend-
12 ments Act of 2004.”

13 (14) Section 70105 of title 49, United States Code,
14 is amended by redesignating subsection (c) as subsection
15 (d), and by adding after subsection (b) the following new
16 subsection:

17 “(c) SAFETY REGULATIONS.—(1) The Secretary may
18 issue regulations governing the design or operation of a
19 launch vehicle to protect the health and safety of crew and
20 space flight participants.

21 “(2) Regulations issued under this subsection
22 shall—

23 “(A) describe how such regulations would
24 be applied when the Secretary is determining
25 whether to issue a license under this chapter;

1 “(B) apply only to launches in which a ve-
2 hicle will be carrying a human being for com-
3 pensation or hire;

4 “(C) be limited to restricting or prohibiting
5 design features or operating practices that—

6 “(i) have resulted in a serious or fatal
7 injury (as defined in 49 CFR 830, as in ef-
8 fect on November 10, 2004) to crew or
9 space flight participants during a licensed
10 or permitted commercial human space
11 flight; or

12 “(ii) contributed to an unplanned
13 event or series of events during a licensed
14 or permitted commercial human space
15 flight that posed a high risk of causing a
16 serious or fatal injury (as defined in 49
17 CFR 830, as in effect on November 10,
18 2004) to crew or space flight participants;
19 and

20 “(D) be issued with a description of the in-
21 stance or instances when the design feature or
22 operating practice being restricted or prohibited
23 contributed to a result or event described in
24 subparagraph (C).

1 “(3) Beginning 8 years after the date of enact-
2 ment of the Commercial Space Launch Amendments
3 Act of 2004, the Secretary may propose regulations
4 under this subsection without regard to paragraph
5 (2)(C) and (D). Any such regulations shall take into
6 consideration the evolving standards of safety in the
7 commercial space flight industry.

8 “(4) Nothing in this subsection shall be con-
9 strued to limit the authority of the Secretary to
10 issue requirements or regulations to protect the pub-
11 lic health and safety, safety of property, national se-
12 curity interests, and foreign policy interests of the
13 United States.”.

14 (15) Section 70105(d) of title 49, United States
15 Code, as so redesignated by paragraph (15) of this sub-
16 section, is amended by inserting “or permit” after “of a
17 license”.

18 (16) Chapter 701 of title 49, United States Code, is
19 amended by inserting after section 70105 the following
20 new section:

21 **“§ 70105a. Experimental permits**

22 “(a) A person may apply to the Secretary of Trans-
23 portation for an experimental permit under this section
24 in the form and manner the Secretary prescribes. Con-
25 sistent with the protection of the public health and safety,

1 safety of property, and national security and foreign policy
2 interests of the United States, the Secretary, not later
3 than 120 days after receiving an application pursuant to
4 this section, shall issue a permit if the Secretary decides
5 in writing that the applicant complies, and will continue
6 to comply, with this chapter and regulations prescribed
7 under this chapter. The Secretary shall inform the appli-
8 cant of any pending issue and action required to resolve
9 the issue if the Secretary has not made a decision not later
10 than 90 days after receiving an application. The Secretary
11 shall transmit to the Committee on Science of the House
12 of Representatives and Committee on Commerce, Science,
13 and Transportation of the Senate a written notice not
14 later than 15 days after any occurrence when the Sec-
15 retary has failed to act on a permit within the deadline
16 established by this section.

17 “(b) In carrying out subsection (a), the Secretary
18 may establish procedures for safety approvals of launch
19 vehicles, reentry vehicles, safety systems, processes, serv-
20 ices, or personnel that may be used in conducting commer-
21 cial space launch or reentry activities pursuant to a per-
22 mit.

23 “(c) In order to encourage the development of a com-
24 mercial space flight industry, the Secretary may when

1 issuing permits use the authority granted under section
2 70105(b)(2)(C).

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

6 “(1) research and development to test new de-
7 sign concepts, new equipment, or new operating
8 techniques;

9 “(2) showing compliance with requirements as
10 part of the process for obtaining a license under this
11 chapter; or

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

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

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

19 “(2) specify the type of modifications that may
20 be made to the suborbital rocket without changing
21 the design to an extent that would invalidate the
22 permit.

23 “(f) Permits shall not be transferable.

24 “(g) A permit may not be issued for, and a permit
25 that has already been issued shall cease to be valid for,

1 a particular design for a reusable suborbital rocket after
2 a license has been issued for the launch or reentry of a
3 rocket of that design.

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

7 “(i) For the purposes of sections 70106, 70107,
8 70108, 70109, 70110, 70112, 70115, 70116, 70117, and
9 70121 of this chapter—

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

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

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

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

17 This subsection shall not be construed to allow the
18 transfer of a permit.”.

19 (17) Section 70106(a) of title 49, United States
20 Code, is amended—

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

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

1 (18) Section 70107(b) of title 49, United States
2 Code, is amended—

3 (A) by inserting “(1)” before “On the initia-
4 tive”; and

5 (B) by adding the following new paragraph at
6 the end:

7 “(2) The Secretary shall modify a license issued
8 or transferred under this chapter whenever a modi-
9 fication is needed for the license to be in conformity
10 with a regulation that was issued pursuant to sec-
11 tion 70105(c) after the issuance of the license. This
12 paragraph shall not apply to permits.”.

13 (19) Section 70107 of title 49, United States Code,
14 is amended by redesignating subsections (d) and (e) as
15 subsections (e) and (f), respectively, and by inserting after
16 subsection (e) the following new subsection:

17 “(d) **ADDITIONAL SUSPENSIONS.**—(1) The Secretary
18 may suspend a license when a previous launch or reentry
19 under the license has resulted in a serious or fatal injury
20 (as defined in 49 CFR 830, as in effect on November 10,
21 2004) to crew or space flight participants and the Sec-
22 retary has determined that continued operations under the
23 license are likely to cause additional serious or fatal injury
24 (as defined in 49 CFR 830, as in effect on November 10,
25 2004) to crew or space flight participants.

1 “(2) Any suspension imposed under this sub-
2 section shall be for as brief a period as possible and,
3 in any event, shall cease when the Secretary—

4 “(A) has determined that the licensee has
5 taken sufficient steps to reduce the likelihood of
6 a recurrence of the serious or fatal injury; or

7 “(B) has modified the license pursuant to
8 subsection (b) to sufficiently reduce the likeli-
9 hood of a recurrence of the serious or fatal in-
10 jury.

11 “(3) This subsection shall not apply to per-
12 mits.”.

13 (20) Section 70110(a)(1) of title 49, United States
14 Code, is amended by inserting “or 70105a” after
15 “70105(a)”.

16 (21) Section 70112(b)(2) of title 49, United States
17 Code, is amended—

18 (A) by inserting “crew, space flight partici-
19 pants,” after “transferee, contractors, subcontractors,”; and
20 tors,”; and

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

23 (22) Section 70113(a)(1) of title 49, United States
24 Code, is amended by inserting “but not against a space
25 flight participant,” after “subcontractor of a customer,”.

1 (23) Section 70113(f) of title 49, United States Code,
2 is amended by inserting at the end the following: “This
3 section does not apply to permits.”.

4 (24) Section 70115(b)(1)(D)(i) of title 49, United
5 States Code, is amended by inserting “crew or space flight
6 participant training site,” after “site of a launch vehicle
7 or reentry vehicle,”.

8 (25) Section 70120 of title 49, United States Code,
9 is amended by adding at the end the following new sub-
10 sections:

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

19 “(2)(A) Starting 3 years after the date of en-
20 actment of the Commercial Space Launch Amend-
21 ments Act of 2004, the Secretary may issue final
22 regulations changing the definition of suborbital
23 rocket under this chapter. No such regulation may
24 take effect until 180 days after the Secretary has
25 submitted the regulation to the Congress.

1 “(B) The Secretary may issue regulations
2 under this paragraph only if the Secretary has de-
3 termined that the definition in section 70102 does
4 not describe, or will not continue to describe, all ap-
5 propriate vehicles and only those vehicles. In making
6 that determination, the Secretary shall take into ac-
7 count the evolving nature of the commercial space
8 launch industry.

9 “(d) EFFECTIVE DATE.—(1) Licenses for the launch
10 or reentry of launch vehicles or reentry vehicles with
11 human beings on board and permits may be issued by the
12 Secretary prior to the issuance of the regulations de-
13 scribed in subsection (c).

14 “(2) As soon as practicable after the date of en-
15 actment of the Commercial Space Launch Amend-
16 ments Act of 2004, the Secretary shall issue guide-
17 lines or advisory circulars to guide the implementa-
18 tion of that Act until regulations are issued.

19 “(3) Notwithstanding paragraphs (1) and (2),
20 no licenses for the launch or reentry of launch vehi-
21 cles or reentry vehicles with human beings on board
22 or permits may be issued starting three years after
23 the date of enactment of the Commercial Space
24 Launch Amendments Act of 2004 unless the final

1 regulations described in subsection (c) have been
2 issued.”.

3 (26) The table of sections for chapter 701 of title 49,
4 United States Code, is amended by inserting after the
5 item relating to 70105 the following new item:

“70105a. Experimental permits.”.

6 **SEC. 3. STUDIES.**

7 (a) RISK SHARING.—Not later than 60 days after the
8 date of enactment of this Act, the Secretary of Transpor-
9 tation shall enter into an arrangement with a nonprofit
10 entity for the conduct of an independent comprehensive
11 study of the liability risk sharing regime in the United
12 States for commercial space transportation under section
13 70113 of title 49, United States Code. To ensure that
14 Congress has a full analysis of the liability risk sharing
15 regime, the study shall assess methods by which the cur-
16 rent system could be eliminated, including an estimate of
17 the time required to implement each of the methods as-
18 sessed. The study shall assess whether any alternative
19 steps would be needed to maintain a viable and competi-
20 tive United States space transportation industry if the
21 current regime were eliminated. In conducting the assess-
22 ment under this subsection, input from commercial space
23 transportation insurance experts shall be sought. The
24 study also shall examine liability risk sharing in other na-
25 tions with commercial launch capability and evaluate the

1 direct and indirect impact that ending this regime would
2 have on the competitiveness of the United States commer-
3 cial space launch industry in relation to foreign commer-
4 cial launch providers and on United States assured access
5 to space.

6 (b) SAFETY.—The Secretary of Transportation, in
7 consultation with the Administrator of the National Aero-
8 nautics and Space Administration, shall enter into an ar-
9 rangement with a nonprofit entity for a report analyzing
10 safety issues related to launching human beings into
11 space. In designing the study, the Secretary should take
12 into account any recommendations from the Commercial
13 Space Transportation Advisory Committee and the Na-
14 tional Aeronautics and Space Administration’s Aerospace
15 Safety Advisory Panel. The report shall be submitted to
16 the Senate Committee on Commerce, Science, and Trans-
17 portation and the House of Representatives Committee on
18 Science within 4 years of the date of enactment of this
19 Act. The report shall analyze and make recommendations
20 about—

21 (1) the standards of safety and concepts of op-
22 eration that should guide the regulation of human
23 space flight and whether the standard of safety
24 should vary by class or type of vehicle, the purpose
25 of flight, or other considerations;

1 (2) the effectiveness of the commercial licensing
2 and permitting regime under chapter 701 of title 49,
3 United States Code, particularly in ensuring the
4 safety of the public and of crew and space flight par-
5 ticipants during launch, in-space transit, orbit, and
6 reentry, and whether any changes are needed to that
7 chapter;

8 (3) whether there is a need for commercial
9 ground operations for commercial space flight, in-
10 cluding provision of launch support, launch and re-
11 entry control, mission control, range operations, and
12 communications and telemetry operations through
13 all phases of flight, and if such operations developed,
14 whether and how they should be regulated;

15 (4) whether expendable and reusable launch
16 and reentry vehicles should be regulated differently
17 from each other, and whether either of those vehicles
18 should be regulated differently when carrying human
19 beings;

20 (5) whether the Federal Government should
21 separate the promotion of human space flight from
22 the regulation of such activity;

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

1 (7) how nongovernment experts could partici-
2 pate more fully in setting standards and developing
3 regulations concerning human space flight safety;
4 and

5 (8) whether the Federal Government should
6 regulate the extent of foreign ownership or control
7 of human space flight companies operating or incor-
8 porated in the United States.

9 **SEC. 4. TECHNICAL AMENDMENT.**

10 Section 102(c) of the Commercial Space Act of 1998
11 is repealed.

 Passed the House of Representatives November 20,
 2004.

Attest:

JEFF TRANDAHL,

Clerk.