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UNIVERSITY OF MISSISSIPPI SCHOOL OF LAW  
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ARISING OUT OF HUMAN ACTIVITIES IN OUTER SPACE.

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# FOREWORD

## U.S. CODE TITLE 51: NATIONAL AND COMMERCIAL SPACE PROGRAM

*By Joanne Irene Gabrynowicz\**

This volume of the *Journal of Space Law* began in 2006 when the Editor-in-Chief had a discussion with an attorney in the Office of Revision Counsel of the U.S. House of Representatives about a draft bill being prepared to revise and restate laws relating to United States national and commercial space programs as a new positive law title of the United States Code. This is a process known as positive law codification. Since then, the National Center for Remote Sensing, Air, and Space Law (Center) has had an active role in the codification process and informing the space law community about its progress.

An integral part of the codification process is to make the bill available to the public and interested parties to solicit their comments on the bill. As part of that process, the Chair of the Committee on the Judiciary of the U.S. House of Representatives Committee (Committee) was “requesting relevant congressional committees and federal agencies, and other interested parties, to review the bill and submit any comments to the Law Revision Counsel.”<sup>1</sup> In 2008, the Chair also requested the Center to assist the Committee “in ensuring the appropriate codifica-

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\* Joanne Irene Gabrynowicz is the Editor-in-Chief of the *Journal of Space Law*. She is also a professor of space law and remote sensing law and the Director of the National Center for Remote Sensing, Air, and Space Law at the University of Mississippi School of Law. Prof. Gabrynowicz was the recipient of the 2001 Women in Aerospace Outstanding International Award and is a Director of the International Institute of Space Law and a member of the American Bar Association Forum on Air and Space Law.

<sup>1</sup> Letter from John Conyers, Jr. Chair, U.S. House of Representatives Committee on the Judiciary, to Prof. Joanne Irene Gabrynowicz, Director, National Center for Remote Sensing, Air, and Space Law (Mar. 28, 2008), 37 J. SPACE L. at 75 (2011).

tion of title 51...”. The Center then contacted numerous members of the private U.S. bar informing them about the pending bill and soliciting their comments. The letter was also posted on the Center’s blog, *Res Communis*.<sup>2</sup> All of the comments received by the Center were forwarded to the Committee for inclusion in the review process.

From 2008 to 2010, the Center tracked the bill’s progress, providing input to the process as needed. Progress was posted on *Res Communis* and it culminated in the announcement that on December 20, 2010, U.S. President Barak Obama signed H.R. 3237 into law as Public Law 111-314, which enacted the new Title 51, United States Code, “The National and Commercial Space Programs”.

This volume of the *Journal of Space Law* is dedicated to the historic promulgation of Title 51. It is the intention of the *Journal of Space Law* to serve the space law community by making this dedicated issue a complete reference work for Title 51. The keystone element of this issue is the article, *Positive Law Codification of Space Programs: The Enactment of Title 51, United States Code* written by Robert Mark Sukol, Senior Counsel in the Office of the Law Revision Counsel, United States House of Representatives. The author was the principle legislative drafter involved in preparing the legislation to enact the new title.

The next component of this special volume is the official version of Public Law 111-314, which is published here in its entirety. The Committee’s accompanying report that explains the law’s purpose, summary, and background is also published here. It is titled, *To Enact Certain Laws Relating To National and Commercial Space Programs As Title 51, United States Code, “National And Commercial Space Programs.”* The letter from John Conyers, Jr. Chair, Committee on the Judiciary of the U.S. House of Representatives Committee regarding the codification process is included. A Title 51 legislative timeline and a special bibliography that addresses the subject of positive law codification rounds out the reference materials.

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<sup>2</sup> <http://rescommunis.files.wordpress.com/2008/04/congressional-letter-john-conyers-jr.pdf>.

Finally, an article authored by the *Journal of Space Law's* Editor-in-Chief, and originally published in the Harvard Law & Policy Review is republished here. It is titled, *One Half Century and Counting: The Evolution of U.S. National Space Law and Three Long-Term Emerging Issues*.<sup>3</sup> As the title indicates, the article traces the development of U.S. national space law since its inception and is offered in this special volume to provide context and commentary for Title 51.

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<sup>3</sup> Joanne Irene Gabrynowicz, *One Half Century and Counting: The Evolution of U.S. National Space Law and Three Long-Term Emerging Issues*, 4 HARV. L. & POL'Y REV. 405 (2010).

# CALL FOR PAPERS

## JOURNAL OF SPACE LAW UNIVERSITY OF MISSISSIPPI SCHOOL OF LAW

A JOURNAL DEVOTED TO SPACE LAW AND THE LEGAL PROBLEMS ARISING  
OUT OF HUMAN ACTIVITIES IN OUTER SPACE.

### Volume 37, Number 2

The National Center for Remote Sensing, Air, and Space Law of the University of Mississippi School of Law is delighted to announce that it will publish Volume 37, issue 2 of the JOURNAL OF SPACE LAW in the second half of 2011.

Authors are invited to submit manuscripts, and accompanying abstracts, for review and possible publication in the JOURNAL OF SPACE LAW. Submission of manuscripts and abstracts via email is preferred.

Papers addressing all aspects of international and national space law are welcome. Additionally, papers that address the interface between aviation and space law are also welcome.

Please email manuscripts and accompanying abstracts in Microsoft Word or WordPerfect to:

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Or, alternatively, a hardcopy of the manuscript and abstract, along with a computer diskette containing them in Microsoft Word or WordPerfect format may be sent to:

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To be considered for the next issue, submissions should be received on or before October 15, 2011. However, the JOURNAL OF SPACE LAW will continue to accept and review submissions on an on-going basis.

# POSITIVE LAW CODIFICATION OF SPACE PROGRAMS: THE ENACTMENT OF TITLE 51, UNITED STATES CODE

*Rob Sukol\**

## INTRODUCTION

On December 18, 2010, Public Law 111-314 was enacted into law.<sup>1</sup> The event is remarkable for a number of reasons, but most striking is this simple fact: For the past 83 years, the United States Code has been limited to 50 titles, but now a new title has been added: Title 51, United States Code, “National and Commercial Space Programs.”

What is this new title 51 of the United States Code? Styled “National and Commercial Space Programs,” the new title is a restatement of existing law. No new programs or policies were created by Public Law 111-314. No existing programs or policies were cancelled or substantively changed. Yet, for practitioners and academics specializing in space law, and for others with an interest in space law or Federal statutory law generally, the enactment of Public Law 111-314 is highly significant.

Title 51, United States Code, represents a substantial improvement in the organizational structure and codification of United States space law. Many technical corrections and improvements were made by Public Law 111-314 in order to ren-

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\* The author, Robert Mark Sukol, Esq., is a Senior Counsel in the Office of the Law Revision Counsel, United States House of Representatives, having served as a staff attorney in that office since 1994. The author was the principle legislative drafter involved in preparing H.R. 3237 (111th Congress), which was enacted as Public Law 111-314.

<sup>1</sup> National and Commercial Space Programs, Pub. L. No. 111-314, 124 Stat. 3328 (2010), *available at* <http://www.gpo.gov/fdsys/pkg/PLAW-111publ314/pdf/PLAW-111publ314.pdf> and *at* <http://www.gpo.gov/fdsys/pkg/PLAW-111publ314/html/PLAW-111publ314.htm>.

der this body of statutory law easier to navigate and easier to comprehend. In addition, and very importantly, the new organizational structure of the law has been designed to foster greater coherence in the future growth of this area of law.

Until now, no distinct title for national and commercial space programs existed in the United States Code because the organizational scheme for the United States Code was originally established in 1926, before such programs were contemplated. Over the past five decades, a substantial body of Federal legislation related to national and commercial space programs was enacted. The editors of the United States Code, confronted with one statute at a time, placed each of these individual statutes into the Code where it best fit at the time it was enacted. Some of the provisions appeared in title 15 (Commerce and Trade), some in title 42 (The Public Health and Welfare), and some in title 49 (Transportation).

As time passed, it became increasingly apparent that a distinct title for national and commercial space programs was needed. Now Public Law 111-314 gathers these provisions, substantially reorganizes the material into a coherent form, and restates this entire body of Federal statutory law as title 51, United States Code, "National and Commercial Space Programs."

The bill to enact Public Law 111-314 was prepared by the Office of the Law Revision Counsel<sup>2</sup> of the United States House of Representatives (Office). The Office is an independent office in the United States House of Representatives. Among other duties, it is required to prepare positive law codification bills to be transmitted to the Committee on the Judiciary of the House of Representatives.<sup>3</sup> The Office is non-political, being required

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<sup>2</sup> Note that this is "Counsel", not "Council." "The management, supervision, and administration of the Office are vested in the Law Revision Counsel, who shall be appointed by the Speaker [of the United States House of Representatives] without regard to political affiliation and solely on the basis of fitness to perform the duties of the position. Any person so appointed shall serve at the pleasure of the Speaker." 2 U.S.C. § 285c. The current Law Revision Counsel, Mr. Peter G. LeFevre, Esq., was appointed in 2004.

<sup>3</sup> See *id.* § 285b (for details on the functions of the Office of the Law Revision Counsel of the United States House of Representatives).

by law to maintain impartiality as to issues of legislative policy.<sup>4</sup> In general, it maintains and improves the United States Code, which is the official codification of Federal statutory law.

This article begins by providing a basic overview and explanation of the United States Code in part I. The article continues in part II by providing a general discussion of “positive law codification,” which is the legislative process through which Public Law 111-314 came into being. An explanation or overview of the law is addressed in the remaining parts. In the appendices following the article, a copy of Public Law 111-314 and a copy of House Report 111-325, which accompanied the bill enacted as Public Law 111-314, are provided for ready reference.

#### PART I – OVERVIEW OF THE UNITED STATES CODE

The United States Code is the official codification of Federal statutory law.<sup>5</sup> It contains the general and permanent statutory law of the United States, with the material organized into 51 broad subject matter titles. As subsequent enactments amend or repeal earlier statutes, the text of the law, as it evolves, is maintained and presented in a usable, coherent form.

#### *The term “code”*

The term “code” can be used to describe any organized collection of laws, but the United States Code must be distinguished from European style civil codes.<sup>6</sup>

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<sup>4</sup> “The Office shall maintain impartiality as to issues of legislative policy to be determined by the House.” 2 U.S.C. § 285a.

<sup>5</sup> The United States Code is sometimes confused with similar commercially available publications that are based on it. For example, the United States Code Annotated (U.S.C.A.) and the United States Code Service (U.S.C.S.) closely mirror the United States Code as to statutory text. Those publications also provide descriptions of relevant case law and other information related to particular provisions. The United States Code, however, is the only official codification. See 2 U.S.C. §§ 285 – 285g.

<sup>6</sup> Will Tress, *Lost Laws: What We Can’t Find in the United States Code*, 40 GOLDEN GATE U. L. REV. 129, 131-132.

*Historical development*

The United States Code was first published in 1926.<sup>7</sup> That it has been able to maintain an organized presentation of Federal statutory law over the past century is remarkable. The 1926 publication of the United States Code was not the first attempt to organize the nation's Federal statutory law, and earlier attempts were rapidly overwhelmed and made obsolete by new enactments and amendments. The United States Code has been successful despite an explosive level of growth in Federal statutory law since 1926.<sup>8</sup>

Professor Will Tress, Law Library Director at the University of Baltimore School of Law, has traced the history of early attempts to organize Federal statutory law:

*The Development of the U.S. Code*

The first collection of federal statutes - a compilation - was authorized by Congress in 1795. . . . It included all the public laws and treaties enacted up to that date, and an index. The annual session laws themselves were not published on a regular basis until the creation of the Statutes at Large in 1845; before that time, official federal statutes were published in newspapers . . . . By the 1840's, Americans were familiar with the pros and cons of codifying statutes. . . . Beginning in the early 1820's, individual states had debated the benefits of codification. . . . The New York Revised Code of 1829 served as a model for some states enacting their codes; this was particularly evident in the newly admitted states in the West. . . . The first legislative initiative for a revision of the federal statutes . . . was introduced in 1848 by the chairman of the House Judiciary Committee. . . . The Report . . . accompanying that bill laid out the arguments for revising (rather than merely compiling) the session laws: that these laws may have been "enacted under the pressure of momentary emergency; if not in-

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<sup>7</sup> Nancy Pelosi, *Preface - 2006 Edition*, in UNITED STATES CODE, VII (Jan. 15, 2007).

<sup>8</sup> "The first edition of the United States Code, published in 1926, consisted of a single volume. By contrast, the 2000 edition had 35 volumes and the size of the Code increases every year." Peter G LeFevre, *Editor's Note - 2006 Edition*, in UNITED STATES CODE, VIII (Jan. 15, 2007).

consistent, they are obscure; sometimes involved in statutes dissimilar in title and object, and always scattered over different parts of a broad surface, in the numerous hiding places of which they are concealed." . . . Ideally, however, "enactments defining the duties of a particular office should naturally be so united as to furnish all needful information in one comprehensive body. That which seems to be complete in its enumeration should be so in reality."

\* \* \* The Revised Statutes of 1873 and 1878

Despite the evident need for an orderly and up-to-date arrangement of statutes, it was not until 1866 that Congress enacted legislation creating a commission charged with the "revision and consolidation of the statute laws of the United States." . . . The commissioners soon discovered that creating an overall subject scheme and fitting in the individual session laws was a monumental task requiring extensive rewriting: "Where several statutes relating to the same subject modify each other, it has been impossible to state their united effect without writing a new statute." . . . When the revision was presented to Congress in 1872, however, the work was deemed too extreme a departure from the language of the existing session laws, and the draft was passed on to a special reviser to reverse some of the changes made by the commission. . . . The final product of this process - commission drafting and reviser undrafting - was introduced in the House in 1873, enacted in 1874, and published in 1875. . .

In enacting the Revised Statutes of 1873, Congress not only reorganized the previously passed session laws, but replaced them as legal authority. All general acts of Congress "embraced in any section" of the revision were repealed. . . . Appropriations and local and temporary statutes were not covered by the repeal, but general law provisions within appropriations acts were covered by the repeal. A separate act declared the printed volumes of the Revised Statutes of 1873 to be "legal evidence of the laws therein contained, in all the courts of the United States, and of the several States and Territories."

Congress soon had reason to regret such an affirmative break with the accumulated authority of the pre-1874 Statutes at Large. . . . Numerous complaints about mistakes and omis-

sions in the 1873 Revised Statutes . . . led to the publication of an amended and updated version in 1878. . . . After the problems with the 1873 Revision, Congress declined to make the 1878 edition conclusive evidence of the laws passed since 1873. This amended edition was still “legal evidence” of the laws covered in the 1873 Revision, but did not “preclude reference to, nor control, in case of discrepancy, the effect of any original act passed by Congress since the first day of December, eighteen hundred and seventy-three . . . .”

\* \* \* The 1926 United States Code

The difficulties with the Revised Statutes seem to have thoroughly dampened congressional enthusiasm for codification. It was not until almost fifty years later, in 1926, that Congress brought forth a new official federal code of laws. . . . During that extended period, the unofficial commercial versions of the federal laws that were produced used the basic structure of the Revised Statutes to integrate later enactments. Two of the commercial code publishers, West and Edward Thompson, were enlisted in the production of the 1926 edition.<sup>9</sup>

### *Content and features of the United States Code*

As this article is being prepared, a proposed draft of language to explain the content and features of the United States Code is being circulated among the staff of the Office of the Law Revision Counsel. When finalized, this language is slated to be posted as a user guide on a page of the Office’s internet site. Some excerpts from this draft language follow:

The United States Code contains the general and permanent law of the United States, arranged into 51 broad titles according to subject matter. The organization of the Code was originally established by Congress in 1926 with the enactment of the act of June 30, 1926, chapter 712. Since then, 26 of the titles, referred to as positive law titles, have been restated and enacted into law by Congress as titles of the Code. The remaining titles, referred to as non-positive law titles, are made up of

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<sup>9</sup> Will Tress, *supra* note 6, at 133.

sections from many different acts of Congress which had either been included in the original Code or have been added since then by the editors of the Code, i.e. the Office of the Law Revision Counsel, and its predecessors in the House of Representatives.

Each title of the Code is subdivided into some combination of smaller units such as subtitles, parts, chapters, divisions, subchapters, subparts, and sections, not necessarily in that order. Individual sections are often subdivided into some combination of smaller units such as subsections, paragraphs, subparagraphs, clauses, subclauses, and items. In the case of a positive law title, the units are determined by Congress in the laws that enacted and later amended the title. In the case of a non-positive law title, the organization of the title since 1926 has been determined by the editors of the Code and has generally followed the organization of the underlying acts as much as possible. For example, chapter 7 of title 42 sets out the titles, parts, and sections of the Social Security Act as corresponding subchapters, parts, and sections of the chapter.

In addition to the sections themselves, the Code includes statutory provisions set out as statutory notes, the Constitution, several sets of Federal court rules, and certain Presidential documents, such as Executive orders, determinations, notices, and proclamations, which implement or relate to statutory provisions in the Code. The Code does not include treaties, agency regulations, State and District of Columbia laws, or most acts which are temporary or special, such as those that appropriate money for specific years or that apply to only a limited number of people or a specific place.

\* \* \*

The Code also contains editorially created source credits, notes, and tables which provide useful information about the source of Code sections, their arrangement, the references they contain, and their history.

The law contained in the Code is the product of over 200 years of legislating. Drafting styles have changed over the years, and the resulting differences in laws are reflected in the Code. Similarly, Code editorial styles and policies have evolved over the 80-plus years since the Code was first adopted. As a result,

not all acts have been handled in a consistent manner in the Code over time.

\* \* \*

### Statutory Notes

Generally speaking, a note is anything appearing after the text and source credit of a U.S. Code section. There are two main kinds of notes, statutory and editorial. Statutory notes are provisions of law that are set out as notes under a Code section rather than as a Code section. A statutory note can consist of as much as an entire act (such as Public Law 108-347 set out under 22 U.S.C. 5811) or as little as a clause (such as section 1013(a)(4)(B)(iii) of Public Law 100-647 set out under 26 U.S.C. 144). Whether a provision in an act (other than an amendment to a positive law title) appears in the Code as a section or as a statutory note is an editorial decision based on a number of factors.

\* \* \*

### Validity of notes

A provision of a Federal statute is the law whether the provision appears in the Code as section text or as a statutory note, and even when it does not appear in the Code at all. The fact that a provision is set out as a note is merely the result of an editorial decision and has no effect on its meaning or validity.

\* \* \*

### Editorial Notes

Most sections in the U.S. Code are followed by editorial notes. These notes are prepared by the Code editors to assist users of the Code. They provide information about the section's source, derivation, history, references, translations, effectiveness and applicability, codification, defined terms, prospective amendments, and related matters.

\* \* \*

Historical and Revision notes appear only in positive law titles and specify the laws that formed the basis of sections that were included in the title when the title was first enacted into

positive law. The first act in the source credits for such a section is the act that enacted the title into positive law. The Historical and Revision notes provide information about those earlier acts and how they were reorganized into the section as it was enacted as part of the new positive law title. For most titles, the Historical and Revision notes are the reviser's notes that were contained in the congressional committee report accompanying the codification bill that enacted the title.<sup>10</sup>

The early historical development of the United States Code, as discussed in this part, helps to explain why positive law codification is now an ongoing project, being accomplished one title at a time. We turn now to a general discussion of the process of positive law codification.

## PART II - GENERAL DISCUSSION OF “POSITIVE LAW CODIFICATION”<sup>11</sup>

Positive law codification is the legislative process through which Public Law 111-314 came into being.

In general, positive law codification is the process of preparing and enacting a restatement of existing law. The restatement conforms to the policy, intent, and purpose of Congress in the original enactments, but the organizational structure of the law

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<sup>10</sup> This is the proposed draft language for the website of the Office of the Law Revision Counsel, United States House of Representatives. It was prepared by staff of the Office to explain the content and features of the United States Code.

<sup>11</sup> With two exceptions, the material in Part II (General Discussion of “Positive Law Codification”) is based on material from an earlier work by the author, a brochure entitled “Positive Law Codification in the United States Code.” Office of the Law Revision Counsel, United States House of Representatives, *Positive Law Codification in the United States Code*, available at <http://uscode.house.gov/codification/Positive%20Law%20Codification.pdf> (last visited Mar. 29, 2011). The two exceptions are (1) the introductory sentence of Part II of this article, which has been inserted by the author to provide a context for this material within this article, and (2) the portion of the material under the heading “The term ‘positive law.’” That portion of the material (under the heading “The term ‘positive law’”) is based on part of the author’s contribution to proposed draft language currently being developed by the staff of the Office of the Law Revision Counsel, United States House of Representatives, for eventual inclusion on the Office’s website.

is improved, obsolete provisions are eliminated, and technical errors are corrected. The restatement is enacted as a positive law title of the United States Code.

*The term "positive law"*

When used with respect to the United States Code -- as in "*positive law codification*" or "*a positive law title of the Code*" -- the term "positive law" has a special and particular meaning. In general, however, especially in legal philosophy, the term "positive law" is used more broadly. There is overlap to be sure. However, the intended meaning of the term as used with respect to the United States Code is not identical to the intended meaning of the term as used generally, and the distinction must be understood to avoid confusion.<sup>12</sup>

In general, the term "positive law" connotes statutes, i.e., law that has been enacted by a duly authorized legislature. As used in this sense, positive law is distinguishable from natural law. The term "natural law," especially as used generally in legal philosophy, refers to a set of universal principles and rules that properly govern moral human conduct. Unlike a statute,

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<sup>12</sup> Why is there a specialized meaning for the term "positive law" with respect to the United States Code, and why is this term used despite the potential for confusion with the broader meaning given to the identical term in legal philosophy? The answer involves a historical solution to a statutory drafting problem. For generations Congress has used the term "positive law" when it enacts a title of the United States Code, as such, into statutory law. For example, section 1 of the Act of July 30, 1947 (1 U.S.C. note prec. 1), provides in relevant part: "Title 1 of the United States Code entitled 'General Provisions', is codified and enacted into *positive law* . . ." (emphasis added). Earlier legislative drafters chose the term "positive law" in order to capture the abstract distinction between a title of the Code that has been enacted, as such, versus a title of the Code that has not been enacted, as such, but that sets forth enacted statutes. More literally, this distinction might be expressed as "enacted title" versus "non-enacted title," but those literal terms are problematic since they incorrectly seem to suggest that provisions set forth in a "non-enacted title" of the Code have not been enacted. Those provisions have been enacted, but as part of a freestanding statute rather than as part of an enacted (positive law) title. The specialized use of the term "positive law" in this situation captures the abstract distinction between the two types of titles in the Code, and the use of the term in this way is now well established.

natural law is not created by human beings. Rather, the natural law is thought to be the preexisting law of nature, which human beings can *discover* through their capacity for rational analysis.<sup>13</sup>

Within the context of the United States Code, the term “positive law” is used in a more limited sense. A positive law title of the United States Code is a title that has been enacted as a statute. To enact the title, a positive law codification bill is introduced in Congress. The bill repeals existing laws on a certain subject and restates those laws in a new form: a positive law title of the United States Code. The titles of the United States Code that have not been enacted through this process are called non-positive law titles.

Non-positive law titles of the United States Code are compilations of statutes. The Office of the Law Revision Counsel is charged with making the editorial decisions regarding the selection and arrangement of provisions from statutes into the non-positive law titles of the Code. Non-positive law titles, as such,

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<sup>13</sup> This explanation of natural law is an abbreviated and simplified statement regarding an area of legal philosophy that is quite well developed. Classical natural law traces from Aristotle, Hobbes, Locke, et al. Natural law jurisprudence uses universal natural law to critique positive law statutes. This piece, being focused on a recent development in the United States Code, is concerned exclusively with statutory law (i.e., positive law). However, an effective argument can be made that the heart and soul of the United States, so to speak, has always been rooted in deep and abiding faith in natural law principles. The nation’s essential foundational document, the Declaration of Independence, does not rely on any man-made statute or compact as an ultimate reference point, but rather relies explicitly on the natural law principles the founders found to be “self-evident”:

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed. That whenever any form of government becomes destructive to these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness.

THE DECLARATION OF INDEPENDENCE para. 2 (U.S. 1776).

have not been enacted by Congress, but the laws assembled in the non-positive law titles have been enacted by Congress.

In both positive law titles and non-positive law titles of the United States Code, all of the law set forth is positive law (in the general sense of the term) because the entire United States Code is a codification of Federal statutes enacted by Congress, and not of preexisting *natural law* principles.

### *Positive law titles*

The United States Code is divided into subject matter titles. Some are “positive law” titles and some are “non-positive law” titles. The difference is this: A positive law title of the United States Code is - itself - a Federal statute. A non-positive law title of the United States Code is an editorial compilation of Federal statutes.

For example, title 10, United States Code, “Armed Forces,” is a positive law title because the title, per se, has been explicitly enacted. Alternatively, title 42, United States Code, “The Public Health and Welfare,” is a non-positive law title. The Federal statutes set out editorially in title 42 have been explicitly enacted, but title 42, per se, has not.

Provisions set out in non-positive law titles of the United States Code may vary slightly from the precise language enacted into law; cross references are adapted and stylistic changes are made in order to facilitate the integration of Federal statutory provisions into the United States Code. By contrast, a positive law title of the United States Code constitutes the precise statutory language enacted into law. The distinction between positive law titles and non-positive law titles can have legal and practical ramifications. (See “Benefits of Positive Law Codification” below). Ultimately, all titles of the United States Code will be positive law titles. At present, about half are positive law titles.

### *Office of the Law Revision Counsel*

The Office of the Law Revision Counsel is an independent office in the United States House of Representatives. Among other duties, the Office of the Law Revision Counsel is required

to prepare positive law codification bills to be transmitted to the Committee on the Judiciary of the House of Representatives. The Office of the Law Revision Counsel is non-political, being required by law to maintain impartiality as to issues of legislative policy. In general, the function of the Office of the Law Revision Counsel is to maintain and improve the United States Code, which is the official codification of Federal statutory law.

#### *Review and comment*

As a positive law codification bill is prepared, the Office of the Law Revision Counsel actively seeks input from Federal agencies, congressional committees, and others with expertise in the area of law being codified. Close review and rigorous analysis are welcomed, so that all interested parties are assured that the restatement of law is accurate and comprehensive. A formal review and comment period begins once the bill is introduced, but from the very outset of the drafting process the Office of the Law Revision Counsel actively seeks feedback.

#### *Legislative procedure*

The Office prepares an initial draft of a bill to restate existing law as a positive law title of the United States Code. The bill is introduced in the House of Representatives by the Chairman of the Committee on the Judiciary. The Committee on the Judiciary has jurisdiction of codification legislation. After introduction of the bill, an extensive review and comment period ensues. The Office of the Law Revision Counsel actively seeks input from Federal agencies, congressional committees, and others with expertise in the area of law being codified. At the conclusion of the comment period, an amendment in the nature of a substitute – reflecting corrections and comments – is prepared by the Office of the Law Revision Counsel and transmitted to the Committee on the Judiciary for Committee action. Typically, the bill is passed by the House under suspension of the rules and in the Senate by unanimous consent.

*Benefits of Positive Law Codification*

The process of positive law codification yields a number of benefits for the courts, Congress, Federal agencies, the private bar, and all who use or refer to Federal statutory law, including:

**Legal evidence.** Provisions set out in non-positive law titles of the United States Code are merely prima facie evidence of the actual law. However, once those provisions are enacted as a positive law title of the United States Code, the provisions, as set out in the Code, constitute legal evidence of the law in all Federal and State courts.

**Improved organization.** Provisions that are closely related by subject may be scattered in different places in the United States Code. Such provisions may have been enacted many years apart and incorporated into the United States Code at different times. Positive law codification affords an opportunity to revisit the organizational structure of statutory material. Thoughtful regrouping of provisions often yields a statutory product that is easier to use and that fosters a more comprehensive understanding of the law.

**Elimination of obsolete provisions.** Obsolete provisions are frequently identified in the course of preparing a positive law codification bill. For example, existing law often contains provisions related to reports that were required and submitted many decades in the past. Obsolete provisions are eliminated from the law after appropriate vetting of proposed changes. Although such changes seem small and innocuous when viewed individually, the cumulative effect of removing all obsolete provisions can be profound, resulting in a much more compact and comprehensible text.

**Improved wording and form.** Some provisions - particularly provisions enacted many years ago - use archaic "legalese" that obscures the meaning of the text. Positive law codification provides an opportunity to update wording to achieve a more consistent and readable style. Even when no words are changed, improvements in form may make the text more understandable. For example, an overlong and complex provision may be broken down into labeled parts to aid the reader in following the text and focusing on relevant material. In all cases, great care is

taken to ensure that the restatement of existing law conforms to the policy, intent, and purpose of Congress in the original enactments.

**Correction of technical errors.** Positive law codification provides an opportunity to correct technical errors in the law, including typographical errors, misspellings, and punctuation and grammar problems.

**Precise statutory text.** The process of positive law codification promotes public access to the precise text of Federal statutory law. Provisions set out in non-positive law titles of the United States Code may vary slightly from the precise language enacted into law; cross references are adapted and stylistic changes are made in order to facilitate the integration of Federal statutory provisions into the United States Code. By contrast, a positive law title of the United States Code constitutes the precise statutory language enacted into law.

**Cleaner amendments.** Positive law codification promotes accuracy and efficiency in the preparation of amendments. A positive law title of the United States Code constitutes the precise statutory language enacted into law. Specifying words to be struck or the place where new words are to be inserted is simplified. Understanding the impact of proposed amendments is easier. Drafting errors are reduced. In addition, compliance with congressional rules requiring comparative prints (showing proposed omissions and insertions) is facilitated.

**Streamlined citations.** Statutory citations in court documents, legal academic papers, and other legal work are streamlined as a result of positive law codification. A reference to a provision in a non-positive law title of the United States Code may require a long citation including the section number, the short title of the Act, the Public Law number, and the Statutes at Large citation - all in addition to the United States Code citation. However, once the provision is enacted as a part of a positive law title, the United States Code citation becomes the complete citation.

In concluding this general discussion of positive law codification, a fundamental point is that positive law codification bills restate existing law, but do so in a manner that conforms to the existing law insofar as the policy, intent, and purpose of the

underlying enactments. This point is discussed in detail in Part III.

### PART III – CONFORMITY WITH ORIGINAL INTENT OF SOURCE LAW

In order to understand Public Law 111-314 -- what the Act is and what it does -- it is first necessary to understand what the Act is not and what it does not do. Notwithstanding the broad sweep of Public Law 111-314 -- the entire body of United States space law is transformed -- the Act does not provide for any new programs or modify or repeal any existing programs. Rather, the Act restates existing law in a manner adhering to the policy, intent, and purpose of the original enactments being repealed and replaced.

Upon introducing H.R. 3237 in the United States House of Representatives, the Chairman of the Committee on the Judiciary explained:

The new positive law title replaces the existing provisions, which are repealed by the bill. The bill is ***not intended to make any substantive changes*** in the law. As is typical with the codification process, a number of non-substantive revisions are made, including the reorganization of sections into a more coherent overall structure, but ***these changes are not intended to have any substantive effect***.<sup>14</sup>

Within the Act itself, section 2 makes the point explicitly:

The purpose of this Act is to codify certain existing laws related to national and commercial space programs as a positive law title of the United States Code. . . . In the codification of laws by this Act, the intent is to conform to the understood policy, intent, and purpose of Congress in the original enactments, with such amendments and corrections as will remove ambiguities, contradictions, and other imperfections . . . .<sup>15</sup>

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<sup>14</sup> EXTENSION OF REMARKS, CONG. REC. E1818 (July 16, 2009) (statement of Hon. John Conyers, Jr. of Michigan) (emphasis added).

<sup>15</sup> National and Commercial Space Programs, *supra* note 1, § 2, (51 U.S.C. note prec. 10101).

When the bill was reported out by the Committee on the Judiciary of the House of Representatives, the Committee's report dealt with this issue in considerable detail:

#### Conformity With Original Intent

In the drafting, the intent is to comply with the standard set forth in 2 U.S.C. 285b(1), that the restatement of existing law shall conform to "the understood policy, intent, and purpose of the Congress in the original enactments, with such amendments and corrections as will remove ambiguities, contradictions, and other imperfections . . . ."

In restating existing law, this bill consolidates various provisions of law which have been enacted separately over a period of many years, reorganizing them, conforming style and terminology, modernizing obsolete language, and correcting drafting errors. These changes are not intended to have substantive effect, or to impair in any way the precedential value of earlier judicial decisions or other interpretations.

This bill is intended to restate existing law without substantive change. That enactment of a bill such as this one does not make substantive change in the law, absent an unequivocal expression of Congressional intent to make such a change, has been repeatedly held in numerous cases, including the following:

*Finley v. United States*, 490 U.S. 545, 553-555 (1989).

*Cass v. United States*, 417 U.S. 72, 81-82 (1974).

*Tidewater Oil Co. v. U.S.*, 409 U.S. 151, 161-162 (1972).

*United States v. Cook*, 384 U.S. 257, 260 (1966).

*Fourco Glass Co. v. Transmirra Products Corp.*, 353 U.S. 222, 226-227 (1957).

*Washington-Dulles Transportation, Ltd. v. Metropolitan Washington Airports Authority*, 263 F.3d 371, 378-379 (4th Cir. 2001).

*Atchison, Topeka and Santa Fe Railway Co. v. United States*, 617 F.2d 485, 490-491 (7th Cir. 1980).

*Trailer Marine Transport Corp. v. Federal Maritime Commission*, 602 F.2d 379, 383 (D.C. Cir. 1979).

See also NORMAN J. SINGER, SUTHERLAND STATUTORY CONSTRUCTION, §§28.10, 28.11 (6th ed. 2002).<sup>16</sup>

#### PART IV – ORGANIZATION AND ENUMERATION

Although Public Law 111-314 does not make substantive changes in the law, it does make sweeping changes in the organizational structure used to present space law in the United States Code. The primary purpose driving these organizational changes is to make the existing body of Federal statutory law related to national and commercial space programs easier to use and comprehend. In many cases these statutory provisions were enacted many years apart - often several decades apart. Conceptually related provisions are frequently enacted as part of separate programs. In the day-to-day editorial process of preparing and maintaining the United States Code, it is impossible to group all conceptually related provisions together.

Truth to tell, even in the course of preparing a wholesale restatement of law it is not always possible to group all conceptually related provisions together. Perfection is impossible. A provision that is integral to one program may be conceptually related to a provision that is integral to some other very different program. If the overall thrust of the two programs is sufficiently unrelated, then the two particular provisions within each program, although related conceptually themselves, will necessarily be pulled apart. It is a matter of balance. A positive law codification bill provides an opportunity to closely reexamine and reflect on the way statutory material is organized. Even if it is impossible to achieve a perfect organizational structure (in which absolutely every conceptually related provision is placed adjacent to its conceptual cousin), it is possible to maximize the coherence of the organizational structure as a whole. This is more art than science, but thoughtful regrouping of provisions enacted many years apart can provide a body of law that

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<sup>16</sup> H.R. REP. NO. 111-325, at 2 (2009).

“tracks” much more easily. For experienced, knowledgeable researchers, such restructuring, can be quite helpful in the long run, even if a transition period is required to adapt. For general researchers, who may lack deep experience or expertise in this particular body of law, such improved organization can be a godsend, making the difference between missing or finding statutory provisions that are highly relevant to an inquiry at hand.

A very important secondary purpose also underlies the organizational changes made to this body of law. The structure of the new title 51, United States Code, is designed to be robust. It is designed, that is, to accommodate and foster future growth of this body of law in decades to come. Of course, it is impossible to anticipate the future development of Federal statutory law in any area with precision. And the further out in time one looks, the cloudier the horizon will be. In 1926, the United States Code was designed without the existence of a title 51 for “national and commercial space programs.” In 1926, the designers of the United States Code did not, indeed, could not, anticipate that need with any precision. However, the perspective was different in 2010 as Public Law 111-314 was enacted. With over 50 years of Federal statutory development to examine, the drafter could examine not only the current state of Federal space law, but also the trajectory of growth over the past few decades. As noted, this sort of fortune telling is highly imprecise, but the drafter was able to bring some sense, at least, of recent trends, with relatively greater clarity of foresight for anticipated growth in the near term.

To build a new title that is robust, that will accommodate anticipated future growth in the law while maintaining overall organizational coherence, there are a number of simple drafting and planning techniques that the drafter of a positive law codification bill may use. The most important of these techniques is a breathtakingly simple drafting principle: Leave Room For New Stuff. This principle is actualized largely through the system of enumeration adopted for the units within the title. Section numbers, chapter numbers, and subtitle numbers in the title (and subunits of these units) are all assigned with intention, leaving lots of room for future growth.

In title 51, United States Code, unit numbers are not packed tightly together. To the contrary, the title is porous and open, with plenty of room for future growth in every subject area. If such growth never takes place in a particular subject area, then the roominess built into that area turns out to be unnecessary. But unused potential unit numbers do no harm; they cost nothing. We leave room for growth everywhere because that growth might occur anywhere.

Picture a tree with many branches. Leaves of legislative growth can sprout up on any branch. There is room for new growth on every branch. Whether a particular branch sprouts new leaves of legislative growth will depend on whether the sunshine of Congressional attention falls on that branch. A tree does not know where the sunshine will fall, so it spouts branches in every direction. In our new title, we create a multitude of branches to give future drafters easy convenient targets for future growth wherever they may require.

A few specifics are in order to illustrate the drafting enumeration style being discussed here. As a threshold matter, consider that, as enacted by Public Law 111-314, title 51, United States Code, consists of only 30 chapters. All of the existing statutory within the ambit of the project is set out in just 30 chapters. Those 30 chapters could have been numbered chapter 1 through chapter 30. Instead, however, note that the chapters run from chapter 101 to chapter 713. Throughout the title, there is room left for future growth - a lot of room. That roominess is not inserted randomly, but placed into the title in a thoughtful, strategic manner.

Note that the chapters enacted by Public Law 111-314 are all odd numbers (chapter 301, 303, 305, etc). No even-numbered chapters are created in the original enactment of title 51, United States Code. If a future program is enacted, and that future program is conceptually very closely tied to an existing chapter of title 51, United States Code, the new program can be inserted as an even-numbered chapter before or after the existing chapter.

The new title is divided into 7 broad subtitles, and between the end of each subtitle and the beginning of the next, plenty of

room is left available for future enactment of new chapters related to the subject of the subtitle.

PART V – A “GUIDED TOUR” OF TITLE 51, UNITED STATES CODE

*Overview: Enactment of a Title-Wide Outline*

Set out below is the title-wide table of contents enacted at the beginning of title 51, United States Code, by section 3 of Public Law 111-314.<sup>17</sup>

Subtitle I-General

Chapter 101. Definitions

Subtitle II-General Program and Policy Provisions

Chapter 201. National Aeronautics and Space Program

Chapter 203. Responsibilities and Vision

Subtitle III-Administrative Provisions

Chapter 301. Appropriations, Budgets, and Accounting

Chapter 303. Contracting and Procurement

Chapter 305. Management and Review

Chapter 307. International Cooperation and Competition

Chapter 309. Awards

Chapter 311. Safety

Chapter 313. Healthcare

Chapter 315. Miscellaneous

Subtitle IV-Aeronautics and Space Research and Education

Chapter 401. Aeronautics

Chapter 403. National Space Grant College and Fellowship Program

Chapter 405. Biomedical Research in Space

Chapter 407. Environmentally Friendly Aircraft

Chapter 409. Miscellaneous

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<sup>17</sup> Section 3 of Public Law 111-314 (124 Stat. 3328) enacts the entirety of title 51, United States Code, except that chapters 509 and 511 of title 51, United States Code, are transferred from title 49 to title 51, United States Code, by section 4(d) of Public Law 111-314 (124 Stat. 3440). *See infra* Part VI.

Subtitle V-Programs Targeting Commercial Opportunities

Chapter 501. Space Commerce

Chapter 503. Commercial Reusable In-Space Transportation

Chapter 505. Commercial Space Competitiveness

Chapter 507. Office of Space Commercialization

Chapter 509. Commercial Space Launch Activities.

(See § 4(d) of Public Law 111-314.)

Chapter 511. Space Transportation Infrastructure Matching Grants.

(See § 4(d) of Public Law 111-314.)

Subtitle VI-Earth Observations

Chapter 601. Land Remote Sensing Policy

Chapter 603. Remote Sensing

Chapter 605. Earth Science

Subtitle VII-Access to Space

Chapter 701. Use of Space Shuttle or Alternatives

Chapter 703. Shuttle Pricing Policy for Commercial and Foreign Users

Chapter 705. Exploration Initiatives

Chapter 707. Human Space Flight Independent Investigation Commission

Chapter 709. International Space Station

Chapter 711. Near-Earth Objects

Chapter 713. Cooperation for Safety Among Spacefaring Nations

The enactment of a title-wide table of contents to appear at the beginning of title 51, United States Code, represents an innovation in style for positive law titles of the United States Code. The traditional approach to tables of contents in positive law titles has been to list only the immediate component subunits in the table of contents for each unit. In the table of contents for the title, the component subtitles would be listed. In the table of contents for each subtitle, the component parts would be listed. In the table of contents for each part, the component subparts would be listed. And so forth. Thus, the reader would need to locate and view several tables in order to piece together a single broad overview of the title as a whole. And the

conceptually simple task of locating the relevant tables of contents could be made awkward in some cases because the structure of various units might be different. For example, one subtitle might be organized into parts (with each part containing several chapters), while the next subtitle might simply contain chapters (with no intervening organization into parts). The information was available, but the reader needed to dig to get at it.

As the bill to enact title 51, United States Code, was being prepared, a decision was made to improve on the table of contents scheme as an important method to make the new title a more “user-friendly” research tool. Only two levels of tables of contents are used.

First, there is the title-wide table of contents set out above. The title-wide table of contents appears at the beginning of the title and drills all the way down to the chapter level in every case, providing the reader with a reasonably detailed overview of the title as a whole. Second, at the beginning of each chapter, a chapter-wide table of contents drills all the way down to the section level in every case, providing the reader with a reasonably detailed overview of the particular chapter.

This arrangement is used consistently throughout the new title so that the reader can, by locating and examining only two tables -- one located at the beginning of the title and one at the beginning of the relevant chapter -- view and consider the contextual setting in which every section of the title appears.

Returning to the title-wide table of contents set out above, the idea behind this stylistic innovation was to enable the reader -- at a glance -- to readily comprehend the overall structure of the title in order to focus quickly on material relevant to the reader’s area of inquiry. The title-wide table of contents reveals that the title consists of 7 broad subtitle areas, each of which is discussed below.

## Subtitle I-General

As enacted by Public Law 111-314, subtitle I consists of a single section in a single chapter. Two simple and obvious definitions are enacted here for clarity and convenience.<sup>18</sup> The term “Administration” means the National Aeronautics and Space Administration, and the term “Administrator” means the Administrator of the National Aeronautics and Space Administration. Both definitions are made to apply anywhere “[i]n this title.”<sup>19</sup>

It is noteworthy (and quite intentional) that the entirety of subtitle I consists of a single section in a single chapter. A vast amount of room is reserved here for future enactments. This is a prime example of the intentionally robust character of the enumeration structure used to form title 51, United States Code.<sup>20</sup> Subtitle I of title 51, United States Code, as a “General” subtitle appearing at the beginning of the title, is envisioned as a proper location for any future enactments relating to the administration of the title itself. Should Congress find it necessary or desirable in the future to enact additional title-wide definitions or other provisions related to the scope and applicability of the title, subtitle I would be the proper place in which to enact those provisions.

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<sup>18</sup> H.R. REP. NO. 111-325, at 25 (Nov. 2, 2009) [hereinafter HOUSE REPORT].

<sup>19</sup> 51 U.S.C. § 10101. Experience counsels that it is worth clarifying what may seem like a very basic concept. The definitions apply “[i]n this title.” That statement of applicability must be read literally and precisely. The definitions apply anywhere within the text of any section of title 51, United States Code. That is the complete extent of their ambit of applicability. If the defined terms are used in a provision from another statute (for example in a NASA authorization Act), then the definitions in section 10101 of title 51, United States Code, do not apply. Even if the provision from the other statute is editorially classified so as to appear under one of the sections of title 51, United States Code, the definitions do not apply. The words “[i]n this title” do not mean the physical volume in which title 51, United States Code, is printed. Rather, the words “[i]n this title” must be understood precisely; they mean the section text of each section of title 51, United States Code, as the title has been enacted and amended.

<sup>20</sup> See *supra* “Part IV - Organization and Enumeration.”

## Subtitle II-General Program and Policy Provisions

As enacted by Public Law 111-314, subtitle II of title 51, United States Code, consists of two chapters. These two chapters set out the basic statutory program and policy authority for the national and commercial space programs of the United States.

Chapter 201 of title 51, United States Code, which is styled “National Aeronautics and Space Program,” is a restatement of the National Aeronautics and Space Act of 1958.<sup>21</sup> That 1958 enactment, informally referred to as “the Space Act” by those who work extensively in this area of law, is the foundational taproot, the “grand-daddy” of United States national and commercial space program law. The Act established the National Aeronautics and Space Administration<sup>22</sup> (hereinafter NASA) and laid the foundation for national and commercial aeronautical and space program activity of the United States.

The foundational nature of “the Space Act” of 1958 led to inclusion of a provision that is unusual for a positive law codification bill: a short title provision. In general, in positive law codification projects, short titles are eliminated as unnecessary.<sup>23</sup> However, staffers from many quarters commenting on early drafts of the bill were aghast that they would no longer be able to refer to this group of provisions collectively as “the Space Act.” There seemed to be an emotional fondness for and attachment to the very name “the Space Act,” and the austere “chapter 201 of title 51” was deemed to be a terribly inadequate replacement. It was suggested that restatement in chapter 201 simply take on the precise same short title as the underlying Act. That suggestion was problematic, of course, since confusion would reign if two different enactments had precisely the same short title. Although the enactments were designed to be substantively equivalent, there might be occasions (technical amendments, for example) where distinguishing the enactments was necessary. Distinguishing the enactments would be impossible

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<sup>21</sup> HOUSE REPORT, *supra* note 18, at 26.

<sup>22</sup> 51 U.S.C. § 20111(a) (for the provision establishing NASA).

<sup>23</sup> HOUSE REPORT, *supra* note 18, at 26.

(or, at least, highly impractical) if the words “National Aeronautics and Space Act of 1958” became the enacted short title for both the 1958 enactment and the 2010 enactment. Therefore, the “of 1958” was dropped, and section 20101 of title 51, United States Code, provides that chapter 201 may be cited as the “National Aeronautics and Space Act.” Thus, the two enactments are distinguishable if they ever need to be distinguished, and staffers can happily (and reasonably) continue to refer to this group of provisions as “the Space Act.”

Chapter 203 of title 51, United States Code, “Responsibilities and Vision,” is a restatement of selected provisions from three separate underlying Acts: the National Aeronautics and Space Administration Authorization Act of 2005,<sup>24</sup> the America COMPETES Act,<sup>25</sup> and the National Aeronautics and Space Administration Authorization Act of 2008.<sup>26</sup> The provisions are conceptually related to each other and generally relate to updated policy considerations involved in carrying out the national and commercial space programs of the United States.

### Subtitle III-Administrative Provisions

Subtitle III of title 51, United States Code, was one of the most challenging subtitles to organize and draft. Over the past few decades, many independent provisions have been enacted that relate generally to the administration of national and commercial space programs. Frequently these provisions have been buried within the “administrative” subdivisions of appropriations Acts or within NASA authorization Acts. Often these

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<sup>24</sup> National Aeronautics and Space Administration Authorization Act of 2005, Pub. L. No. 109-155, 119 Stat. 2895 (2005), *available at* <http://legislative.nasa.gov/PL109-155.pdf> [hereinafter NASA Authorization Act of 2005].

<sup>25</sup> America COMPETES Act, Pub. L. No. 110-69, 121 Stat. 572 (2007), *available at* [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110\\_cong\\_public\\_laws&docid=f:publ069.110.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_public_laws&docid=f:publ069.110.pdf).

<sup>26</sup> National Aeronautics and Space Administration Authorization Act of 2008, Pub. L. No. 110-422, 122 Stat. 4779 (2008), *available at* <http://legislative.nasa.gov/PL%20110-422.pdf> [hereinafter NASA Authorization Act of 2008].

provisions were isolated, not enacted as an integral part of any larger program.

Where to classify these provisions in the United States Code as they were enacted over the years was problematic, but the editors of the United States Code found the best “fit” for each one. As these provisions were individually enacted, the Code editors would place each one near to the most conceptually related existing provision, usually a provision that had previously been enacted as part of some larger program.

However, as the restatement the whole body of law was being prepared, a broader perspective was possible given the ability to examine and consider at one time several decades worth of these individually enacted provisions. Two things became clear. First, that these provisions taken together formed a unit, a related set of administrative requirements. Second, that the provisions could be conceptually divided into several discrete categories. Thus, the decision was made to restate the provisions together as subtitle III (“Administrative Provisions”) of title 51, United States Code, and to divide the subtitle into several discrete chapters.

The precise grouping of these provisions required thoughtful analysis, delicate balance, and, quite frankly, a willingness to seek and accept an optimal arrangement, even if that optimal arrangement was clearly imperfect as a matter of pure logic. An additional consideration with respect to grouping the provisions into chapters was to make the title robust, capable of readily absorbing any future enacted administrative provisions that Congress might want to add. The resulting arrangement consists of eight chapters:

- Chapter 301. Appropriations, Budgets, and Accounting
- Chapter 303. Contracting and Procurement
- Chapter 305. Management and Review
- Chapter 307. International Cooperation and Competition
- Chapter 309. Awards
- Chapter 311. Safety
- Chapter 313. Healthcare
- Chapter 315. Miscellaneous

These chapters certainly do not represent the only logical way to organize the existing provisions. Many other possibilities

were developed and considered. This arrangement, however, does seem to strike an optimal balance, accommodating the organization of the existing provisions with sufficient particularity, yet leaving enough conceptual “wobble room,” enough generality, to accommodate future legislative growth that might branch out in unanticipated directions.

#### Subtitle IV-Aeronautics and Space Research and Education

As enacted by Public Law 111-314, subtitle IV of title 51, United States Code, consists of five chapters. Four chapters represent restatements of programs enacted in various NASA authorization Acts, and the last chapter of the subtitle restates miscellaneous provisions related to research and education.

Most of the source law for chapter 401, Aeronautics, was originally enacted as part of title IV of the National Aeronautics and Space Administration Authorization Act of 2005.<sup>27</sup> Chapter 403, National Space Grant College and Fellowship Program, is a restatement of the program originally established by the National Space Grant College and Fellowship Act.<sup>28</sup> In chapter 405, Biomedical Research in Space, the program originally created by title VI of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993<sup>29</sup> is restated. Chapter 407, Environmentally Friendly Aircraft, combines a restatement of three sections enacted in the National Aeronautics and Space Administration Authorization Act of 2005,<sup>30</sup> with the restatement of a related provision enacted in the National Aeronautics and Space Administration Authorization Act of 2008.<sup>31</sup> Miscella-

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<sup>27</sup> NASA Authorization Act of 2005, *supra* note 24.

<sup>28</sup> National Aeronautics and Space Administration Authorization Act of 1988, Pub. L. No. 100-147, 101 Stat. 860, at Title II (1988), *available at* <http://www.cq.com/graphics/sal/100/sal100-147.pdf>.

<sup>29</sup> National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993, Pub. L. No. 102-588, 106 Stat. 5107 (1993), *available at* <http://history.nih.gov/research/downloads/PL102-588.pdf> [hereinafter NASA Authorization Act of 1993].

<sup>30</sup> NASA Authorization Act of 2005, *supra* note 24.

<sup>31</sup> NASA Authorization Act of 2008, *supra* note 26.

neous provisions from a variety of source laws are restated in chapter 409.

#### Subtitle V-Programs Targeting Commercial Opportunities

Subtitle V of title 51, United States Code, is constructed partly through conventional restatement of source law into the form of a positive law title of the United States Code and partly by the transfer of two chapters from one positive law title to another.<sup>32</sup>

In chapter 501, Space Commerce, chapter 503, Commercial Reusable In-Space Transportation, and chapter 505, Commercial Space Competitiveness, provisions from the Commercial Space Act of 1998,<sup>33</sup> the Commercial Reusable In-Space Transportation Act of 2002,<sup>34</sup> and title V of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993,<sup>35</sup> respectively, are restated in the conventional method to become part of the new positive law title 51, United States Code.

Chapter 507, Office of Space Commercialization, is also established in title 51, United States Code, through the conventional restatement method, but the mere fact of the existence of this chapter in the new title is an excellent illustration of the importance of the review and comment process that is part of all codification projects.

As a positive law codification bill is prepared, the Office of the Law Revision Counsel actively seeks input from Federal agencies, congressional committees, and others with expertise in the area of law being codified.<sup>36</sup> Close review is always welcomed, and this chapter provides a fine example of why such review is valuable.

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<sup>32</sup> See *infra* “Part VI - Transfer of Chapters From Title 49”.

<sup>33</sup> Commercial Space Act of 1998, Pub. L. No. 105-303, 112 Stat. 2843 (1998), available at <http://landsat.usgs.gov/documents/PL105-303.pdf>.

<sup>34</sup> Commercial Reusable In-Space Transportation Act of 2002, Pub. L. No. 107-248, at Title IX, available at [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107\\_cong\\_public\\_laws&docid=f:publ248.107](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107_cong_public_laws&docid=f:publ248.107).

<sup>35</sup> NASA Authorization Act of 1993, *supra* note 29.

<sup>36</sup> See *supra* text in “Part II - General Discussion of ‘Positive Law Codification’”, subheading “Review and comment”.

During the review and comment process for this bill, it was suggested that our restatement of national and commercial space law was not quite comprehensive because we had missed two important provisions. Section 8 of the Technology Administration Act of 1998<sup>37</sup> established the Office of Space Commercialization in the Department of Commerce, and section 115(b) of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991<sup>38</sup> set up an annual reporting requirement on the activities of the Office of Space Commercialization.

We reviewed the suggestion to include these provisions in title 51, United States Code, and agreed immediately that provisions relating to the Office of Space Commercialization were a perfect “fit” to be incorporated in subtitle V (“Programs Targeting Commercial Opportunities”) of title 51, United States Code. A definition for the term “Office” was added<sup>39</sup> for clarity and convenience,<sup>40</sup> and the restatement in chapter 507 of title 51, United States Code, was prepared.

Finally, we come to the two chapters that were created by transferring material from one positive law title of the United States Code to another. These are chapters 509 and 511 of title 51, United States Code. The considerations and methods involved in creating these chapters are discussed in detail below, under the heading “Part VI - Transfer of Chapters From Title 49.”

#### Subtitle VI-Earth Observations

As enacted by Public Law 111-314, subtitle VI of title 51, United States Code, consists of three chapters. Chapter 601, Land Remote Sensing Policy, is a restatement of the Land Re-

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<sup>37</sup> Technology Administration Act of 1998, Pub. L. 105-309, 112 Stat. 2935 (1998).

<sup>38</sup> National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991, Pub. L. 101-611, 104 Stat 3192 [hereinafter NASA Authorization Act of 1991].

<sup>39</sup> 51 U.S.C. § 50701.

<sup>40</sup> H.R. REP. NO. 111-325, at 59 (Nov. 2, 2009), *available at* <http://www.gpo.gov/fdsys/pkg/CRPT-111hrpt325/pdf/CRPT-111hrpt325.pdf>.

mote Sensing Policy Act of 1992.<sup>41</sup> Chapter 603, Remote Sensing, is a restatement of related provisions from title III of the National Aeronautics and Space Administration Authorization Act of 2005.<sup>42</sup> Chapter 605, Earth Science, groups together and restates certain related provisions selected from title II and title XI of the National Aeronautics and Space Administration Authorization Act of 2008<sup>43</sup> and title III of the National Aeronautics and Space Administration Authorization Act of 2005.<sup>44</sup>

#### Subtitle VII-Access to Space

As enacted by Public Law 111-314, subtitle VII, of title 51, United States Code, consists of seven chapters and is the final subtitle of title 51, United States Code. Under the broad subtitle heading "Access to Space," subtitle VII pulls together and restates several distinct but related programs and forms chapters from groups of related provisions which were often enacted many years apart. A case in point, chapter 701, Use of Space Shuttle or Alternatives, restates one provision from the National Aeronautics and Space Administration Authorization Act, 1983<sup>45</sup> and several related provisions from the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991.<sup>46</sup> Chapter 703, Shuttle Pricing Policy for Commercial and Foreign Users, restates title II of the National Aeronautics and Space Administration Authorization Act of 1986.<sup>47</sup> Chapter 705, Exploration Initiatives, forms a chapter by combining and restating related provisions from title V of the National Aeronautics and Space Administration Authorization Act of 2005,<sup>48</sup> and titles IV and V of the National Aeronautics and Space Ad-

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<sup>41</sup> Land Remote Sensing Policy Act, Pub. L. 102-555, 106 Stat. 4163 (1992).

<sup>42</sup> NASA Authorization Act of 2005, *supra* note 24.

<sup>43</sup> NASA Authorization Act of 2008, *supra* note 26.

<sup>44</sup> NASA Authorization Act of 2005, *supra* note 24.

<sup>45</sup> National Aeronautics and Space Administration Authorization Act, 1983, Pub. L. 97-324, 96 Stat. 1597 (1982).

<sup>46</sup> NASA Authorization Act of 1991, *supra* note 38.

<sup>47</sup> National Aeronautics and Space Administration Authorization Act of 1986, Pub. L. 99-170, 99 Stat. 1012 (1985).

<sup>48</sup> NASA Authorization Act of 2005, *supra* note 24.

ministration Authorization Act of 2008.<sup>49</sup> Chapter 707, Human Space Flight Independent Investigation Commission, restates the organic provisions establishing the Commission, which were originally enacted as sections 821 to 830 of the National Aeronautics and Space Administration Authorization Act of 2005.<sup>50</sup> Chapter 709, International Space Station, forms a chapter by grouping together and restating one provision that never previously appeared in the United States Code, section 123 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991,<sup>51</sup> several provisions from titles II and V of the National Aeronautics and Space Administration Authorization Act of 2005,<sup>52</sup> and two provisions from title VI of the National Aeronautics and Space Administration Authorization Act of 2008.<sup>53</sup> Chapter 711, Near-Earth Objects, restates title VIII of the National Aeronautics and Space Administration Authorization Act of 2008.<sup>54</sup> Finally, chapter 713, Cooperation for Safety Among Spacefaring Nations, forms a chapter by combining and restating two related provisions, one from title IV and one from title XI, of the National Aeronautics and Space Administration Authorization Act of 2008.<sup>55</sup>

#### PART VI – TRANSFER OF CHAPTERS FROM TITLE 49

##### *The link to chapters 701 and 703 of title 49, United States Code*

Conceptually, the statutory material previously found in chapters 701 and 703 of title 49, United States Code, is very closely related to statutory material restated in subtitle V, Programs Targeting Commercial Opportunities, of title 51, United States Code. That fact is unsurprising given the common roots of the original enactments.

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<sup>49</sup> NASA Authorization Act of 2008, *supra* note 26.

<sup>50</sup> NASA Authorization Act of 2005, *supra* note 24.

<sup>51</sup> NASA Authorization Act of 1991, *supra* note 38.

<sup>52</sup> NASA Authorization Act of 2005, *supra* note 24.

<sup>53</sup> NASA Authorization Act of 2008, *supra* note 26.

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

With respect to chapter 701 of title 49, United States Code, the Commercial Space Act of 1998 (Public Law 105-303) is the common source for that material and the material restated in chapter 501 of title 51, United States Code.

With respect to chapter 703 of title 49, United States Code, title V of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (Public Law 102-588) is the common source for that material and the material restated in chapter 505 of title 51, United States Code.

Based on the close conceptual relationship of the material, it became clear as the bill to enact title 51, United States Code, was being prepared, that provisions previously found in chapters 701 and 703 of title 49, United States Code, were better suited -- actually belonged -- in subtitle V, Programs Targeting Commercial Opportunities, of the new title.

#### *Restatement – the conventional method*

The conventional method by which a new positive law title of the United States Code is created is through restatement. Provisions from Acts that were previously codified in a non-positive law title of the United States Code are repealed, and a restatement of the provisions is enacted in the form of a new positive law title of the United States Code. That process is the “normal,” so to speak, method. However, it is not the only method.

#### *Transfer – used in lieu of restatement*

As the bill to enact the new title 51, United States Code, was being prepared, the decision was made to incorporate the two chapters from title 49, United States Code. But title 49, United States Code, was, itself, already a positive law title. The two chapters coming from title 49, United States Code, did not need to be repealed and restated in order to become part of a positive law title of the United States Code. They already were part of a positive law title of the United States Code. For these two chapters, the only required action was to transfer and renumber the provisions so as to fit into the enumeration scheme being established for subtitle V of title 51, United States Code.

*Section 4(d) of Public Law 111-314*

Section 4(d) of Public Law 111-314<sup>56</sup> carries out the necessary actions. Paragraph (1) makes necessary technical amendments in title 49, United States Code. Paragraph (2) renumbers and transfers the chapters as a whole. In order to maintain accuracy and clarity, the individual sections are renumbered one at a time in lettered subparagraphs within paragraph (3) and paragraph (4). Cross references are updated by paragraphs (5), (6), and (8). Paragraph (7) adds the necessary items to the title-wide table of contents at the beginning of title 51, United States Code.

*Committee jurisdiction not affected*

There were concerns expressed in some quarters that moving provisions from title 49, United States Code, to title 51, United States Code, might somehow alter the jurisdiction of certain congressional committees. Such concerns were entirely baseless, but committee jurisdiction is a highly sensitive area, breeding extreme caution and a tendency to fiercely guard borders and boundaries.

In fact, the mere positioning of provisions in the United States Code cannot rightfully be taken to indicate anything at all about committee jurisdiction. In a memorandum dated February 14, 2006, the Congressional Research Service explained the matter as follows:

*The U.S. Code and Subject Matter*

In the process of positive law reenactment, a provision may be reclassified to a different section or, on occasion, to an entirely different title of the Code. Because the United States Code is a subject matter arrangement of laws, questions have occasionally been raised whether this action may alter the original judgment as to the appropriate subject classification of the provision. The question at issue in this contention is whether the subject matter shift could influence the Parlia-

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<sup>56</sup> 124 Stat. 3440.

mentarian's determination of the appropriate committee of jurisdiction for referral of subsequent legislation amending the Code provision.

Reclassification does nothing to alter the substance of a Code section. Positive law codification addresses the organizational structure of statutory material. Provisions closely related by subject, enacted many years apart, may be scattered in different places in the United States Code. Recodification affords an opportunity to regroup these provisions in a more logical arrangement, but does not affect the substance of the law.

Significantly, the scholarly literature on parliamentary procedure is apparently devoid of any suggestion that the location of a provision within the U.S. Code has any impact or jurisdiction and referral. Formal House precedents are similarly silent on the matter.

A recent inquiry on the Senate floor, however, is squarely on point. On August 1, 2002, a parliamentary inquiry was raised during the consideration of a bill to enact Title 40 into positive law (H.R. 2068):

“Mr. REID. In the opinion of the Chair, does the enactment into positive law of a title of the United States Code, without substantive change, affect the subsequent referral of legislation under Senate rule XXV?”

“The PRESIDING OFFICER. It does not.”

The authoritativeness of this pronouncement is rooted in the Law Revision Counsel's statutory mandate:

“To prepare, and submit to the Committee on the Judiciary one title at a time, a complete compilation, restatement, and revision of the general and permanent laws of the United States which conforms to the understood policy, intent, and purpose of the Congress in the original enactments...” (emphasis added). 2 U.S.C. 285b.

This principle is frequently reiterated in report language accompanying positive law reenactments:

“To restate these various provisions of law as a cohesive unit, it is necessary to make changes in organization, style, and

terminology. These changes are not intended, however, to lead to changes in result, and therefore they should not impair the precedent value of earlier judicial decisions or other interpretations.”

#### CONCLUSION

Despite these unequivocal declarations misapprehensions may still arise. In committee reports, hearings or other public statements, congressional committees may sometimes characterize their jurisdiction in terms of particular titles of the U.S. Code. These statements are a convenient way to describe a committee’s jurisdiction in general terms, similar to how jurisdiction may be expressed in terms of executive branch agencies. Jurisdiction, however, remains governed by the language of House Rule X and Senate Rule XXV, and such pronouncements may give rise to the misconception that placement in the Code has a direct effect on committee jurisdiction and referral decisions. More accurately stated, a committee has jurisdiction over a title of the Code only insofar as the jurisdictional claim is supported by the substance of the underlying statutes that are codified in that title.

There is no one-to-one correspondence between a title of the Code and the jurisdiction of any committee of the House or Senate. A particular title of the Code may be composed of a panoply of statutory provisions emanating from several different committees of jurisdiction, or alternatively, the bulk of the laws classified in a single title may be within the purview of a single committee. In either case, the Parliamentarian will look to the referral precedents of the individual underlying statutes in order to make subsequent referral decisions. Subsequent reordering of a provision of law within a title of the Code, or reclassification of a provision to an entirely different title of the Code would not alter the basis for the Parliamentarians’ referral analysis.

## PART VII-TRANSITIONAL ISSUES

*In general*

The transitional and savings provisions enacted in section 5 of Public Law 111-314 are not merely technical niceties. To the contrary, they are vital and critically important to the Act's proper operation. Note that special definitions are enacted, which apply only to section 5. Section 5(a)(1) defines "source provision" as "a provision of law that is replaced by a title 51 provision." Under section 5(a)(2), the term "title 51 provision" means a provision of title 51, United States Code, that is enacted by section 3 of Public Law 111-314.

*Cutoff date*

Section 5(b) of Public Law 111-314 sets a "cutoff date." There is always a lag between the point in time when the Office of the Law Revision Counsel completes work on a positive law codification bill and delivers it to the Committee on the Judiciary for introduction in the House of Representatives, and the point in time when the bill is finally enacted into law. Sometimes that time lag can be significant. Therefore, it is necessary to set the currency of a positive law via a "cutoff date" provision. In the case of Public Law 111-314, the cutoff date is set as July 1, 2009. Although the bill was not enacted until December 18, 2010, it was finalized much earlier, and takes into express account only laws enacted through the cutoff date of July 1, 2009. Therefore, section 5(b) provides that: "If a law enacted after that date amends or repeals a source provision, that law is deemed to amend or repeal, as the case may be, the corresponding title 51 provision. If a law enacted after that date is otherwise inconsistent with a title 51 provision or a provision of this Act, that law supersedes the title 51 provision or provision of this Act to the extent of the inconsistency."

*Original date of enactment unchanged*

Section 5(c) of Public Law 111-314 provides that: "For purposes of determining whether one provision of law supersedes

another based on enactment later in time, a title 51 provision is deemed to have been enacted on the date of enactment of the corresponding source provision.”

### *References*

Section 5(d) provides that: “A reference to a title 51 provision is deemed to refer to the corresponding source provision.” Section 5(e) provides that: “A reference to a source provision, including a reference in a regulation, order, or other law, is deemed to refer to the corresponding title 51 provision.”

### *Special savings provisions*

Section 5(f) provides that: “A regulation, order, or other administrative action in effect under a source provision continues in effect under the corresponding title 51 provision.”

Section 5(g) provides that: “An action taken or an offense committed under a source provision is deemed to have been taken or committed under the corresponding title 51 provision.”

### *Repeals*

The underlying source law provisions are obsolete once the restatement in title 51, United States Code, is enacted. To avoid any confusion, the underlying source law provisions are explicitly repealed by section 6 of Public Law 111-314. In addition, certain obsolete provisions are also repealed.

### *Follow-on bill*

In order to capture and incorporate recent enactments (enactments after the cutoff date) a follow-on bill is prepared by the Office. When enacted, the follow-on bill explicitly updates the new title.

## PART VIII-TOOLS IN HOUSE REPORT NO. 111-325

A complete understanding of Public Law 111-314 is impossible without reference to the tools provided in House Report 111-325. See, in particular, the Disposition Table (appearing on

pages 5 to 23), the three-column source credit tables for each section of title 51, United States Code (appearing on pages 25 to 75), and the revision notes (appearing, if needed, under the three-column source credit tables. The revision notes explain changes made in the restatement of statutory text.

*Appendices*

Public Law 111-314

House Report 111-325



# ONE HALF CENTURY AND COUNTING: THE EVOLUTION OF U.S. NATIONAL SPACE LAW AND THREE LONG-TERM EMERGING ISSUES

Joanne Irene Gabrynowicz<sup>\*†‡</sup>

*[L]aws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlight-ened, as new discoveries are made, new truths discovered and manners and opinions change, with the change of circum-stances, institutions must advance also to keep pace with the times.*

—Thomas Jefferson<sup>1</sup>

## INTRODUCTION

A hallmark of United States national space law is that it tends to follow the development of space technology and geo-political events. Technology that develops into applications tends to catalyze law that addresses the commercialization of the technology. After the successful launch of *Sputnik I* on October 4, 1957, the United States addressed the legal void that then existed for space activities by promulgating its own national law and encouraging the global community to establish

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<sup>†</sup> This Article addresses U.S. civil and commercial space law and only addresses military and national security space law when it is relevant to the discussion of civil or commercial law. National security law is a large and complex body of law that goes well beyond the scope of this Article.

<sup>‡</sup> This Article was originally published in 4 HARV. L. & POL'Y REV. 405 (2010). For an excellent review of U.S. national security space law see R. Cargill Hall, *The Evolution of U.S. National Security Space Policy and Its Legal Foundations in the 20th Century*, 33 J. SPACE L. 1 (2007).

<sup>1</sup> Letter from Thomas Jefferson to Samuel Kercheval (July 12, 1816), in 10 THE WRITINGS OF THOMAS JEFFERSON: 1816–1826, at 42–43 (Paul Leicester Ford ed., 1899).

space law at the international level.<sup>2</sup> This resulted in the 1958 National Aeronautics and Space Act at the national level and in a treaty regime at the international level including, among others, the Outer Space Treaty. Since then, U.S. national space law has continued to develop, catalyzed in large part by technological and geopolitical advances. The historical significance of the early origins of U.S. space law is quite remarkable when one considers that even nations that have been major space farers for decades, like France and Japan, did not pass national space laws until 2008.<sup>3</sup>

This Article traces the evolution of U.S. space law from its inception in 1958 to the present and briefly presents some issues emerging for future consideration. It is divided into three main sections. Part I addresses the evolution of U.S. national space law from the 1950s and 1960s to the present and is divided into chronological subsections. The first subsection addresses the 1950s and the first goals of U.S. space law: to meet Cold War exigencies and to develop a legal and physical space infrastructure. The second subsection examines legislation of the 1980s, which introduced commerce as the third sector of space law alongside the civil and military sectors. The third subsection considers how the law developed in the 1980s and 1990s to meet the issues raised by the maturation and application of launch and remote sensing technologies. Regulatory refinement promulgated in the 2000s is the subject of the fourth subsection.

Part II contains a brief discussion of the 2009 codification of space law in the United States Code. Part III then identifies and briefly explores three emerging space law issues that have the potential to affect national space activities in the long term: space law unfolding at the individual state level, licensing of commercial orbital flights, and an evolving definition of the term “commercial.”

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<sup>2</sup> See WALTER A. MCDUGALL, . . . THE HEAVENS AND THE EARTH: POLITICAL HISTORY OF THE SPACE AGE 6–8 (The Johns Hopkins Univ. Press 1997) (1985).

<sup>3</sup> See Law No. 2008-518 of June 3, 2008, 34 J. SPACE L. 435 (2008); Setsuko Aoki, *Current Status and Recent Developments in Japan's National Space Law and Its Relevance to Pacific Rim Space Law and Activities*, 35 J. SPACE L. 362, 365 (2009).

## I. 1958–2008

## A. 1958 and 1962: Institutional and Legal Space Infrastructure

## 1. The 1958 National Aeronautics and Space Act

Early space activities were catalyzed by geopolitical events. They were not identified as a stand-alone policy goal. It was the successful launch of *Sputnik I* that sent the United States on a search for a dramatic and effective demonstration to prove that U.S. technology was superior to the Soviet Union's. *Sputnik I*, the world's first artificial satellite, shocked the world. *Sputnik*, (Russian for "traveling companion") was the size of a basketball and weighed 183 pounds.<sup>4</sup> The fear caused by *Sputnik I* may be hard to understand in today's internet era. But for the World War II-weary world, it represented the potential for atom bombs to rain down unexpectedly from space anywhere on Earth. For the United States, it also represented the first credible potential attack on national territory since the War of 1812. This threat prompted the U.S. Congress to create a legal and institutional infrastructure that would enable the United States to respond to *Sputnik*. As a result, it passed, and President Eisenhower signed, the National Aeronautics and Space Act of 1958 (NAS Act).<sup>5</sup>

The new law established the means to respond to the threat *Sputnik* represented: the U.S. civil space program. It also established the institution responsible for executing the response, the National Aeronautics and Space Administration (NASA). NASA began developing a program for human space exploration on October 1, 1958, almost exactly one year after *Sputnik I* was launched.<sup>6</sup> Three years later, in 1961, the Kennedy Administration gave NASA its first mission: to land, within a decade, a human on the Moon and return him safely. Since then, both the

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<sup>4</sup> DEBRAH D. STINE, CONG. RESEARCH SERV., U.S. CIVILIAN SPACE POLICY PRIORITIES: REFLECTIONS 50 YEARS AFTER SPUTNIK (2009), available at <http://www.fas.org/sgp/crs/space/RL34263.PDF>.

<sup>5</sup> National Aeronautics and Space Act of 1958, Pub. L. No. 85-568, 72 Stat. 426 (codified as amended at 42 U.S.C. §§ 2451–84 (2006)).

<sup>6</sup> STINE, *supra* note 4, at 4.

nation's space activities and the law that authorizes them have continued to evolve as required by politics and technology.

Over the years, the NAS Act has become an amalgam of many bodies of law including contract, tort, international, insurance and indemnification, and intellectual property, among others. It also addresses a wide variety of subjects ranging from the philosophical and scientific (such as determining the extent of life in the universe<sup>7</sup>) to space-specific activities (like the *International Space Station*<sup>8</sup>) to the terrestrially pragmatic (like appropriations<sup>9</sup>). More recently, the mechanisms of the Act have expanded to include innovations like awards and competitive prizes to stimulate research and development.<sup>10</sup>

However, in the beginning a number of basic, major decisions had to be made. Two of the most important issues were the purpose of the newly established space program and the appropriate relationship between the civil and military programs. Regarding the first decision, the purpose described in the NAS Act tracks the diplomatic strategy taken by the United States in the United Nations to develop new law to prevent the U.S.-U.S.S.R. rivalry from extending into space.<sup>11</sup> Therefore Congress declared that "it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind."<sup>12</sup>

This language has both precedential and strategic significance. The legal term of art "peaceful purposes" emerged almost simultaneously in the NAS Act and in the historic UN General Assembly resolutions relating to outer space that became the foundation for the eventual space law treaty regime.<sup>13</sup> Regarding strategy, when *Sputnik I* orbited the Earth, policymakers and lawmakers believed space could only be used for war making. According to Eilene Galloway, the congressional researcher re-

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<sup>7</sup> See 42 U.S.C. § 2451.

<sup>8</sup> See *id.*

<sup>9</sup> See *id.* § 2459f.

<sup>10</sup> See *id.* § 2459f-1.

<sup>11</sup> MCDUGALL, *supra* note 2, at 173-74, 179.

<sup>12</sup> 42 U.S.C. § 2451(a).

<sup>13</sup> *E.g.*, Question of the Peaceful Use of Outer Space, G.A. Res. 1348 (XIII), at 5-6 (Dec. 13, 1958).

cruited by then-Senator Lyndon B. Johnson to help create U.S. space law,<sup>14</sup> it was only when scientists told lawmakers that space could also be used for “purposes other than war: communications, weather, medicine” and “instead of fear of war, we could be motivated by the hope for peace”<sup>15</sup> that space law was able to move space activities in an entirely new direction. Lawmakers codified this delicate balance between fear and hope when they declared that space activities *should be* devoted to peaceful purposes rather than declaring that they *shall be*. Without knowing the full extent of the Soviet Union’s space capabilities, Congress gave itself room to address the unknown as it unfolded by advocating rather than requiring “peaceful purposes.”

Congress addressed the second basic question, the appropriate relationship between the civil and military space programs, when it declared:

Aeronautical and space activities . . . shall be the responsibility of, and shall be directed by, a civilian agency . . . except activities peculiar to or primarily associated with development of weapons systems, military operations, or the defense of the United States . . . shall be the responsibility of, and shall be directed by, the Department of Defense.<sup>16</sup>

The characteristics of this relationship were strongly influenced by the former Supreme Allied Commander, President Dwight D. Eisenhower. He was determined that the U.S. space program should be the opposite of the overtly militaristic Soviet

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<sup>14</sup> Press Release, NASA, Eilene Galloway, the Woman Who Helped Create NASA, Dies at Age 102 (May 4, 2009), available at [http://www.nasa.gov/topics/history/features/galloway\\_obit.html](http://www.nasa.gov/topics/history/features/galloway_obit.html). Eilene M. Galloway was the Founding Mother of U.S. national space law and a cofounder of international space law. There is simply no room here to even begin to discuss her contribution to space law and preventing nuclear weapons in space. The reader is strongly urged to learn more about Mrs. Galloway and her contribution. See NASA, The Woman Who Helped Create NASA, [http://www.nasa.gov/topics/history/galloway\\_space\\_act.html](http://www.nasa.gov/topics/history/galloway_space_act.html) (July 28, 2008).

<sup>15</sup> Video: Happy 100th to the Woman Who Helped Create NASA, [http://www.nasa.gov/vision/earth/everydaylife/galloway\\_100.html](http://www.nasa.gov/vision/earth/everydaylife/galloway_100.html) (last visited Apr. 30, 2011).

<sup>16</sup> 42 U.S.C. § 2451(b).

program and that it would not create a national deficit.<sup>17</sup> Therefore, Eisenhower resisted popular sentiment and military pressure and endeavored to place the national space program under civil control. By executive order, Eisenhower transferred all space-related civilian personnel, property, and funds not primarily related to military operations and weapon system development from the Department of Defense (DoD) to NASA.<sup>18</sup>

The civil-military relationship has ebbed and flowed over the years, with the relative closeness of purpose waxing and waning as political forces changed. It continues to be a source of tension for both NASA and DoD.<sup>19</sup> Nonetheless, NASA remains a civil agency committed to civil missions.

## 2. The 1962 Commercial Communications Satellite Act

The Communications Satellite Act of 1962 (Comsat Act)<sup>20</sup> began as a Cold War tool and contained a strategy that became the legal foundation for the United States' and the world's most lucrative space-based industry: telecommunications. The Act embodied both Cold War political and humanitarian motives. It was intended to influence what President John F. Kennedy called "emerging democracies" by providing for services for less economically developed countries.

The Comsat Act authorized U.S. participation in the development and operation of Intelsat, an international communications satellite organization and system.<sup>21</sup> Intelsat members agreed to make effective and equitable use of space communications satellites. Under this agreement the electromagnetic spectrum was considered to be a scarce resource that should be made available to all nations on a global and nondiscriminatory basis. Intelsat would provide a legal, administrative, and tech-

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<sup>17</sup> ROGER HANDBERG, SEEKING NEW WORLD VISTAS: THE MILITARIZATION OF SPACE 44–57 (2000).

<sup>18</sup> Exec. Order No. 10,783, 3 C.F.R. 422 (1954–1958).

<sup>19</sup> See, e.g., Joanne Irene Gabrynowicz, *The Perils of Landsat from Grassroots to Globalization: A Comprehensive Review of US Remote Sensing Law With a Few Thoughts for the Future*, 6 CHI. J. INT'L L. 45, 65–66 (2005).

<sup>20</sup> Communications Satellite Act of 1962, Pub. L. No. 87-624, 76 Stat. 419 (codified as amended at 47 U.S.C. §§ 701–69 (Supp. II 2008)).

<sup>21</sup> See Communications Satellite Act of 1962 § 102(a), 76 Stat. at 419.

nological system under which participating countries could access portions of the spectrum for use within their nations. As a condition of membership, member nations agreed not to compete with Intelsat, making it a legal global monopoly.

Satellite communications quickly became an enormous commercial success, and technology enabled more efficient use of both the electromagnetic spectrum and the slots in geosynchronous orbit where the communications satellites are placed. In the 1990s, political pressure to break up national and international communications monopolies and to increase the role of the private sector led to the substantial restructuring of Intelsat from 2000 to 2005.<sup>22</sup> Controversy currently exists over whether this new form is a viable and equitable one.<sup>23</sup> Satellite communications have spawned a dynamic and complex body of law at the national and international level, a discussion of which is beyond the scope of this Article. Suffice it to say, like all other U.S. space-based activities and law, it began in the Cold War and has transformed to meet the needs of the globalization era.

#### B. 1980s: Commerce

Once the legislative and executive branches determined the relative roles of NASA and DoD, the civil space program proceeded to make history with the *Mercury*, *Gemini*, and *Apollo* programs. Together, on July 20, 1969, they resulted in the epic landing of the first humans on another celestial body, the Moon. The post-*Apollo* program continued with Skylab, the *Apollo-Soyuz* Test Program, and the *Space Shuttle*, which was declared operational in 1982. All of these missions relied on the U.S. private sector to provide the government with goods and services on a contractual basis.

Around this time, the Reagan Administration ushered in an era driven by the conviction that the private sector could con-

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<sup>22</sup> See Open-market Reorganization for the Betterment of International Telecommunications Act (Orbit Act), Pub. L. No. 106-108, 114 Stat. 48 (2000) (codified at 47 U.S.C. §§ 761-69).

<sup>23</sup> See generally Kenneth Katkin, *Communication Breakdown?: The Future of Global Connectivity After the Privatization of INTELSAT*, 38 VAND. J. TRANSNAT'L L. 1323 (2005).

duct many government activities more efficiently and more appropriately than the public sector. Further, the mature technology could now be subjected to market forces, and the private sector could use those forces to make space technology and its products available to public, nongovernmental customers. The Reagan Administration began to seek proposals for transferring various space assets and activities out of the government and into the private sector.<sup>24</sup> These proposals led to laws that were passed on the premise that launch and remote sensing technologies had matured to a point where government participation was no longer, or nearly no longer, needed.

Congress, in an attempt to gain control of a process begun by the executive branch, also began to seek opportunities to commercialize or privatize space activities. In 1984, Congress amended the Declaration of Policy and Purpose section of the NAS Act to state: "Congress declares that the general welfare of the United States requires that [NASA] . . . seek and encourage, to the maximum extent possible, the fullest commercial use of space."<sup>25</sup> Thus, commercial space joined civil and military space to become the third legally recognized sector of U.S. space activities.

In addition to this expanded statement of policy and purpose, the same Congress, through the same committees, also passed the 1984 Commercial Space Launch Act (Launch Act)<sup>26</sup> and the Land Remote-Sensing Commercialization Act of 1984 (Commercialization Act).<sup>27</sup> It was not long, however, before both laws were amended to reflect changes driven by intertwined politics, economics, and technology.

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<sup>24</sup> See, e.g., Gabrynowicz, *supra* note 19, at 53.

<sup>25</sup> National Aeronautics and Space Appropriations Act of 1985, Pub. L. No. 98-361, 98 Stat. 426 (1984) (codified at 42 U.S.C. § 2451(c) (2006)).

<sup>26</sup> Commercial Space Launch Act, Pub. L. No. 98-575, 98 Stat. 3055 (1984) (codified as amended at 49 U.S.C. § 70101 (Supp. II 2008)).

<sup>27</sup> Land Remote-Sensing Commercialization Act of 1984, Pub. L. No. 98-365, 98 Stat. 451 (codified at 15 U.S.C. § 4201 (repealed 1992)) (regulating the satellite observation of land masses).

C. 1980s and 1990s: Applications—Launch and Remote Sensing Technology

1. Launch Law

Congress had two main objectives when it passed the Launch Act in 1984: to encourage, facilitate, and promote commercial space launches by the private sector; and to develop licensing requirements through consultation with other government agencies.<sup>28</sup> It also made a single federal agency, the Department of Transportation (DoT), responsible for regulating the industry. The Launch Act and subsequent regulations addressed three substantive areas: licensing and regulation, liability insurance requirements, and access to government launch facilities by private launch companies.

Before the passage of the Launch Act, it was U.S. national policy that all civil, military, and commercial payloads would be launched by the *Shuttle*. There were a variety of reasons for this policy, but essentially the Nixon Administration expected the *Shuttle* program to attract the important electoral votes of California, Florida, and Texas—states that are home to large space centers.<sup>29</sup> National policymakers intended to make the *Shuttle* an all-purpose space transportation vehicle with a successful record of delivering payloads to orbit. This policy effectively made it illegal to employ single-use rockets, known as expendable launch vehicles (ELVs). So the Launch Act was intended to permit the use of ELVs on a commercial basis. However, the tragic loss of the *Challenger* in 1986 caused the Reagan Administration to reconsider U.S. national launch policy and to prohibit NASA from launching commercial payloads. The new policy later became law in the NASA Authorization Act for U.S. federal fiscal year 1991.<sup>30</sup> This law limits the *Shuttle* to activi-

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<sup>28</sup> Commercial Space Launch Act § 3, 98 Stat. at 3055–56 (codified at 49 U.S.C. § 70101(b)).

<sup>29</sup> R. MICHAEL GORDON, THE SPACE SHUTTLE PROGRAM: HOW NASA LOST ITS WAY 19 (2008).

<sup>30</sup> National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991, Pub. L. No. 101-611, 104 Stat. 3188 (1990) (codified at 42 U.S.C. § 2464a(a)).

ties that require either a human presence or unique capabilities that only the *Shuttle* can provide.

The separation of civil, military, and commercial launches and an increased emphasis on commercialization has resulted in a series of changes in space transportation law since 1986. In these years, launches may have become more common commercial activities, but they still involve immensely expensive technology, high-powered explosives, and range-safety requirements. A launch gone wrong has the potential to cause extremely large amounts of human injury and property damage. Further, all launch facilities in the United States are government built, funded, maintained, and operated. Private sector launches occur from Cape Canaveral in Florida, Vandenberg Air Force Base in California (DoD), and the Kennedy Space Flight Center in Florida (NASA). Therefore, a major feature of recent legislative changes has been the articulation of the relationship between the public and private sectors as it relates to the risks inherent in launch activities.

The fact that the U.S. private sector must rely on government facilities to provide its launch services and products is part of an ongoing trans-Atlantic debate between U.S. companies and their European counterparts. This issue will be discussed in greater detail below, but in short, U.S. aerospace companies continue to cite the commercial activities of foreign governments and their use of industrial policy as reasons for continuing the favorable U.S. government-industry risk-sharing regime contained in U.S. launch law. Since most western industrialized nations, including Canada and Japan, follow a European model for aerospace funding systems and policies, it is reasonable to expect that Congress will extend the U.S. risk-sharing regime each time it is up for review.

In 1988, Congress substantially amended the Launch Act to further define the commercial launch legal regime.<sup>31</sup> The 1988 Amendments authorized the U.S. government to indemnify commercial space transportation for third-party liability and required the industry to obtain insurance up to a "maximum

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<sup>31</sup> Commercial Space Launch Act Amendments of 1988, Pub. L. No. 100-657, 102 Stat. 3900 (codified as amended at 49 U.S.C. § 70112).

probable loss” standard for each launch. These and other industry-government risk sharing provisions were in effect through 1993 and were subsequently extended through 2004. The 2004 Commercial Space Launch Amendments Act,<sup>32</sup> discussed below, also required that DoT study whether or not the indemnification of commercial expendable launch vehicles ought to be continued. Over the decade, Congress twice extended indemnification for third-party liability, first until 2009, and currently through 2012.<sup>33</sup>

In the 1990s, the *Shuttle* became NASA’s most expensive activity and threatened to consume NASA’s budget.<sup>34</sup> As a result, *Shuttle* operations were privatized in 1996 with a ten-year Space Program Operations Contract between NASA and United Space Alliance (USA), a limited liability company currently owned equally by the Boeing Company and the Lockheed Martin Space Operations Company.<sup>35</sup> NASA and USA entered into a second contract in 2006, which establishes USA as NASA’s primary industry partner in human space operations, including for the *Shuttle* and the *International Space Station (ISS)*.<sup>36</sup>

The most recent major change in the law occurred in 2004 with the passage of the Commercial Space Launch Amendments Act of 2004.<sup>37</sup> This law reflects a belief in a commercial market for “space tourism”: flights into suborbital space for individuals willing to pay \$200,000 or more for one trip. The 2004 law authorizes private and commercial passengers to engage in space travel and establishes the licensing of private sector spacecraft to bring paying passengers on suborbital flights.

<sup>32</sup> Commercial Space Launch Amendments Act of 2004, Pub. L. No. 108-492, 118 Stat. 3974 (codified at 49 U.S.C. §§ 70101–21).

<sup>33</sup> An Act to Extend the Commercial Space Transportation Liability Regime, Pub. L. No. 111-125, 123 Stat. 3486 (2009).

<sup>34</sup> See generally U.S. GEN. ACCOUNTING OFFICE, GAO/NAIAD-95-118, SPACE SHUTTLE: NASA MUST REDUCE COSTS FURTHER TO OPERATE WITHIN FUTURE PROJECTED FUNDS (1995), available at <http://archive.gao.gov/t2pbat1/154853.pdf>.

<sup>35</sup> United Space Alliance, USA History, <http://www.unitedspacealliance.com/about/history.asp> (last visited Apr. 30, 2011).

<sup>36</sup> *Id.*

<sup>37</sup> 49 U.S.C. §§ 70101–21

## 2. Remote Sensing Law

Remote sensing is the imaging of the Earth and its atmosphere from a distance. The first civil remote sensing satellite, *Landsat 1*, was launched in 1972. Since then, there have been four distinct phases of U.S. remote sensing law.<sup>38</sup> In all of these phases, the core issue that has driven the law's development is the proper institutionalization of a technology that was funded with tax dollars and developed by the government, but which also has clear benefits for both the public and private sectors. For weather satellites, this determination has been clear: they are a public good that shall not be subject to commercialization.<sup>39</sup> However, for land-imaging satellites, the determination has been tortured and dynamic for three main reasons: human nature, an institutional lag between Cold War and globalization era policies, and technological development in the transition from the industrial age to the information age.<sup>40</sup>

Regarding human nature, land is where humans live, work, play, and address all kinds of conflicts. Imaging the land therefore raises privacy, security, and economic issues that are less problematic when imaging oceans and the atmosphere. These aspects of land imaging encouraged Congress to ask in many sessions whether the institutional home for land imaging was more appropriately public or private, national or international.

In the 1970s, familiar Cold War rationales encouraged the United States to embark upon civil remote sensing.<sup>41</sup> Just like with the *Apollo* program, the United States aimed to use its space technology to persuade nations to align with it in the then-bipolar world. Policymakers focused on the actual satellites, and they gave little thought to how the data would be stored, processed, and used.

Finally, the ability to understand and use image-processing technology lagged far behind the ability to understand, launch,

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<sup>38</sup> See Gabrynowicz, *supra* note 19, at 50–64

<sup>39</sup> 15 U.S.C. § 5671 (Supp. II 2008).

<sup>40</sup> For a fuller discussion of this process, see Joanne Irene Gabrynowicz, *Space Law: Its Cold War Origins and Challenges in the Era of Globalization*, 37 SUFFOLK U. L. REV. 1041 (2004).

<sup>41</sup> Gabrynowicz, *supra* note 19, at 48.

and orbit a remote sensing satellite. Building and launching satellites is an industrial age “metal-bending” activity with which the U.S. aerospace industry had decades of experience. The seemingly more esoteric requirements of developing, marketing, and maintaining information-based technological products were beyond its ken. Initially, satellite-building companies bid for remote-sensing commercialization contracts as a means of selling satellites to the federal government. They thought only in terms of selling raw data, not information products. It was not until the 1990s when information-age industries could make dramatically increased computing power commercially available at concomitantly decreased costs that ground-based image processing began to look viable outside of government agencies.

The events that followed were analogous to a football game in which the opposing sides try to gain control of the ball before the end of a quarter. In this analogy, the teams were public federal agencies and private companies, and the ball was congressional authorization to process and make available to the public land satellite imagery and data. Each side asserted that it was the most appropriate entity to do so. Which side got the ball depended on the latest iteration of software technology and the last team who influenced Congress before the quarter, that is, session, ended.

From 1972 to 1984 no specific regulatory regime existed despite numerous attempts by Congress to enact a remote sensing law. Then, in 1984, the Commercialization Act<sup>42</sup> was passed to commercialize the *Landsat* system, a federally funded series of Earth-observing satellites that had been in operation since 1972. This law provided for a three-phase process that began by privatizing the then-existing system through a government contract with a private company that would operate it. The second and third phases envisioned a privately built and funded system that would sell data to the federal government at first, but eventually would become a robust commercial environment with a number of thriving competitive companies that did not need

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<sup>42</sup> Land Remote-Sensing Commercialization Act of 1984, Pub. L. No. 98-365, 98 Stat. 451 (1984) (codified at 15 U.S.C. § 4201 (repealed 1992)).

government assistance. Because of the reasons discussed above, reality never progressed beyond the first phase. Therefore, driven by failed *Landsat* commercialization, the high cost of its data, and the reprioritization of national scientific goals, the 1984 law was replaced with the 1992 Land Remote Sensing Policy Act (Policy Act).<sup>43</sup>

The Policy Act recognizes that *Landsat* data has value to researchers, educators, and nonprofit public interest entities. It returned the *Landsat* system to the public sector and set a minimum standard of making its unenhanced data available to U.S. government-supported researchers and agencies. The long-term objective goal was to make *Landsat* data fully available to all users at the cost of fulfilling user requests. This goal was achieved and surpassed when, in 2005, *Landsat* data was made available to all at no cost.<sup>44</sup> Thus, the Policy Act recognizes the commercial value of land remote sensing, but also acknowledges that commercialization of the *Landsat* program is unachievable within the foreseeable future and therefore is an inappropriate near-term national goal. Currently, medium-resolution *Landsat* data primarily benefits research concerning forestry, land management, and climate change—primarily public sector activities.

Attempts are underway to commercialize declassified high-resolution satellite technology that once was used only in government intelligence satellites. Two federally licensed private system operators currently use this technology, but they rely heavily on the federal government as an anchor client, each having a \$500 million government contract.<sup>45</sup> A new generation of follow-on satellites is in development, and at least one company claims it will be “independent of any formal U.S. Govern-

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<sup>43</sup> Land Remote Sensing Policy Act of 1992, Pub. L. No. 102-555, 106 Stat. 4163 (codified as amended at 15 U.S.C. §§ 5601–72).

<sup>44</sup> Press Release, U.S. Geological Survey, Orthorectified Landsat Digital Data Now Available From USGS (Dec. 27, 2005), available at <http://www.usgs.gov/newsroom/article.asp?ID=1425>.

<sup>45</sup> Press Release, GeoEye, ORBIMAGE Selected as NGA’s Second NextView Provider (Sept. 20, 2004), available at <http://geoeye.mediaroom.com/index.php?s=43&item=76>; Press Release, DigitalGlobe, DigitalGlobe Awarded in Excess of \$500 Million NextView Contract (Sept. 30, 2003), available at [www.media.digitalglobe.com/index.php?s=43&item=98](http://www.media.digitalglobe.com/index.php?s=43&item=98).

ment commitment as an anchor customer.”<sup>46</sup> The success of these companies will largely depend on their ability to diversify their clientele and on continuing national security sensitivities.

#### *D. 2000s: Regulatory Refinement*

The first decade of the 2000s has been a time of regulatory refinement across all areas of U.S. national space law. To be sure, regulations have existed from space law’s inception. However, private space activities and the United States’ participation in some international activities have resulted in more detailed and revised regulations in the 2000s due to agencies’ growing experience and the lengthy, politically charged regulatory process. This section briefly addresses regulations for remote sensing, commercial human spaceflight, and U.S. participation in the *ISS*.

##### 1. Remote Sensing

The U.S. Commerce Department’s National Oceanic and Atmospheric Administration is responsible for licensing and regulating private remote-sensing systems.<sup>47</sup> The first regulations were issued in 2000 and revised in 2006.<sup>48</sup> They are comprehensive and address all aspects of ground-based and space-based activities, including license terms and conditions, annual operational auditing and recordkeeping, a monitoring and compliance program, and notification of foreign agreements. Two issues concerning these regulations have attracted the most interest from observers. First, who can acquire the data generated by these systems? Second, can the government prevent a licensed operator from acquiring or distributing data in the first place?

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<sup>46</sup> Colo. Space Coalition, *GeoEye Contract With ITT Begins Procurement of GeoEye-2 Satellite*, <http://www.spacecolorado.org/news/GeoEye-2.html> (last visited Apr. 30, 2011).

<sup>47</sup> See 15 U.S.C. § 5621 (Supp. II 2008).

<sup>48</sup> Final Rule on the Licensing of Private Land Remote-Sensing Space Systems, 15 C.F.R. §§ 960–960.15 (2009).

As to the first issue, the Commercialization Act required that a policy called nondiscriminatory access be applied to both public and private operators. Nondiscriminatory access, like the rest of remote-sensing law, has a long and complex history.<sup>49</sup> It was originally a U.S. foreign policy intended to address the fears of economic and military espionage felt by nations whose territories could be imaged. Therefore, the Commercialization Act required that all data from *Landsat* and from federally licensed operators be made available to all who requested it; no one could be denied. However, the Policy Act modified the nondiscriminatory access policy, and now private operators are only required to make their data available to nations that request the imagery of their own territory.<sup>50</sup> Private operators can deny their data to anyone else for business reasons and any national security, foreign policy, or other reasons that are contained in the terms of their licenses. The nondiscriminatory access policy still applies in varying degrees to all data, depending on the amount of government funding involved.

The answer to observers' second question is yes: the government can prevent a licensed operator from acquiring or distributing data. This issue is addressed in a 2000 interagency Memorandum of Understanding Concerning the Licensing of Private Remote Sensing Satellite Systems.<sup>51</sup> Normal commercial operations can be interrupted for national security or other national interests through a complex decision-making process called "shutter control," which may require a final determination by the President. Although the President did not become involved, after September 11, 2001, the federal government and a licensee entered into an exclusive contract that temporarily limited public access to imagery of Afghanistan and surround-

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<sup>49</sup> See generally Joanne Irene Gabrynowicz, *Defining Data Availability for Commercial Remote Sensing Systems Under United States Federal Law*, 23 ANNALS AIR & SPACE L. 93 (1998).

<sup>50</sup> See Land Remote Sensing Policy Act of 1992, Pub. L. No. 102-555, § 501, 106 Stat. 4163, 4176 (codified as amended at 15 U.S.C. § 5651 (Supp. II 2008)).

<sup>51</sup> Fact Sheet Regarding the Memorandum of Understanding Concerning the Licensing of Private Remote Sensing Satellite Systems, 15 C.F.R. § 960 app. 2 (2000).

ing areas.<sup>52</sup> At the time, many observers in the space community said that this agreement avoided regulatory shutter control, so they dubbed the agreement “checkbook shutter control.”<sup>53</sup> Observers on the left accepted this new term because they believed that regulatory shutter control undermined the important principle of government transparency. Observers on the right accepted the term because they thought the regulation unduly interfered with private sector business interests. Both said regulatory shutter control never happened.

However, a close reading of the regulation shows that both sides are wrong: regulatory shutter control was successfully implemented and all but a few images were released to the public as soon as possible, giving rise to a presumption of openness. The regulation specifically provides that in order to limit licensees’ activities for national security reasons, licensees “shall, on request, provide unenhanced restricted images on a commercial basis exclusively to the U.S. Government.”<sup>54</sup> The result was an appropriate balance of the practical issues of national security and the presumptions of a free market and government transparency in an open society. In an era of sharply divided ideological politics, it is not surprising that disputes like this have made their way to space issues. Unfortunately, in this case, the balanced execution of law in a difficult situation that is likely to occur again has been lost in the fray.

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<sup>52</sup> Michael R. Gordon, *A Nation Challenged: Public Information; Pentagon Corners Out-put of Special Afghan Images*, N.Y. TIMES, Oct. 19, 2001, at B2.

<sup>53</sup> THE NAT’L REMOTE SENSING & SPACE LAW CTR., *THE REMOTE SENSING INDUSTRY: A CEO FORUM 76–77* (John F. Graham & Joanne Irene Gabrynowicz eds., 2002), available at <http://www.spacelaw.olemiss.edu/publications/ceoforum.pdf>; Jennifer LaFleur, *Government, Media Focus on Commercial Satellite Images*, NEWS MEDIA & LAW, Summer 2003, at 37, available at <http://www.rcfp.org/newsitems/index.php?i=6048>; Peter de Selding, *Blanket Space Imagery Purchases by U.S. Gov’t. Likely a Thing of the Past*, SPACE.COM, Oct. 16, 2002, [http://www.space.com/news/wsc\\_observation\\_1016.html](http://www.space.com/news/wsc_observation_1016.html) (on file with the Harvard Law School Library).

<sup>54</sup> Licensing of Private Land Remote-Sensing Space Systems, 15 C.F.R. § 960.11(b)(4) (2009).

## 2. Commercial Human Space Flight

Only three nations have successfully placed humans in space, all of whom have had the legal and professional status of “astronaut.” Astronauts are specifically selected and trained to achieve scientific, engineering, or political space goals. Like all professionals working for their national governments, they are also paid employees. But many people who cannot become astronauts have dreamt of traveling into space. This desire, coupled with increased attempts to commercialize other space technology applications, has encouraged some entrepreneurs to pursue businesses that can bring people into space on a commercial, for-profit basis.

Space tourism, as it is colloquially called, currently consists of a number of activities. They range from \$7,000 rides on a modified Boeing 727 that performs parabolic arcs to create a weightless environment, to \$20 million orbital trips.<sup>55</sup> Suborbital flights, though yet to occur, are the most well-known type of space tourism and are offered by a number of companies. Virgin Galactic, perhaps the most flamboyant of the companies, joined forces with Burt Rutan and Scaled Composites to “form a new aerospace production company to build a fleet of commercial sub-orbital spaceships and launch aircraft.”<sup>56</sup> In comparison, orbital opportunities are rare and require brokered agreements with government-funded facilities like the *ISS*. Russia has been the most active nation in this kind of tourist trip, but it recently announced that it would not be providing such opportunities for the foreseeable future because of *ISS* transportation needs.<sup>57</sup>

Against this exciting and dynamic backdrop remains the fact that “[d]espite tantalizing commercial possibilities, the long-term technological and commercial viability of commercial

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<sup>55</sup> See Zero G, Select Flight, <http://www.gozerog.com/index.cfm?fuseaction=reservations.welcome> (last visited Apr. 30, 2011); Space Adventures, Orbital Spaceflight, <http://spaceadventures.com/index.cfm?useaction=orbital.welcome> (last visited Apr. 30, 2011).

<sup>56</sup> Press Release, Scaled Composites, Branson and Rutan Form “The Spaceship Company” (July 27, 2005), available at [http://www.scaled.com/news/2005-07-27-branson\\_rutan\\_spaceship\\_company.htm](http://www.scaled.com/news/2005-07-27-branson_rutan_spaceship_company.htm).

<sup>57</sup> Dmitry Solovyov, *Russia Halts Space Tours as U.S. Retires Shuttle*, REUTERS, Mar. 3, 2010, <http://www.reuters.com/article/idUSTRE6223VF20100303>.

human space flight . . . remains to be seen. Among the factors contributing to the industry's ultimate success or failure will be the application of laws and the formulation of regulations governing the carriage of human beings into space.<sup>58</sup>

Federal regulations written after the passage of the Commercial Space Launch Act Amendments of 2004 require commercial suborbital flight operators to make several written informational disclosures in order to obtain the informed consent of customers, called "space flight participants" (SFPs).<sup>59</sup> "[SFPs] are excluded from indemnification eligibility under the 2004 Space Act and are not entitled to the benefits of liability insurance coverage."<sup>60</sup> And, because commercial suborbital human spaceflight technology lacks an established track record, it is still unclear what information operators must give SFPs so that they are "informed." What is clear, however, is that SFPs, not operators, bear the risks and must be so informed. "There is no doubt that Congress and the federal oversight agency are trying to establish a 'risk shifting' regime as between the SFP and the operator *if* adequate information is delivered from the operator to the SFP."<sup>61</sup> Further, because of SFPs' likely deep pockets, "it is not unreasonable to expect that a wealthy space flight participant would be named as a defendant in the event of damage claims brought by an injured third party."<sup>62</sup> Given this risk-shifting regime, it is crucial that suborbital space flight operators obtain the SFPs' informed consent—whatever that may be.

Finally, an interesting and important point about space tourism concerns the science upon which the commercial human spaceflight law is based. Current laws and regulations address only suborbital flight, that is trips during which ships leave Earth, go beyond air space to a very high altitude, and then re-

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<sup>58</sup> Timothy Robert Hughes & Esta Rosenberg, *Space Travel Law (and Politics): The Evolution of the Commercial Space Launch Amendments Act of 2004*, 31 J. SPACE L. 1, 3 (2005).

<sup>59</sup> 14 C.F.R. § 460.45 (2009).

<sup>60</sup> Hughes & Rosenberg, *supra* note 58, at 59.

<sup>61</sup> Tracey Knutson, *What Is "Informed Consent" for Space-Flight Participants in the Soon-to-Launch Space Tourism Industry?*, 33 J. SPACE L. 105, 108 (2007).

<sup>62</sup> Hughes & Rosenberg, *supra* note 58, at 59.

turn to Earth, but do not enter into an orbit around Earth. Based on distinctions in physics between the “lift” and “thrust” needed to accomplish such a trip, the law classifies commercial space tourism ships as rockets, not aircraft. It may be expected that as the industry matures, there will be some questions raised about this definition and whether the industry should be regulated by international aviation law and institutions rather than national space law.<sup>63</sup> However, for the foreseeable future the U.S. commercial space flight industry will be regulated by national space law.

### 3. International Space Station Code of Conduct

The laws governing the complex activities at the *ISS* demonstrate the interplay between national and international space law. The *ISS* generally is governed by international law as described in the *ISS* Intergovernmental Agreement (IGA).<sup>64</sup> However, policy decisions regarding participation in *ISS* activities are made at the national level by the individual partner countries, including the United States. As a more specific example, the IGA includes a Code of Conduct for the *ISS* crew that was developed and approved by the partner countries.<sup>65</sup> However, each partner retains jurisdiction and control over its personnel and station elements and therefore implements the Code at its own national level. In the United States, the Code has become part of the terms and conditions of the U.S. astronauts’ employment and applies to all NASA-provided persons, including federal employees, members of the armed services, U.S. citizens who are not federal employees, and foreign nation-

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<sup>63</sup> See, e.g., Ruwantissa Abeyratne, *ICAO’s Involvement in Outer Space Affairs—A Need for Closer Scrutiny?*, 30 J. SPACE L. 185 (2004).

<sup>64</sup> Agreement Among the Government of Canada, Governments of the Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of The United States of America Concerning Cooperation on the Civil International Space Station, art. 1, Jan. 29, 1998, State Dep’t No. 01-52, 2001 WL 679938.

<sup>65</sup> *Id.* art. 11.2.

als.<sup>66</sup> In this way, national and international laws are intricately intertwined.<sup>67</sup>

## II. 2009: CODIFICATION—THE BRIDGE FROM THE 20TH TO THE 21ST CENTURY

As the above discussion describes in an abridged manner, a substantial amount of U.S. national space law has been enacted over the past half century. All of it was passed after 1926, the year that United States Code was organized. Therefore, the Code contains no separate space law title. When each statute was written, it was placed in a Code title deemed relevant to the particular activities covered by the statute. Some of the provisions are in Title 15—Commerce and Trade, some in title 42—Public Health and Welfare, and some in Title 49—Transportation.

In 2009, the Office of Law Revision Counsel provided the U.S. House of Representatives Committee on the Judiciary with a proposed bill to improve the structure of U.S. national space law.<sup>68</sup> The bill gathers and restates the laws regarding the national and commercial space programs in a new Title 51—National and Commercial Space Programs, but does not modify the existing laws in any other way. It restates existing law according to the policy, intent, and purpose of the original statutes and improves the law's organizational structure while removing ambiguities and contradictions.

Codification of U.S. national space law is significant for two reasons. First, it demonstrates the maturity of a body of law that was distinctly the product of the twentieth century and the expectation that it will continue to evolve going forward. Codification will also make U.S. national law more accessible to other nations as a model for developing their own space law. Significant segments of U.S. space law, such as shutter control and maximum probable loss, are already the de facto standard for

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<sup>66</sup> 14 C.F.R. § 1214.401 (2010).

<sup>67</sup> See generally A. Farand, *The Code Of Conduct for International Space Station Crews*, EUR. SPACE AGENCY BULL., Feb. 2001, at 64, available at [http://www.esa.int/esapub/bulletin/bullet105/bul105\\_6.pdf](http://www.esa.int/esapub/bulletin/bullet105/bul105_6.pdf).

<sup>68</sup> H.R. 3237, 111th Cong. (as passed by House, Jan. 13, 2010).

other nations; and scholars in the newly active space nations of the Pacific Rim have also identified U.S. law as a possible model for their emerging space law.<sup>69</sup>

At the time of this article's publication, the codification bill has been passed by the House of Representatives and awaits action by the Senate.

### III. THREE LONG-TERM EMERGING ISSUES

#### *A. State Space Law*

Anticipating that commercial human space flight will become a lucrative business, a number of U.S. states have begun plans to establish spaceports and associated physical and institutional infrastructure to accommodate the nascent industry. Currently, nine states have legislation authorizing various activities to support the establishment of a spaceport or related activities within their jurisdictions: Alaska, California, Florida, Hawaii, New Mexico, Oklahoma, Texas, Virginia, and Wisconsin.<sup>70</sup> The kind and degree of activities vary widely, but they all aim to attract space tourism to the given state as an economic development strategy. Therefore, the state laws contain a variety of incentives that are tailored to the needs of each particular state. Some, like California, Florida, Texas and Virginia, contain actual spaceport incentives in order to leverage existing government facilities.<sup>71</sup> Others, like Oklahoma, establish wider-ranging space authorities.<sup>72</sup> Tax advantages are a major feature of New Mexico's law.<sup>73</sup> Some states, like New Mexico,<sup>74</sup> are offering attractive liability regimes to address the doctrine of in-

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<sup>69</sup> See Colloquium, *Pacific Rim National Space Law Summit*, 36 J. SPACE L. 363 (2009).

<sup>70</sup> See, e.g., ALASKA STAT. § 14.40.821 (2009); HAW. REV. STAT. § 201-73 (2009); WIS. STAT. ANN. § 114.63 (West 2010).

<sup>71</sup> CAL. GOV'T CODE § 13999.2(a) (West 2009); FLA. STAT. § 331.302 (2010); TEX. LOC. GOV'T CODE ANN. § 507 (2010); VA. CODE ANN. § 2.2-2201 (West 2009).

<sup>72</sup> OKLA. STAT. ANN. tit. 74 § 5203 (2009).

<sup>73</sup> N.M. STAT. ANN. § 58-31-4 (2010)

<sup>74</sup> On February 27, 2010, New Mexico Governor Bill Richardson signed into law New Mexico Senate Bill 9, Space Flight Informed Consent Act, S.B. 009, 49th Leg., 2d Sess. (N.M. 2010).

formed consent in a manner that is favorable to the industry. Together, these laws have begun to build a body of individual state space law. Initially, states are analogizing spaceports to airports. In many instances, that analogy is reasonable, and relationships among local, state, and federal authorities can be forged using the airport model. However, as spaceports develop, it may be necessary to take into consideration some factors that are inapplicable to airports. As discussed below, chief among these factors is Article VI of the Outer Space Treaty, which makes the U.S. government responsible for continually supervising all U.S. nongovernmental space actors.<sup>75</sup> As a result, the federal government may need to supervise activities stemming from spaceport operations more closely than for aviation. Looking further into the future, and envisioning multiple active spaceports in different states, the federal government may need to invoke the Constitutional doctrine of preemption to ensure the United States meets its treaty obligations.<sup>76</sup>

### *B. Licensing Commercial Orbital Flights*

Over the years, Congress has granted incremental jurisdiction to the DoT's Federal Aviation Administration (FAA) for licensing commercial space flights. When launch technology only brought objects into space, Congress granted the FAA authority to license launches in the 1984 Launch Act.<sup>77</sup> Then when launch technology was developed to bring payloads into space and return them, Congress granted the FAA reentry licensing authority in 1988.<sup>78</sup> The FAA therefore has jurisdiction to launch what goes up and what comes down, but it does not yet have jurisdiction to license a commercial object that remains in orbit for a period of time.<sup>79</sup>

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<sup>75</sup> Outer Space Treaty, art. 6, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205.

<sup>76</sup> *Interview: Timothy Hughes, SpaceX Chief Counsel*, RES COMMUNIS, Jan. 14, 2008, <http://rescommunis.wordpress.com/2008/01/14/interview-timothy-hughes-spacex-chief-counsel>.

<sup>77</sup> Commercial Space Launch Act, Pub. L. No. 98-575, § 7, 98 Stat. 3055, 3058 (1984) (codified as amended at 49 U.S.C. § 70101 (Supp. II 2008)).

<sup>78</sup> Commercial Space Act of 1998, Pub. L. No. 105-303, 112 Stat. 2843.

<sup>79</sup> Hughes & Rosenberg, *supra* note 58, at 49–50.

Assuming that technology is being developed to successfully provide orbital flight on a commercial basis, then based on Congress' previous grants of jurisdiction, it is reasonable to expect that it will grant orbital licensing jurisdiction in the future.<sup>80</sup> If so, this would be a substantial departure from previous jurisdictional grants because, unlike suborbital flights, orbital flights will clearly operate in international territory. Therefore, national jurisdiction for commercial orbital operations must be considered within the context of international space law.

Space, like the Antarctic and the high seas, is a global commons. However, unlike with the other global commons, the international law that governs space developed rapidly—within months rather than decades or centuries. It was a scant ten months from the end of Outer Space Treaty negotiations to its entrance into force in 1967. Another four space treaties entered into force in under twenty years.<sup>81</sup> The speed with which the international community established this treaty regime demonstrates a clear intent that space was to be governed by international law.

Initially, different countries had competing definitions as to what kind of entities were appropriate actors in the space commons. The Soviet Union argued that only nation-states could act in space while the United States argued that private entities could also be valid space actors. This conflict led to one of the most important compromises in all of space law: Article VI of the Outer Space Treaty which provides that “activities of non-governmental entities in outer space . . . shall require authorization and continuing supervision by the appropriate State Party to the Treaty.”<sup>82</sup> This provision recognizes the right of private actors to be in space and to conduct space activities while

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<sup>80</sup> Some have expressed the view that it should be NASA, not the FAA, that ought to be given jurisdiction over commercial orbital flight. As of this writing, this is still a nascent issue. See Video: Space Exploration and Policy and Programs (C-Span 2010), <http://www.cspanvideo.org/program/292791-1> (last visited Apr. 11, 2011).

<sup>81</sup> See Brian Beck, *The Next, Small Step for Mankind: Fixing the Inadequacies of the International Space Law Treaty Regime to Accommodate the Modern Space Flight Industry*, 19 ALB. L.J. SCI. & TECH. 1, 10–11 (2009).

<sup>82</sup> Outer Space Treaty, *supra* note 75.

at the same time providing oversight to ensure that their actions conform to international law.

The United States meets its Article VI supervisory responsibility through the federal licensing regulations established to regulate private space activities. A logical question, then, is whether the national licensing process for commercial orbital flights will be consistent with international law. To be consistent, the licensing process must address a number of considerations, the most important of which is the non-appropriation principle of the Outer Space Treaty. The Treaty states that outer space “is not subject to national appropriation by claim of sovereignty.”<sup>83</sup> Therefore, when exercising sovereign authority and responsibility to grant licenses for commercial orbital activities, the United States must clearly state that the act of granting a license does not constitute appropriation of the given orbit. The ISS IGA offers a precedent for this necessary caveat, stating, “Nothing in this Agreement shall be interpreted as . . . constituting a basis for asserting a claim to national appropriation over outer space or over any portion of outer space.”<sup>84</sup> Additionally, licenses for nongovernmental commercial orbital operations cannot constitute indirect national appropriation due to the Outer Space Treaty’s prohibition of appropriation “by any other means.”<sup>85</sup> Therefore the license must include additional language to clarify that the licensed use of an orbit by a private entity also does not constitute national appropriation.

This potential license language addresses national appropriation, but not appropriation by nongovernmental entities. There are some observers who contend that nongovernmental appropriation is permitted by the space law regime, but the international opinion is strongly of the opposite view.<sup>86</sup> On an

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<sup>83</sup> *Id.* art. 2.

<sup>84</sup> Agreement Concerning Cooperation on the Civil International Space Station, art. 2, Jan. 29, 1998, T.I.A.S. No. 12927.

<sup>85</sup> Outer Space Treaty, *supra* note 75, art 2.

<sup>86</sup> Compare Alan Wasser & Douglas Jobe, *Space Settlements, Property Rights, and International Law: Could a Lunar Settlement Claim the Lunar Real Estate it Needs to Survive?*, 73 J. AIR L. & COMMERCE 72 (2008), with Press Release, International Institute of Space Law, Statement of the Board of Directors of the International Institute of Space Law (IISL) (Mar. 22, 2009), available at [http://www.iislweb.org/html/20090322\\_news.html](http://www.iislweb.org/html/20090322_news.html).

analogous topic, an authoritative opinion from within the U.S. State Department states that “private ownership of an asteroid is precluded by Article II of the [Outer Space] Treaty.”<sup>87</sup> It is reasonable to expect that this position will be applied to an orbit, and so a U.S. orbital licensing regime will, at a minimum, have to account for this.

### *C. Evolving Definition of “Commercial”*

The definition of the term “commercial” has a long and dynamic history in the aerospace industry. In the United States, the industry emerged from World War II, the necessities of which caused the dramatic growth of individual prewar companies like the McDonnell Aircraft Corporation and Douglas Aircraft Company.<sup>88</sup> In the postwar years, Cold War space and military activities created incentives for these entities to merge into aerospace manufacturers and defense contractors like the McDonnell Douglas Corporation.<sup>89</sup> But the end of the Cold War decreased demand, and a further wave of mergers left remaining only a few aerospace giants like the Lockheed Martin Corporation and The Boeing Company.<sup>90</sup>

Since the 1950s, the U.S. government and aerospace contractors have maintained a close relationship in which the government has awarded contract work through a complex mix of merit, technology, and politics in order to achieve both specific missions and to maintain a vibrant industrial base. All the while, both sides have maintained that the industry operates on

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<sup>87</sup> Letter to Gregory William Nemitz from Ralph L. Braibanti, Dir., Space & Advanced Tech., U.S. Dep’t of State, Bureau of Oceans & Int’l Env’tl Affairs, (Aug. 15, 2003), *quoted in OrbDev Appeals to State Dept for Eros Rent Ruling*, SPACE DAILY, Aug. 28, 2003, <http://www.spacedaily.com/news/asteroid-03k.htm>.

<sup>88</sup> See Boeing, McDonnell Aircraft Corp. . . . Preparing for the Phantom, [www.boeing.com/history/narrative/n028mcd.html](http://www.boeing.com/history/narrative/n028mcd.html) (last visited Apr. 30, 2011); Boeing, The Douglas Aircraft Co. . . . Building Up for War, <http://www.boeing.com/history/narrative/n026dou.html> (last visited Apr. 30, 2011).

<sup>89</sup> See Boeing, The McDonnell Douglas Corp. . . . Merging Talents, [www.boeing.com/history/narrative/n063mcd/html](http://www.boeing.com/history/narrative/n063mcd/html) (last visited Apr. 30, 2011).

<sup>90</sup> See Lockheed Martin, Lockheed Martin History, <http://www.lockheedmartin.com/aboutus/history/index.html> (last visited Apr. 30, 2011); Boeing, The Boeing Company . . . The Giants Merge, [www.boeing.com/history/narrative/n079boe.html](http://www.boeing.com/history/narrative/n079boe.html) (last visited Apr. 30, 2011).

a commercial basis—that is, the public and private sectors are separate, and the public sector sets work requirements that the private sector fulfills on a for-profit basis.<sup>91</sup> In comparison, since Europe’s aerospace industry came of age in the 1970s with the Convention for the Establishment of a European Space Agency (Convention),<sup>92</sup> European governments have commonly engaged in commercial aerospace activities. For Europeans, a commercial activity is simply one that generates revenue and in which it is appropriate for governments to engage.<sup>93</sup> By contrast, in the United States, commercial activities are synonymous with the private sector, and there is a strong bias against governments engaging in commercial activities. As a result, the U.S. aerospace industry often calls for a level playing field—that is, a market-place in which it does not have to compete with commercial activities conducted by governments.<sup>94</sup> The standing European response is to point out that the U.S. government supplies and funds critical space infrastructure and provides exclusive contracts to U.S. aerospace companies, thus placing the companies in the same position as their European counterparts.

A variation on this theme relates to industrial policy. Industrial policy is a country’s planned, strategic effort to develop a particular sector of industry. In the view of the U.S. aerospace industry, industrial policy is anathema to free market principles and results in misguided attempts by a government to choose winners and losers. In the European view, industrial policy is simply a cooperative effort between government and industry to promote the national interest. In fact, industrial policy is the

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<sup>91</sup> See Frans G. von der Dunk, *The Moon Agreement and the Prospect of Commercial Exploitation of Lunar Resources*, 32 ANNALS AIR & SPACE L. 91, 93 (2007).

<sup>92</sup> Convention for the Establishment of a European Space Agency (ESA), May 30, 1975, 14 I.L.M. 864 [hereinafter ESA Convention], available at <http://www.esa.int/convention/>.

<sup>93</sup> von der Dunk, *supra* note 91, at 93.

<sup>94</sup> See, e.g., U.S. GOV’T ACCOUNTABILITY OFFICE, U.S. AEROSPACE INDUSTRY: PROGRESS IN IMPLEMENTING AEROSPACE COMMISSION RECOMMENDATIONS, AND REMAINING CHALLENGES 26–29 (2006), available at [www.gao.gov/cgi-bin/getrpt?GAO-06-920](http://www.gao.gov/cgi-bin/getrpt?GAO-06-920); TRENDS AND CHALLENGES IN AEROSPACE OFFSETS 33 (Charles W. Wessner ed., 1999).

legal reason for aerospace cooperation among nations within Europe.<sup>95</sup>

Some observers have noted the close and interrelated relationship between the U.S. government and aerospace industry and find relatively little difference between the two views.<sup>96</sup> Recent legislative efforts to define the term “commercial” lend credence to these observations as these efforts demonstrate that some lawmakers believe it is necessary to delineate a difference between government and private commercial activities.<sup>97</sup>

Historically, aerospace activities have, by and large, been segregated into national programs. International cooperative missions have consisted of discrete tasks and interactions that do not involve the exchange of funds. As a result, the debate over what is commercial has retained its familiar contours for decades. However, the debate is about to get more interesting. In 2010, the *Shuttle* is being retired,<sup>98</sup> and the Obama Administration’s fiscal year 2011 budget for NASA’s space exploration program envisions increased reliance on the U.S. private sector and innovative contracting practices to provide, among other things, transportation to and from the recently completed *ISS*.<sup>99</sup> The plan increases NASA’s budget by billions of dollars and at the same time increases private sector involvement in national space programs. Predictably, the plan is very controversial, and its chance for success is uncertain.

Nonetheless, one can expect that this new direction and the need for new technologies will continue the globalization-era transformation of the U.S. space program, including the relationship between NASA and the aero-space industry and the contours of that industry. As for the NASA-industry relationship, in recent years both public and private entities have seen

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<sup>95</sup> ESA Convention, *supra* note 92, art. VII.

<sup>96</sup> See, e.g., ROBERT B. REICH, *THE WORK OF NATIONS: PREPARING OURSELVES FOR 21ST CENTURY CAPITALISM* 156–57 (1992).

<sup>97</sup> See NASA Authorization Act, Pub. L. No. 106-391 §§ 303, 309, 114 Stat 1577, 1593 (2000); Human Space Flight Capability Assurance and Enhancement Act, H.R. 4804, 111th Cong. § 8 (2010).

<sup>98</sup> Damien Cave, *Celebrating U.S. Future in Space, Hopefully*, N.Y. TIMES, Apr. 27, 2010, at A14.

<sup>99</sup> See President Barack Obama, Address at Kennedy Space Center (Apr. 15, 2010) (transcript and recording available at [http://www.nasa.gov/about/obama\\_ksc\\_pod.html](http://www.nasa.gov/about/obama_ksc_pod.html)).

new forms of contracting in which procurements, payments, and performance milestones have been recast to “facilitate a smooth transition into commercialization.”<sup>100</sup> Regarding the industry’s makeup, the “buy national” policies of the Cold War have given way to an incremental inclusion of non-U.S. subcontractors that now provide important technologies for major U.S. general contractors, even for national security launches that have never before been commercially available to non-U.S. suppliers.<sup>101</sup>

These changes and the new space exploration direction suggest that primarily business decisions will replace the primarily geopolitical decisions that defined the Cold War space program. If so, then the debate surrounding the definition of “commercial” is about to take on new dimensions that are unlikely to go as far as designating a foreign prime contractor for critical U.S. needs, but will transform actors and agreements in arrangements that are yet to be recognized as “commercial.”

## CONCLUSION

At the dawn of the twentieth century, airplanes had not yet flown and spacecraft not yet been conceived. Yet, well before the century’s end—in less than one-quarter of the United States’ national existence—humans were on the Moon. On our way to the Moon, we learned that space could be used to improve and support life on Earth. It is impossible to address in a single article all of the important emerging space activities that must be supported by a new or extended legal foundation. Among these important issues are orbital debris and maintenance of the near-Earth space environment, real and intellectual property rights in space, space-based solar power, human settlements in the solar system, and growing commercial applications, to name just a few.

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<sup>100</sup> Tiphany Baker Dickerson, *Patent Rights Under Space Act Agreements and Procurement Contracts: A Comparison by the Examinations of NASA’s Commercial Orbital Transportation Services (COTS)*, 33 J. SPACE L. 341, 343 (2007).

<sup>101</sup> See, e.g., Press Release, Lockheed Martin, Atlas V Team Wins Achievement Award from U.S. Space Foundation (Apr. 1, 2003), available at [http://www.lockheedmartin.com/news/press\\_releases/2003/AtlasVTeamWinsAchievementAwardFromU.html](http://www.lockheedmartin.com/news/press_releases/2003/AtlasVTeamWinsAchievementAwardFromU.html).

It is also impossible to assert what the Constitution's Framers would have thought about space activities.<sup>102</sup> However, in designing the constitutional system to "form a more perfect Union" and to "promote the general Welfare" for themselves and for us, their "Posterity,"<sup>103</sup> they provided a legal system robust and flexible enough to accommodate what was inconceivable to the eighteenth century mind: human beings living and working in outer space. Perhaps more than any other area of law, space law has demonstrated how the Constitution requires each generation to articulate anew what it means to "secure the Blessings of Liberty."<sup>104</sup>

To design and implement future space activities and space law, the United States will have to carefully consider its national interests and determine how they are aligned with the interests of other nations and shared with global interests. In the interconnected world of the twenty-first century, the "one-nation-go-it-alone" model of *Apollo* is becoming increasingly anachronistic. The ongoing lessons and experiences of the partnership model employed in the *ISS* have the potential to show the way to a "humans-from-Earth" model for missions to Mars and beyond. Perhaps along the way, new forms of commerce and industry will manifest, leading to a new, and more equitably shared, level of prosperity.

The promise of space requires the informed citizenry that Jefferson recognized as the prerequisite to democracy.<sup>105</sup> To foster this citizenry, the United States must continue to provide affordable public education and private opportunities, such as the Intel Science Talent Search won in 2010 by eighteen-year-old Erika DeBenedictis who created an original algorithm that

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<sup>102</sup> However, it is the author's opinion that Thomas Jefferson would have been a major advocate of space activities. Remote sensing would have been an important tool in his agrarian society, GPS would have been an important tool in the Northwest Ordinance, and the sponsor and architect of the Lewis and Clark expedition would understand the attraction of space exploration. To be sure, George Washington, the surveyor, would have also appreciated GPS.

<sup>103</sup> U.S. CONST. pmbl.

<sup>104</sup> *Id.*

<sup>105</sup> See Letter from Thomas Jefferson, *supra* note 1.

identifies energy minimizing routes for spacecraft.<sup>106</sup> With continued commitments like this, the Union will continue to be more perfect on Earth and in space.

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<sup>106</sup> News Release, Intel, Intel Science Talent Search 2010 Winners Announced (Mar. 16, 2010), *available at* <http://www.intel.com/pressroom/archive/releases/20100316edu.htm>.



## LEGISLATIVE TIMELINE OF PUBLIC LAW 111-314

*As reported by www.thomas.gov*

110<sup>th</sup> Congress – H.R. 4780:

12/18/2007:

Sponsor introductory remarks on measure. (CR E2599-2600)

12/18/2007:

Referred to the House Committee on the Judiciary.

111<sup>th</sup> Congress - H.R. 3237:

7/16/2009:

Sponsor introductory remarks on measure. (CR E1818)

7/16/2009:

Referred to the House Committee on the Judiciary.

10/21/2009:

Committee Consideration and Mark-up Session Held.

10/21/2009:

Ordered to be Reported by Voice Vote.

11/2/2009 6:33pm:

Reported by the Committee on Judiciary. H. Rept. 111-325.

11/2/2009 6:33pm:

Placed on the House Calendar, Calendar No. 127.

1/13/2010 12:56pm:

Mr. Cohen moved to suspend the rules and pass the bill.

1/13/2010 12:56pm:

Considered under suspension of the rules. (consideration:  
CR H67-104)

1/13/2010 12:56pm:

DEBATE - The House proceeded with forty minutes of  
debate on H.R. 3237.

1/13/2010 1:00pm:

On motion to suspend the rules and pass the bill Agreed to  
by voice vote. (text: CR H67-104)

1/13/2010 1:00pm:

Motion to reconsider laid on the table Agreed to without  
objection.

1/20/2010:

Received in the Senate and Read twice and referred to the Committee on the Judiciary.

5/6/2010:

Committee on the Judiciary. Ordered to be reported without amendment favorably.

5/10/2010:

Committee on the Judiciary. Reported by Senator Leahy without amendment. Without written report.

5/10/2010:

Placed on Senate Legislative Calendar under General Orders. Calendar No. 371.

12/3/2010:

Passed Senate without amendment by Unanimous Consent. (consideration: CR S8479)

12/3/2010:

Message on Senate action sent to the House.

12/3/2010:

Cleared for White House.

12/9/2010:

Presented to President.

12/18/2010:

Signed by President.

12/18/2010:

Became Public Law No: 111-314.

JOHN CONYERS, JR., Michigan  
CHAIRMAN

HOWARD L. BERMAN, California  
RICK BOUCHER, Virginia  
JERROLD NADLER, New York  
ROBERT C. "BOBBY" SCOTT, Virginia  
MELVIN L. WATT, North Carolina  
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MAXINE WATERS, California  
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ANTHONY D. WEINER, New York  
ADAM B. SCHIFF, California  
ARTUR DAVIS, Alabama  
DEBBIE WASSERMAN SCHULTZ, Florida  
KETH ELLISON, Minnesota

ONE HUNDRED TENTH CONGRESS

**Congress of the United States**  
**House of Representatives**

COMMITTEE ON THE JUDICIARY

2138 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON, DC 20515-6216

(202) 225-3951

<http://www.house.gov/judiciary>

March 28, 2008

LAMAR S. SMITH, Texas  
RANKING MINORITY MEMBER

F. JAMES SENSENBRENNER, JR., Wisconsin  
HOWARD COBLE, North Carolina  
ELTON GALLEGLY, California  
BOB GOODLATTE, Virginia  
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MIKE PERCE, Indiana  
J. RANDY FORBES, Virginia  
STEVE KING, Iowa  
TOM FEENEY, Florida  
TRENT FRANKS, Arizona  
LOUIE GOHMERT, Texas  
JIM JORDAN, Ohio

Professor Joanne Irene Gabrynowicz  
National Center for Remote Sensing, Air, and Space Law  
The University of Mississippi School of Law  
P.O. Box 1848  
University, MS 38677-1848

Dear Ms. Gabrynowicz:

On December 18, 2007, I introduced H.R. 4780, a bill to codify and enact certain existing laws related to national and commercial space programs as title 51 of the United States Code. The bill was prepared by the Office of the Law Revision Counsel as part of that Office's ongoing responsibility to prepare, and submit to the Committee on the Judiciary one title at a time, a compilation, restatement, and revision of the general and permanent laws of the United States.

The bill was prepared in accordance with the statutory standard for codification legislation, which is that the restatement of existing law shall conform to the understood policy, intent, and purpose of the Congress in the original enactments, with such amendments and corrections as will remove ambiguities, contradictions, and other technical imperfections. All changes in existing law made by the bill are purely technical in nature and are not intended to have any substantive effect.

I am requesting relevant congressional committees and federal agencies, and other interested parties, to review the bill and submit any comments to the Law Revision Counsel. Anyone who wishes may also contact the Committee. Any comments received by May 31, 2008, will be considered and incorporated as appropriate in the bill as it will be reported by the Committee.

Professor Joanne Irene Gabrynowicz  
Page Two  
March 28, 2008

The bill, along with a detailed section-by-section explanation of the bill, can be accessed on the internet side of the Office of the Law Revision Counsel (<http://uscode.house.gov/>). Persons interested in obtaining a printed copy of the bill and explanation, and persons interested in submitting comments on the bill, should contact Rob Sukol, Assistant Counsel, Office of the Law Revision Counsel, U. S. House of Representatives, H2-304 Ford House Office Building, Washington, DC, 20515. The telephone number is 202-226-2411.

Please feel free to share this notice with anyone you believe is interested. Your help in ensuring the appropriate codification of title 51 will be greatly appreciated.

Sincerely,

A handwritten signature in black ink, reading "John Conyers, Jr." in a cursive style.

John Conyers, Jr.  
Chairman

TO ENACT CERTAIN LAWS RELATING TO NATIONAL AND  
COMMERCIAL SPACE PROGRAMS AS TITLE 51, UNITED  
STATES CODE, “NATIONAL AND COMMERCIAL SPACE  
PROGRAMS”

NOVEMBER 2, 2009.—Referred to the House Calendar and ordered to be printed

Mr. CONYERS, from the Committee on the Judiciary,  
submitted the following

R E P O R T

[To accompany H.R. 3237]

[Including cost estimate of the Congressional Budget Office]

The Committee on the Judiciary, to whom was referred the bill (H.R. 3237) to enact certain laws relating to national and commercial space programs as title 51, United States Code, “National and Commercial Space Programs”, having considered the same, report favorably thereon and recommend that the bill do pass.

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## PURPOSE AND SUMMARY

H.R. 3237 would enact certain laws relating to national and commercial space programs as title 51, United States Code, "National and Commercial Space Programs".

## BACKGROUND AND NEED FOR LEGISLATION

H.R. 3237 revises and restates certain laws relating to national and commercial space programs and re-enacts those laws as title 51, United States Code. The bill was prepared by the Office of the Law Revision Counsel of the House of Representatives, as part of its responsibility under 2 U.S.C. 285b to submit to the Committee on the Judiciary proposed bills to enact titles of the United States Code into positive law.

This bill has undergone extensive review in two previous Congresses. Predecessor bills to H.R. 3237 were introduced in the 109th and 110th Congresses — H.R. 3039 in the 109th, and H.R. 4780 in the 110th. This bill is substantially identical to H.R. 4780, with a few revisions to respond to comments received.

## CONFORMITY WITH ORIGINAL INTENT

In the drafting, the intent is to comply with the standard set forth in 2 U.S.C. 285b(1), that the restatement of existing law shall conform to "the understood policy, intent, and purpose of the Congress in the original enactments, with such amendments and corrections as will remove ambiguities, contradictions, and other imperfections . . . ."

In restating existing law, this bill consolidates various provisions of law which have been enacted separately over a period of many years, reorganizing them, conforming style and terminology, modernizing obsolete language, and correcting drafting errors. These changes are not intended to have substantive effect, or to impair in any way the precedential value of earlier judicial decisions or other interpretations.

This bill is intended to restate existing law without substantive change. That enactment of a bill such as this one does not make substantive change in the law, absent an unequivocal expression of Congressional intent to make such a change, has been repeatedly held in numerous cases, including the following:

*Finley v. United States*, 490 U.S. 545, 553–555 (1989).

*Cass v. United States*, 417 U.S. 72, 81–82 (1974).

*Tidewater Oil Co. v. U.S.*, 409 U.S. 151, 161–162 (1972).

*United States v. Cook*, 384 U.S. 257, 260 (1966).

*Fourco Glass Co. v. Transmirra Products Corp.*, 353 U.S. 222, 226–227 (1957).

*Washington–Dulles Transportation, Ltd. v. Metropolitan Washington Airports Authority*, 263 F.3d 371, 378–379 (4th Cir. 2001).

*Atchison, Topeka and Santa Fe Railway Co. v. United States*, 617 F.2d 485, 490–491 (7th Cir. 1980).

*Trailer Marine Transport Corp. v. Federal Maritime Commission*, 602 F.2d 379, 383 (D.C. Cir. 1979).

See also NORMAN J. SINGER, SUTHERLAND STATUTORY CONSTRUCTION, §§ 28.10, 28.11 (6th ed. 2002).

#### HEARINGS

No hearings were held on H.R. 3237.

#### COMMITTEE CONSIDERATION

On October 21, 2009, the Committee met in open session and ordered the bill, H.R. 3237, favorably reported, by voice vote, a quorum being present.

#### COMMITTEE VOTES

In compliance with clause 3(b) of rule XIII of the Rules of the House of Representatives, the Committee advises that there were no recorded votes during the Committee's consideration of H.R. 3237.

#### COMMITTEE OVERSIGHT FINDINGS

In compliance with clause 3(c)(1) of rule XIII of the Rules of the House of Representatives, the Committee advises that the findings and recommendations of the Committee, based on oversight activities under clause 2(b)(1) of rule X of the Rules of the House of Representatives, are incorporated in the descriptive portions of this report.

#### NEW BUDGET AUTHORITY AND TAX EXPENDITURES

Clause 3(c)(2) of rule XIII of the Rules of the House of Representatives is inapplicable because this legislation does not provide new budget authority or increased tax expenditures.

## CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

In compliance with clause 3(c)(3) of rule XIII of the Rules of the House of Representatives, the Committee sets forth, with respect to the bill, H.R. 3237, the following estimate and comparison prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act of 1974:

U.S. CONGRESS,  
CONGRESSIONAL BUDGET OFFICE,  
*Washington, DC, October 30, 2009.*

Honorable JOHN CONYERS, JR.  
Chairman,  
Committee on the Judiciary,  
U.S. House of Representatives,  
Washington, DC 20515.

Dear Mr. Chairman:

The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 3237, a bill to enact certain laws relating to national and commercial space programs as title 51, United States Code, "National and Commercial Space Programs."

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Jeff LaFave, who can be reached at 226-2860.

Sincerely,  
Douglas W. Elmendorf

Enclosure  
cc: Honorable Lamar Smith  
Ranking Minority Member

*H.R. 3237—A bill to enact certain laws relating to national and commercial space programs as title 51, United States Code, "National and Commercial Space Programs"*

*As ordered reported by the House Committee on the Judiciary on October 21, 2009*

H.R. 3237 would codify certain laws relating to national and commercial space programs as title 51 of the United States Code. In restating existing law, the legislation would make technical changes to the law involving national and commercial space programs. CBO estimates that enacting H.R. 3237 would have no significant impact on the federal budget and would not affect direct spending or revenues.

H.R. 3237 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act and would impose no costs on state, local, or tribal governments.

The CBO staff contact for this estimate is Jeff LaFave. The estimate was approved by Theresa Gullo, Deputy Assistant Director for Budget Analysis.

PERFORMANCE GOALS AND OBJECTIVES

The Committee states that pursuant to clause 3(c)(4) of rule XIII of the Rules of the House of Representatives, H.R. 3237 will revise and restate certain laws relating to national and commercial space programs, and re-enact those laws as title 51, United States Code.

CONSTITUTIONAL AUTHORITY STATEMENT

Pursuant to clause 3(d)(1) of rule XIII of the Rules of the House of Representatives, the Committee finds the authority for this legislation in article I, section 8 of the Constitution.

ADVISORY ON EARMARKS

In accordance with clause 9 of rule XXI of the Rules of the House of Representatives, H.R. 3237 does not contain any congressional earmarks, limited tax benefits, or limited tariff benefits as defined in clause 9(d), 9(e), or 9(f) of Rule XXI.

DISPOSITION TABLE

This table shows a disposition for provisions affected by the bill.

Disposition Table

Former United States Code Section	Disposition
15 U.S.C. 1511e .....	51 U.S.C. 50702
15 U.S.C. 1535 .....	51 U.S.C. 50703
15 U.S.C. 5601 .....	Not repealed but omitted from text of title 51. Section 2 of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5601) provides findings related to land remote sensing policy.
15 U.S.C. 5602 .....	51 U.S.C. 60101
15 U.S.C. 5611 .....	51 U.S.C. 60111
15 U.S.C. 5612 .....	Repealed as obsolete. Section 102 of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5612) required the Landsat Program Management, subject to appropriations and only under certain existing contract authority, to expeditiously contract with a United States private sector entity for the development and delivery of Landsat 7.
15 U.S.C. 5613 .....	Repealed as obsolete. Section 103 of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5613) required the Landsat Program Management, within 30 days after October 28, 1992, to enter into negotiations with the Landsat 6 contractor with respect to unenhanced data for which the Landsat 6 contractor had responsibility under its contract. In the event such negotiations had not, by September 30, 1993, resulted in an agreement meeting certain specified goals, the Administrator of the National Aeronautics and Space Administration and the Secretary of Defense were jointly required to certify and report their determination of that fact to Congress, with a review of options, projected costs, and recommendations for achieving the specified goals.
15 U.S.C. 5614 .....	51 U.S.C. 60112

## Disposition Table—Continued

Former United States Code Section	Disposition
15 U.S.C. 5615(a), (b) .....	51 U.S.C. 60113
15 U.S.C. 5615(c) .....	Repealed as obsolete. Section 105(c) of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5615(c)) required the Landsat Program Management to develop and submit to Congress, not later than July 15, 1994, a report containing a Landsat 7 Data Policy Plan.
15 U.S.C. 5615(d) .....	Repealed as obsolete. Section 105(d) of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5615(d)) required the Landsat Program Management to submit reports to Congress providing justification for certain aspects of the Landsat 7 data policy. The first such report was required to be submitted not later than 12 months after submission of the Landsat 7 Data Policy Plan required by section 105(c) of the Act (15 U.S.C. 5615(c)). Thereafter, the reports were required to be submitted annually until the launch of Landsat 7, which occurred on April 15, 1999.
15 U.S.C. 5621 .....	51 U.S.C. 60121
15 U.S.C. 5622 .....	51 U.S.C. 60122
15 U.S.C. 5623 .....	51 U.S.C. 60123
15 U.S.C. 5624 .....	51 U.S.C. 60124
15 U.S.C. 5625 .....	51 U.S.C. 60125
15 U.S.C. 5631 .....	51 U.S.C. 60131
15 U.S.C. 5632 .....	51 U.S.C. 60132
15 U.S.C. 5633(a)–(e) .....	51 U.S.C. 60133
15 U.S.C. 5633(f) .....	Repealed as obsolete. Section 303(f) of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5633(f)) required the President to assess the progress of the technology demonstration program under section 303 of the Act (15 U.S.C. 5633) and submit a report to Congress within 2 years after October 28, 1992.
15 U.S.C. 5641(a) .....	Repealed as obsolete. Section 401(a) of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5641(a)) required, within 5 years after October 28, 1992, the Landsat Program Management, in consultation with representatives of appropriate United States Government agencies, to assess and report to Congress on options for a successor land remote sensing system to Landsat 7.
15 U.S.C. 5641(b), (c) .....	51 U.S.C. 60134
15 U.S.C. 5651 .....	51 U.S.C. 60141
15 U.S.C. 5652 .....	51 U.S.C. 60142
15 U.S.C. 5653 .....	51 U.S.C. 60143
15 U.S.C. 5654 .....	51 U.S.C. 60144
15 U.S.C. 5655 .....	51 U.S.C. 60145
15 U.S.C. 5656 .....	51 U.S.C. 60146
15 U.S.C. 5657 .....	51 U.S.C. 60147
15 U.S.C. 5658 .....	51 U.S.C. 60148
15 U.S.C. 5671 .....	51 U.S.C. 60161
15 U.S.C. 5672 .....	51 U.S.C. 60162
15 U.S.C. 5801 .....	Not repealed but omitted from text of title 51. Section 501 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (15 U.S.C. 5801) provides findings related to national space competitiveness.
15 U.S.C. 5802 .....	51 U.S.C. 50501
15 U.S.C. 5803(a)–(c) .....	51 U.S.C. 50502
15 U.S.C. 5803(d) .....	Repealed as obsolete. Section 504(d) of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (15 U.S.C. 5803(d)), required the Administrator of the National Aeronautics and Space Administration to conduct an ongoing review of the program established under section 504 of the Act (15 U.S.C. 5803) and report the results of the review to Congress not later than January 31, 1995.
15 U.S.C. 5804 .....	Previously repealed.

Disposition Table—Continued

Former United States Code Section	Disposition
15 U.S.C. 5805 .....	Repealed as obsolete. Section 506 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (15 U.S.C. 5805), required the Administrator of the National Aeronautics and Space Administration and the Secretary of Defense, as appropriate, in coordination with the Secretary of Transportation, to conduct an inventory and identify all launch support facilities owned by the United States Government. To the extent practicable, the Administrator and the Secretary of Defense were also required to identify launch support facilities which could be made available for use by non-Federal entities on a reimbursable basis without interfering with Federal activities. Not later than one year after November 4, 1992, the Administrator and the Secretary of Defense were each required to submit a report to Congress.
15 U.S.C. 5806 .....	51 U.S.C. 50503
15 U.S.C. 5807 .....	51 U.S.C. 50504
15 U.S.C. 5808 .....	51 U.S.C. 50506
42 U.S.C. 2451 .....	51 U.S.C. 20102
42 U.S.C. 2452 .....	51 U.S.C. 20103
42 U.S.C. 2453 .....	Repealed as obsolete. Section 302 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2453) provided that the President, for a period of four years after July 29, 1958, was authorized to transfer to the National Aeronautics and Space Administration the functions of other Federal agencies that related primarily to the prescribed functions of the Administration.
42 U.S.C. 2454 .....	51 U.S.C. 20131
42 U.S.C. 2455(a) .....	51 U.S.C. 20132
42 U.S.C. 2455(b) .....	Not repealed but omitted from text of title 51. Section 304(b) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2455(b)) provides that the Atomic Energy Commission may authorize its employees to permit any member, officer, or employee of the National Aeronautics and Space Council (and certain others) to have access to "Restricted Data" under certain circumstances. The Atomic Energy Commission was abolished and its functions were transferred by sections 104 and 201 of the Energy Reorganization Act of 1974 (42 U.S.C. 5814, 42 U.S.C. 5841). The National Aeronautics and Space Council (which was established under section 201(a) of the National Aeronautics and Space Act of 1958 (Public Law 85-568, 72 Stat. 427)), including the office of Executive Secretary of the Council, together with its functions, was abolished by section 3(a)(4) of Reorganization Plan No. 1 of 1973 (5 App. U.S.C.).
42 U.S.C. 2456 .....	51 U.S.C. 20133
42 U.S.C. 2456a .....	51 U.S.C. 20134
42 U.S.C. 2457 .....	51 U.S.C. 20135
42 U.S.C. 2458 .....	51 U.S.C. 20136
42 U.S.C. 2458a .....	51 U.S.C. 20137
42 U.S.C. 2458b .....	51 U.S.C. 20138
42 U.S.C. 2458c .....	51 U.S.C. 20139
42 U.S.C. 2459 .....	51 U.S.C. 20140
42 U.S.C. 2459a .....	Not repealed but omitted from text of title 51. Section 202 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (42 U.S.C. 2459a), provides that certain appropriations authorized under the Act may remain available until expended and that certain contracts may be entered into for training, investigations, and costs associated with personnel relocation and for other services provided during the fiscal year following the fiscal year in which funds are appropriated.
42 U.S.C. 2459b .....	51 U.S.C. 20141

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 2459c .....	51 U.S.C. 20142
42 U.S.C. 2459d .....	51 U.S.C. 30301
42 U.S.C. 2459e .....	51 U.S.C. 30302
42 U.S.C. 2459f .....	51 U.S.C. 20143
42 U.S.C. 2459f-1 .....	51 U.S.C. 20144
42 U.S.C. 2459g .....	51 U.S.C. 30307
42 U.S.C. 2459h .....	51 U.S.C. 30308(b)
42 U.S.C. 2459i .....	51 U.S.C. 30102
42 U.S.C. 2459j .....	51 U.S.C. 20145
42 U.S.C. 2459k .....	51 U.S.C. 20146
42 U.S.C. 2459l .....	51 U.S.C. 20147
42 U.S.C. 2460 .....	51 U.S.C. 30101
42 U.S.C. 2461 .....	51 U.S.C. 30901
42 U.S.C. 2462 .....	Previously repealed.
42 U.S.C. 2463 .....	51 U.S.C. 30303
42 U.S.C. 2464 .....	51 U.S.C. 70101
42 U.S.C. 2464a .....	Not repealed but omitted from text of title 51. Section 8111 of the Department of Defense Appropriations Act, 1986 (42 U.S.C. 2464a), provides, in fiscal year 1986, that the Secretary of Defense and the Administrator of the National Aeronautics and Space Administration jointly determine which payloads are to be launched on Titan II launch vehicles, with certifications to Congress required regarding cost effectiveness and possible waivers.
42 U.S.C. 2465 .....	Previously repealed.
42 U.S.C. 2465a(a) .....	51 U.S.C. 70102(a)
42 U.S.C. 2465a(b) .....	Repealed as obsolete. Section 112(b) of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991 (42 U.S.C. 2465a(b)), required the Administrator of the National Aeronautics and Space Administration, within six months after November 16, 1990, to submit a report to Congress setting forth a plan to implement the policy described in subsection (a)(1) of the section.
42 U.S.C. 2465a(c) .....	51 U.S.C. 70102(b)
42 U.S.C. 2465a(d) .....	51 U.S.C. 70102(c)
42 U.S.C. 2465b .....	Previously repealed.
42 U.S.C. 2465c .....	51 U.S.C. 70103(a)
42 U.S.C. 2465d .....	Previously repealed.
42 U.S.C. 2465e .....	Previously repealed.
42 U.S.C. 2465f .....	51 U.S.C. 70103(b)
42 U.S.C. 2466 .....	51 U.S.C. 70301
42 U.S.C. 2466a .....	51 U.S.C. 70302
42 U.S.C. 2466b .....	51 U.S.C. 70303
42 U.S.C. 2466c .....	51 U.S.C. 70304
42 U.S.C. 2467 .....	51 U.S.C. 40901
42 U.S.C. 2467a .....	51 U.S.C. 40902
42 U.S.C. 2467b(a) .....	51 U.S.C. 40903(b)
42 U.S.C. 2467b(b) .....	51 U.S.C. 40903(c)
42 U.S.C. 2467b(c) .....	51 U.S.C. 40903(a)
42 U.S.C. 2471 (prior) .....	Repealed as obsolete. Section 201 of the National Aeronautics and Space Act of 1958, which was classified to a prior 42 U.S.C. 2471, established the National Aeronautics and Space Council. The provision is obsolete because section 3(a)(4) of Reorganization Plan No. 1 of 1973 (5 App. U.S.C.) abolished the National Aeronautics and Space Council, including the office of Executive Secretary of the Council, together with its functions, effective July 1, 1973.
42 U.S.C. 2471 .....	Not repealed but omitted from text of title 51. Section 501 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1989 (42 U.S.C. 2471), provides for establishment of the National Space Council. The National Space Council has not functioned or been staffed since 1993.

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 2471a .....	Not repealed but omitted from text of title 51. Section 121 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991 (42 U.S.C. 2471a), provides that the National Space Council (see item for 42 U.S.C. 2471 in this table) shall establish a Users' Advisory Group. The National Space Council has not functioned or been staffed since 1993.
42 U.S.C. 2472 .....	51 U.S.C. 20111
42 U.S.C. 2473(a), (b) .....	51 U.S.C. 20112
42 U.S.C. 2473(c) .....	51 U.S.C. 20113
42 U.S.C. 2473a .....	Previously repealed.
42 U.S.C. 2473b (1st par.) .....	51 U.S.C. 30304
42 U.S.C. 2473b (last par.) .....	Repealed as obsolete. The last paragraph under the heading "Small and Disadvantaged Business", at 103 Stat. 864, in the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1990 (42 U.S.C. 2473b (last par.)), required the Administrator of the National Aeronautics and Space Administration to submit, within one year from November 9, 1989, a plan describing the process to be followed to achieve the goal prescribed in the first paragraph under that heading in that Act (42 U.S.C. 2473b (1st par.)).
42 U.S.C. 2473c(a) .....	Repealed as unnecessary. Section 21(a) of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1992 (42 U.S.C. 2473c(a)), provided a short title for section 21 of the Act (42 U.S.C. 2473c).
42 U.S.C. 2473c(b) .....	Not repealed but omitted from text of title 51. Section 21(b) of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1992 (42 U.S.C. 2473c(b)) provides findings related to alcohol abuse, illegal drug use, the effectiveness of testing programs as a deterrent, and the ability to establish programs with adequate safeguards to protect the privacy of individuals being tested.
42 U.S.C. 2473c(c)–(h) .....	51 U.S.C. 31102
42 U.S.C. 2473d .....	51 U.S.C. 30309
42 U.S.C. 2473e .....	Previously repealed.
42 U.S.C. 2474(a) .....	Repealed as obsolete. Section 204(a) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2474(a)) established the Civilian-Military Liaison Committee. The Committee was abolished and its functions, together with the functions of its chairman and other officers, were transferred to the President of the United States by sections 1(e) and 3(a) of Reorganization Plan No. 4 of 1965 (5 App. U.S.C.).
42 U.S.C. 2474(b) .....	51 U.S.C. 20114(a)
42 U.S.C. 2474(c) .....	51 U.S.C. 20114(b)
42 U.S.C. 2474(d) .....	Repealed as obsolete. Section 204(d) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2474(d)) provided that an active or retired officer of the Army, Navy, or Air Force could serve as Chairman of the Civilian-Military Liaison Committee established by section 204(a) of the Act (42 U.S.C. 2474(a)). The Committee was abolished. See item for 42 U.S.C. 2474(a) in this table.
42 U.S.C. 2475 .....	51 U.S.C. 20115
42 U.S.C. 2475a(a) .....	51 U.S.C. 30701(a)
42 U.S.C. 2475a(b) .....	51 U.S.C. 30701(b)(2)
42 U.S.C. 2475b .....	51 U.S.C. 30702
42 U.S.C. 2476 .....	51 U.S.C. 20116
42 U.S.C. 2476a .....	51 U.S.C. 20117

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 2476b .....	Repealed as obsolete. Section 208 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2476b) authorized the Administrator of the National Aeronautics and Space Administration to accept gifts and donations of services, money, and property to be used for construction of a space shuttle orbiter. The authority of the Administrator to accept gifts or donations terminated five years after October 30, 1987.
42 U.S.C. 2477 .....	51 U.S.C. 31101
42 U.S.C. 2481 .....	51 U.S.C. 20161
42 U.S.C. 2482 .....	51 U.S.C. 20162
42 U.S.C. 2483 .....	51 U.S.C. 20163
42 U.S.C. 2484 .....	51 U.S.C. 20164
42 U.S.C. 2486 .....	Not repealed but omitted from text of title 51. Section 202 of the National Space Grant College and Fellowship Act (42 U.S.C. 2486) provides findings related to the national space grant college and fellowship program of the National Aeronautics and Space Administration.
42 U.S.C. 2486a .....	51 U.S.C. 40301
42 U.S.C. 2486b .....	51 U.S.C. 40302
42 U.S.C. 2486c .....	51 U.S.C. 40303
42 U.S.C. 2486d .....	51 U.S.C. 40304
42 U.S.C. 2486e .....	51 U.S.C. 40305
42 U.S.C. 2486f .....	51 U.S.C. 40306
42 U.S.C. 2486g .....	51 U.S.C. 40307
42 U.S.C. 2486h .....	51 U.S.C. 40308
42 U.S.C. 2486i .....	51 U.S.C. 40309
42 U.S.C. 2486j .....	Previously repealed.
42 U.S.C. 2486k .....	51 U.S.C. 40310
42 U.S.C. 2486l .....	Repealed as obsolete. Section 214 of the National Space Grant College and Fellowship Act (42 U.S.C. 2486l) authorized appropriations for fiscal years 1988, 1989, 1990, and 1991.
42 U.S.C. 2487 .....	Not repealed but omitted from text of title 51. Section 601 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (42 U.S.C. 2487) provides findings related to biomedical research in space.
42 U.S.C. 2487a .....	51 U.S.C. 40501
42 U.S.C. 2487b .....	51 U.S.C. 40502
42 U.S.C. 2487c .....	51 U.S.C. 40503
42 U.S.C. 2487d .....	Previously repealed.
42 U.S.C. 2487e .....	51 U.S.C. 40504
42 U.S.C. 2487f .....	51 U.S.C. 40505
42 U.S.C. 2487g .....	Repealed as obsolete. Section 608 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (42 U.S.C. 2487g), provided that the Administrator of the National Aeronautics and Space Administration should ensure that up to \$3,750,000 from the appropriations authorized for "Research and Development" for fiscal year 1993 were also used to carry out title VI of the Act.
42 U.S.C. 14701 .....	51 U.S.C. 50101
42 U.S.C. 14711(a) .....	51 U.S.C. 50111(a)
42 U.S.C. 14711(b) .....	Repealed as obsolete. Section 101(b) of the Commercial Space Act of 1998 (42 U.S.C. 14711(b)) required the Administrator of the National Aeronautics and Space Administration to deliver various studies and reports to Congress. The last report was required to be delivered no later than the submission of the President's annual budget request for fiscal year 2000.
42 U.S.C. 14712(a) .....	Not repealed but omitted from text of title 51. Section 104(a) of the Commercial Space Act of 1998 (42 U.S.C. 14712(a)) provided findings related to the Global Positioning System as an essential element in civil, scientific, and military space development.

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 14712(b) .....	51 U.S.C. 50112
42 U.S.C. 14713 .....	51 U.S.C. 50113
42 U.S.C. 14714 .....	51 U.S.C. 50114
42 U.S.C. 14715(a) .....	51 U.S.C. 50115(a)
42 U.S.C. 14715(b) .....	51 U.S.C. 50115(b)
42 U.S.C. 14715(c) .....	Repealed as obsolete. Section 107(c) of the Commercial Space Act of 1998 (42 U.S.C. 14715(c)) required the Administrator of the National Aeronautics and Space Administration to conduct a study to determine the extent to which the baseline scientific requirements of Earth science can be met by commercial providers. The results of the study were required to be transmitted to Congress within six months after October 28, 1998.
42 U.S.C. 14715(d) .....	51 U.S.C. 50115(c)
42 U.S.C. 14715(e) .....	51 U.S.C. 50115(d)
42 U.S.C. 14731 .....	51 U.S.C. 50131
42 U.S.C. 14732 .....	51 U.S.C. 50132
42 U.S.C. 14733(a) .....	51 U.S.C. 50133
42 U.S.C. 14733(b), (c) .....	Repealed as obsolete. Section 204(b) of the Commercial Space Act of 1998 (42 U.S.C. 14733(b)) required the Administrator of the National Aeronautics and Space Administration to conduct a study of the feasibility of implementing the recommendation of the Independent Shuttle Management Review Team that the National Aeronautics and Space Administration transition toward the privatization of the Space Shuttle. Section 204(c) of the Act (42 U.S.C. 14733(c)) required that, within 60 days after October 28, 1998, the National Aeronautics and Space Administration complete the study and submit a report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology of the House of Representatives.
42 U.S.C. 14734 .....	51 U.S.C. 50134
42 U.S.C. 14735 .....	Repealed as obsolete. Section 206 of the Commercial Space Act of 1998 (42 U.S.C. 14735) required the Secretary of Defense, in consultation with the Administrator of the National Aeronautics and Space Administration and others, to prepare and submit to certain committees of Congress a report related to national launch capabilities. The report was to be submitted no later than 180 days after October 28, 1998. The report was to access the total potential space missions expected to be conducted from the date of the report through December 31, 2007, and identify potential resource deficiencies. Based on the report, recommendations related to national launch capabilities were to be made by the Secretary of Defense, after consultation with certain Federal, State, and local officials and representatives from the private sector.
42 U.S.C. 14751 .....	Not repealed but omitted from text of title 51. Section 902 of the Commercial Reusable In-Space Transportation Act of 2002 (42 U.S.C. 14751) provides findings related to the need for development of commercial reusable in-space transportation systems.
42 U.S.C. 14752 .....	51 U.S.C. 50302
42 U.S.C. 14753 .....	51 U.S.C. 50301
42 U.S.C. 16601 .....	Not repealed but omitted from text of title 51. Section 2 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16601) provides definitions applicable in the Act.
42 U.S.C. 16611(a) .....	51 U.S.C. 20301
42 U.S.C. 16611(b) .....	51 U.S.C. 20302

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16611(c) .....	Not repealed but omitted from text of title 51. Section 101(c) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(c)) provides that the President shall develop a national policy to guide aeronautics research and development programs through 2020. Not later than 1 year after December 30, 2005, the policy is to be transmitted to the Committee on Appropriations of the House of Representatives, the Committee on Appropriations of the Senate, the Committee on Science and Technology of the House of Representatives, and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16611(d) .....	Not repealed but omitted from text of title 51. Section 101(d) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(d)) provides that the Administrator of the National Aeronautics and Space Administration shall develop a plan to guide the science programs of the Administration through 2016. Not later than 1 year after December 30, 2005, the plan is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16611(e) .....	Not repealed but omitted from text of title 51. Section 101(e) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(e)) provides that the Administrator of the National Aeronautics and Space Administration shall develop a plan for managing the facilities of the Administration through 2015. Not later than the date on which the President submits the proposed budget for the Federal Government for fiscal year 2008 to Congress, the plan is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16611(f) .....	Not repealed but omitted from text of title 51. Section 101(f) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(f)) provides that the Administrator of the National Aeronautics and Space Administration shall develop a human capital strategy to ensure that the Administration has a workforce of the appropriate size and with the appropriate skills to carry out its programs through 2011. Not later than 60 days after the date on which the President submits the proposed budget for the Federal Government for fiscal year 2007 to Congress, the strategy is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16611(g) .....	Not repealed but omitted from text of title 51. Section 101(g) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(g)) provides that the Administrator of the National Aeronautics and Space Administration shall conduct a study to determine whether any of the Administration's centers should be operated by or with the private sector by converting a center to a Federally Funded Research and Development Center or through any other mechanism. Not later than May 31, 2006, the study is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16611(h)(1) .....	51 U.S.C. 30103(a)

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16611(h)(2) .....	Not repealed but omitted from text of title 51. Section 101(h)(2) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(h)(2)) provides that it is the sense of Congress that each budget submitted to Congress should be evaluated for compliance with the findings and priorities established by the Act and the amendments made by the Act.
42 U.S.C. 16611(i) .....	51 U.S.C. 30103(b)
42 U.S.C. 16611(j) .....	Not repealed but omitted from text of title 51. Section 101(j) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(j)) provides that the Director of the Office of Science and Technology Policy shall commission an independent review of the Nation's long-term strategic needs for aeronautics test facilities and shall submit the review to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate. In addition, the Administrator of the National Aeronautics and Space Administration is prohibited from closing or mothballing certain aeronautics test facilities until certain conditions are met.
42 U.S.C. 16611a(a) .....	51 U.S.C. 20303(a)
42 U.S.C. 16611a(b) .....	51 U.S.C. 20303(b)
42 U.S.C. 16611a(c) .....	51 U.S.C. 20303(c)
42 U.S.C. 16611a(d) .....	Not repealed but omitted from text of title 51. Section 2001(d) of the America COMPETES Act (42 U.S.C. 16611a(d)) provides a sense of Congress related to authorized funding levels enabling the National Aeronautics and Space Administration to contribute significantly to innovation in the United States and undertake related activities.
42 U.S.C. 16611a(e) .....	51 U.S.C. 20303(d)
42 U.S.C. 16611a(f) .....	Not repealed but omitted from text of title 51. Section 2001(f) of the America COMPETES Act (42 U.S.C. 16611a(f)) provides that not later than 1 year after August 9, 2007, the Administrator of the National Aeronautics and Space Administration shall submit to Congress a report on a plan for instituting assessments of the effectiveness of the National Aeronautics and Space Administration's science, technology, engineering, and mathematics education programs in improving student achievement.
42 U.S.C. 16611b .....	51 U.S.C. 30103(c)
42 U.S.C. 16611b note (Public Law 111–8, div. B, title III, (3d proviso in par. under heading “Cross Agency Support”, at 123 Stat. 589)).	51 U.S.C. 30103(d)
42 U.S.C. 16612 .....	Not repealed but omitted from text of title 51. Section 102 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16612) provides that certain actions are to be taken and reports are to be transmitted in 2006, 2007, and 2008 to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16613 .....	51 U.S.C. 30104
42 U.S.C. 16614 .....	51 U.S.C. 30703
42 U.S.C. 16615 .....	51 U.S.C. 30501

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16616 .....	Not repealed but omitted from text of title 51. Section 108 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16616) provides that the Administrator of the National Aeronautics and Space Administration shall develop a commercialization plan to support the human missions to the Moon and Mars, to support low-Earth orbit activities and Earth science missions and applications, and to transfer science research and technology to society. Not later than 180 days after December 30, 2005, the plan is to be submitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16617 .....	Not repealed but omitted from text of title 51. Section 109 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16617) provides that the Administrator of the National Aeronautics and Space Administration shall conduct a feasibility study on the use of ground source heat pumps in future Administration facilities or substantial renovation of existing Administration facilities involving the installation of heating, ventilating, and air conditioning systems. Not later than 1 year after December 30, 2005, the study is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16618 .....	51 U.S.C. 30502
42 U.S.C. 16631 .....	Repealed as obsolete. Section 202 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16631) authorized appropriations for fiscal year 2007.
42 U.S.C. 16632 .....	Repealed as obsolete. Section 203 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16632) authorized appropriations for fiscal year 2008.
42 U.S.C. 16633 .....	51 U.S.C. 70902
42 U.S.C. 16634 .....	51 U.S.C. 50505
42 U.S.C. 16635 .....	Not repealed but omitted from text of title 51. Section 206 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16635) provides that amounts appropriated pursuant to the Act may be used, but not to exceed a total of \$70,000 in any fiscal year, for official reception and representation expenses.
42 U.S.C. 16636 .....	Not repealed but omitted from text of title 51. Section 207 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16636) provides that the Administrator of the National Aeronautics and Space Administration shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report providing the current expected development costs of the International Space Station and certain related matters. Thirty days after transmittal of the report, section 202 of the National Aeronautics and Space Administration Act of 2000 (42 U.S.C. 2451 note) is repealed.
42 U.S.C. 16651 .....	51 U.S.C. 30503

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16652 .....	Not repealed but omitted from text of title 51. Section 302 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16652) provides the sense of Congress with respect to the Hubble Space Telescope and certain related matters. Not later than 60 days after the landing of the second space shuttle mission for return-to-flight certification, a status report on plans for a Hubble Space Telescope servicing mission is to be transmitted by the Administrator of the National Aeronautics and Space Administration to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16653 .....	Not repealed but omitted from text of title 51. Section 303 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16653) provides that the Administrator of the National Aeronautics and Space Administration shall seek an independent assessment of the costs as well as the technical, cost, and schedule risks associated with incorporating the Landsat instrument on the first National Polar-Orbiting Operational Environmental Satellite System spacecraft compared with undertaking various alternatives. Not later than 180 days after December 30, 2005, the independent assessment is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate. Under certain conditions alternative reports are required.
42 U.S.C. 16654(a) (matter before par. (1)) .....	51 U.S.C. 30504(a)
42 U.S.C. 16654(a)(1) .....	Not repealed but omitted from text of title 51. Section 304(a)(1) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16654(a)(1)) provides that not later than 60 days after December 30, 2005, the Administrator of the National Aeronautics and Space Administration shall carry out an assessment under section 304 of the Act for certain missions.
42 U.S.C. 16654(a)(2) .....	51 U.S.C. 30504(b)
42 U.S.C. 16654(b) .....	Not repealed but omitted from text of title 51. Section 304(b) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16654(b)) provides that not later than 30 days after completing each assessment required by section 304(a)(1) of the Act (42 U.S.C. 16654(a)(1)), the Administrator shall transmit a report on the assessment to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16655(1) .....	Not repealed but omitted from text of title 51. Section 305(1) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16655(1)) provides that the Administrator of the National Aeronautics and Space Administration shall transmit the report required by section 506 of the Act. Section 506(3) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16766(3)) provides that the Administrator of the National Aeronautics and Space Administration shall, not later than 90 days after December 30, 2005, submit to certain committees of Congress the research plan for utilization and proposed final configuration of the International Space Station.
42 U.S.C. 16655(2), (3) .....	51 U.S.C. 40904
42 U.S.C. 16656 .....	51 U.S.C. 60505

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16657 .....	Not repealed but omitted from text of title 51. Section 307 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16657) provides that the Administrator of the National Aeronautics and Space Administration shall review the policies, processes, and procedures in the planning and management of applications research and development implemented in calendar years 2001 to 2005 within the Headquarters Earth-Sun System Applied Sciences Program and former Earth Science Applications Program. Not later than 1 year after December 30, 2005, a report describing the results of the review is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16658 .....	51 U.S.C. 20304
42 U.S.C. 16671 .....	51 U.S.C. 60301
42 U.S.C. 16672 .....	51 U.S.C. 60302
42 U.S.C. 16673 .....	51 U.S.C. 60303
42 U.S.C. 16674 .....	51 U.S.C. 60304
42 U.S.C. 16675 .....	51 U.S.C. 60305
42 U.S.C. 16676 .....	51 U.S.C. 60306
42 U.S.C. 16691 .....	Not repealed but omitted from text of title 51. The George E. Brown, Jr. Near-Earth Object Survey Act, which consists of section 321 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16691), provides that the Administrator of the National Aeronautics and Space Administration shall plan, develop, and implement a Near-Earth Object Survey program. Not later than 1 year after December 30, 2005, an initial report is to be transmitted to Congress. Not later than February 28 of the fifth year after December 30, 2005, an additional report is to be transmitted to Congress.
42 U.S.C. 16701 .....	51 U.S.C. 40101
42 U.S.C. 16711 .....	51 U.S.C. 40102
42 U.S.C. 16712(a) .....	Not repealed but omitted from text of title 51. Section 2002(a) of the America COMPETES Act (42 U.S.C. 16712(a)) provides a sense of Congress related to the aeronautics research and development programs of the National Aeronautics and Space Administration.
42 U.S.C. 16712(b) .....	51 U.S.C. 40103
42 U.S.C. 16721(a), (b) .....	51 U.S.C. 40111
42 U.S.C. 16721(c), (d) .....	Repealed as obsolete. Section 421(c) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16721(c)) required the Administrator of the National Aeronautics and Space Administration to enter into an arrangement with the National Research Council for an assessment of the Nation's future requirements for fundamental aeronautics research. Section 421(d) of the Act (42 U.S.C. 16721(d)) required the assessment, along with the National Aeronautics and Space Administration's response to the assessment, to be transmitted to Congress no later than 2 years after December 30, 2005.
42 U.S.C. 16722(a) .....	51 U.S.C. 40701
42 U.S.C. 16722(b) .....	51 U.S.C. 40112(a)
42 U.S.C. 16722(c) .....	51 U.S.C. 40112(b)
42 U.S.C. 16722(d) .....	51 U.S.C. 40112(c)
42 U.S.C. 16722(e) .....	51 U.S.C. 40112(d)
42 U.S.C. 16722(f) .....	51 U.S.C. 40112(e)
42 U.S.C. 16722(g) .....	51 U.S.C. 40112(f)
42 U.S.C. 16723 .....	51 U.S.C. 40113
42 U.S.C. 16724 .....	51 U.S.C. 40114
42 U.S.C. 16725 .....	51 U.S.C. 40115

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16726 .....	Repealed as obsolete. Section 426 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16726) required the Administrator of the National Aeronautics and Space Administration to enter into an arrangement with the National Research Council for an assessment of Federal wake turbulence research and development programs. A report containing results of the assessment was required to be provided to Congress no later than 2 years after December 30, 2005.
42 U.S.C. 16727 .....	51 U.S.C. 40116
42 U.S.C. 16741 .....	51 U.S.C. 40131
42 U.S.C. 16751 .....	51 U.S.C. 40141
42 U.S.C. 16761(a) .....	51 U.S.C. 70501(a)
42 U.S.C. 16761(b) .....	51 U.S.C. 70501(b)
42 U.S.C. 16761(c) .....	Not repealed but omitted from text of title 51. Section 501(c) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16761(c)), as amended by section 611(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110-422, 122 Stat. 4796), provides that the Administrator of the National Aeronautics and Space Administration shall, not later than 90 days after October 15, 2008, submit to certain committees of Congress a report related to the lack of a United States human space flight system to replace the Space Shuttle upon its planned retirement.
42 U.S.C. 16762 .....	Not repealed but omitted from text of title 51. Section 502 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16762) provides that the Administrator of the National Aeronautics and Space Administration shall, to the fullest extent possible consistent with a successful development program, use the personnel, capabilities, assets, and infrastructure of the space shuttle program in developing the Crew Exploration Vehicle, Crew Launch Vehicle, and a heavy-lift launch vehicle. Not later than 180 days after December 30, 2005, a plan describing how the National Aeronautics and Space Administration will proceed with its human space flight programs is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate. Not later than March 31, 2006, a transition plan for certain Federal and contractor personnel engaged in the space shuttle program is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16763 .....	51 U.S.C. 70502
42 U.S.C. 16764 .....	51 U.S.C. 70503
42 U.S.C. 16765 .....	51 U.S.C. 70904
42 U.S.C. 16766(1), (2) .....	51 U.S.C. 70903
42 U.S.C. 16766(3) .....	Not repealed but omitted from text of title 51. Section 506(3) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16766(3)) provides that the Administrator of the National Aeronautics and Space Administration shall, not later than 90 days after December 30, 2005, submit to certain committees of Congress the research plan for utilization and proposed final configuration of the International Space Station.
42 U.S.C. 16767(a) .....	51 U.S.C. 70905(b)
42 U.S.C. 16767(b) .....	51 U.S.C. 70905(c)

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16767(c) .....	Not repealed but omitted from text of title 51. Section 507(c) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16767(c)) provides that the Administrator of the National Aeronautics and Space Administration shall, not later than one year after December 30, 2005, transmit to certain committees of Congress a plan describing how the national laboratory (i.e., the United States segment of the International Space Station) will be operated.
42 U.S.C. 16767(d) .....	51 U.S.C. 70905(a)
42 U.S.C. 16781 .....	51 U.S.C. 31501
42 U.S.C. 16782 .....	Not repealed but omitted from text of title 51. Section 602 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16782) provides that the Administrator of the National Aeronautics and Space Administration is encouraged to provide the capabilities to support secondary payload flight opportunities on United States launch vehicles, or free flyers, for satellites or scientific payloads weighing less than 500 kilograms. In addition, the Administrator of the National Aeronautics and Space Administration is required to initiate a feasibility study for designating a National Free Flyer Launch Coordination Center as a means of coordinating, consolidating, and integrating secondary launch capabilities, launch opportunities, and payloads.
42 U.S.C. 16791 .....	51 U.S.C. 40905
42 U.S.C. 16792 .....	51 U.S.C. 30902
42 U.S.C. 16793 .....	Not repealed but omitted from text of title 51. Section 614 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16793) provides that the Administrator of the National Aeronautics and Space Administration shall enter into an arrangement with the National Research Council of the National Academy of Sciences to conduct a review and evaluation of the National Aeronautics and Space Administration's precollege science, technology, and mathematics education program. Not later than 18 months after December 30, 2005, the results of the review and evaluation are to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16794 .....	51 U.S.C. 40906
42 U.S.C. 16795 .....	51 U.S.C. 40907
42 U.S.C. 16796 .....	Not repealed but omitted from text of title 51. Section 617 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16796) provides that the Administrator of the National Aeronautics and Space Administration shall transmit a report to Congress on the legal status of the Motivating Undergraduates in Science and Technology program and implement the program if the report concludes that the program is in compliance with the laws of the United States.
42 U.S.C. 16797 .....	51 U.S.C. 40908
42 U.S.C. 16798(a) .....	Not repealed but omitted from text of title 51. Section 619(a) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16798(a)) provides that not more than 180 days after December 30, 2005, the Administrator of the National Aeronautics and Space Administration shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report describing action taken by the National Aeronautics and Space Administration to implement the recommendations contained in Government Accountability Office Report No. 04-639.

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16798(b) .....	51 U.S.C. 40909
42 U.S.C. 16811 .....	51 U.S.C. 50116
42 U.S.C. 16821 .....	51 U.S.C. 30306
42 U.S.C. 16822 .....	51 U.S.C. 31301
42 U.S.C. 16823 .....	51 U.S.C. 30704
42 U.S.C. 16824 .....	Not repealed but omitted from text of title 51. Section 710 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16824) provides that not later than one year after December 30, 2005, the Comptroller General shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a review of the National Aeronautics and Space Administration's enhanced use leasing pilot program established by section 315 of the National Aeronautics and Space Administration Act of 1958 (42 U.S.C. 2459j).
42 U.S.C. 16831 .....	Not repealed but omitted from text of title 51. Section 721 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16831) provides that the National Science Foundation shall continue to collect statistically reliable data on the field of degree of college-educated individuals to fulfill certain statutory obligations, but if the Director of the National Science Foundation determines that there is a legal impediment to the continued collection of this data, the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate are to be informed not later than 180 days after December 30, 2005.
42 U.S.C. 16832(a) .....	Not repealed but omitted from text of title 51. Section 722(a) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16832(a)) provides that the Director of the National Science Foundation shall charge the Mathematical and Physical Sciences Advisory Committee with conducting a review of the astronomical facilities supported by the Foundation to determine the appropriate balance between supporting the operation of existing facilities and supporting the design, development, and eventual operation of new facilities. No later than June 30, 2006, the review is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16832(b) .....	Not repealed but omitted from text of title 51. Section 722(b) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16832(b)) provides that the Director of the National Science Foundation shall develop a plan to facilitate more thorough design and development of facilities that can be considered for funding through the Major Research Equipment and Facilities Construction account. No later than June 30, 2006, the plan is to be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.
42 U.S.C. 16841 .....	51 U.S.C. 70701
42 U.S.C. 16842 .....	51 U.S.C. 70702
42 U.S.C. 16843 .....	51 U.S.C. 70703
42 U.S.C. 16844 .....	51 U.S.C. 70704
42 U.S.C. 16845 .....	51 U.S.C. 70705
42 U.S.C. 16846 .....	51 U.S.C. 70706
42 U.S.C. 16847 .....	51 U.S.C. 70707
42 U.S.C. 16848 .....	51 U.S.C. 70708
42 U.S.C. 16849 .....	51 U.S.C. 70709

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 16850 .....	51 U.S.C. 70710
42 U.S.C. 17701 .....	Not repealed but omitted from text of title 51. Section 2 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17701) provides findings related to the programs and activities of the National Aeronautics and Space Administration.
42 U.S.C. 17702 .....	Not repealed but omitted from text of title 51. Section 3 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17702) provides definitions applicable in the Act.
42 U.S.C. 17711 .....	51 U.S.C. 60501
42 U.S.C. 17712(a) .....	Not repealed but omitted from text of title 51. Section 204(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17712(a)) provides a sense of Congress related to transitioning experimental sensors and missions into operational monitoring systems.
42 U.S.C. 17712(b) .....	51 U.S.C. 60502(a)
42 U.S.C. 17712(c) .....	51 U.S.C. 60502(b)
42 U.S.C. 17712(d) .....	51 U.S.C. 60502(c)
42 U.S.C. 17713(a) .....	51 U.S.C. 60503
42 U.S.C. 17713(b) .....	Not repealed but omitted from text of title 51. Section 206(b) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17713(b)) provides that no later than 90 days after October 15, 2008, the Administrator of the National Aeronautics and Space Administration shall transmit a new baseline report consistent with section 103(b)(2) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16613(b)(2)), which is restated as section 30105(c)(2) of title 51.
42 U.S.C. 17714 .....	51 U.S.C. 60504
42 U.S.C. 17721 .....	51 U.S.C. 40702
42 U.S.C. 17722 .....	51 U.S.C. 40703
42 U.S.C. 17723(a) .....	Not repealed but omitted from text of title 51. Section 304(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17723(a)) provides a finding and declaration related to the need for establishing a research program to assess the impact of commercial supersonic flight operations in order to set sonic boom standards.
42 U.S.C. 17723(b) .....	51 U.S.C. 40704(a)
42 U.S.C. 17723(c) .....	51 U.S.C. 40704(b)
42 U.S.C. 17724 .....	51 U.S.C. 40104
42 U.S.C. 17731 .....	51 U.S.C. 70504
42 U.S.C. 17732(a) .....	51 U.S.C. 70505(a)
42 U.S.C. 17732(b) .....	51 U.S.C. 70505(b)
42 U.S.C. 17732(c) .....	Not repealed but omitted from text of title 51. Section 404(c) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17732(c)) provides a sense of Congress related to using commercial services to the maximum extent practicable in support of lunar outpost activities.
42 U.S.C. 17733(a) .....	Not repealed but omitted from text of title 51. Section 405(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17733(a)) provides a statutory declaration that a robust program of long-term exploration-related technology research and development will be essential for the success and sustainability of any enduring initiative of human and robotic exploration of the solar system.
42 U.S.C. 17733(b) .....	51 U.S.C. 70506
42 U.S.C. 17734 .....	51 U.S.C. 71301
42 U.S.C. 17741 .....	51 U.S.C. 70507
42 U.S.C. 17742 .....	51 U.S.C. 70508

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 17751(a) .....	51 U.S.C. 70907
42 U.S.C. 17751(b) .....	Not repealed but omitted from text of title 51. Section 601(b) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17751(b)) provides that the Administrator of the National Aeronautics and Space Administration shall, no later than 9 months after October 15, 2008, submit to certain committees of Congress a plan to support the operations and utilization of the International Space Station beyond fiscal year 2015 for a period of at least 5 years.
42 U.S.C. 17752 .....	51 U.S.C. 70906
42 U.S.C. 17753 .....	Not repealed but omitted from text of title 51. Section 603 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17753) provides a declaration related to the importance of ensuring the continued viability and productivity of the International Space Station and provides that the Administrator of the National Aeronautics and Space Administration shall develop a contingency plan to ensure the continued viability and productivity of the International Space Station in the event that United States commercial cargo resupply services are not available during an extended period after the Space Shuttle is retired. The contingency plan must be delivered to certain committees of Congress no later than one year after October 15, 2008.
42 U.S.C. 17761 .....	Not repealed but omitted from text of title 51. Section 613 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17761) provides that the Administrator of the National Aeronautics and Space Administration shall develop certain plans related to termination of the Space Shuttle program. One plan is required to be submitted to Congress not later than 90 days after October 15, 2008. The other plan is required to be submitted to Congress not later than 180 days after October 15, 2008. The Administrator of the National Aeronautics and Space Administration is also required to establish a Space Shuttle Transition Liaison Office, which shall terminate 2 years after completion of the last Space Shuttle flight.
42 U.S.C. 17771 .....	Not repealed but omitted from text of title 51. Section 621 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17771) provides that the Administrator of the National Aeronautics and Space Administration shall develop a strategy for providing domestic commercial launch services in support of small and medium-sized Science, Space Operations, and Exploration missions, and that the Administrator of the National Aeronautics and Space Administration shall, no later than 90 days after October 15, 2008, transmit to certain committees of Congress a report related to the strategy.
42 U.S.C. 17781(a) .....	Not repealed but omitted from text of title 51. Section 704(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17781(a)) provides a sense of Congress related to the unique opportunity the International Space Station offers for Federal agencies to engage students in science, technology, engineering, and mathematics education, and the provision encourages the National Aeronautics and Space Administration to include other Federal agencies in its planning efforts to use the International Space Station National Laboratory.
42 U.S.C. 17781(b) .....	51 U.S.C. 40903(d)
42 U.S.C. 17781(c) .....	51 U.S.C. 40311
42 U.S.C. 17791(a) .....	51 U.S.C. 71101

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 17791(b) .....	Not repealed but omitted from text of title 51. Section 801(b) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17791(b)) provides a sense of Congress related to near-Earth object program activities providing benefits to the scientific and exploration activities of the National Aeronautics and Space Administration.
42 U.S.C. 17792 .....	Not repealed but omitted from text of title 51. Section 802 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17792) provides findings related the threat of collision of near-Earth objects with Earth.
42 U.S.C. 17793 .....	51 U.S.C. 71102
42 U.S.C. 17794 .....	51 U.S.C. 71103
42 U.S.C. 17795 .....	51 U.S.C. 71104
42 U.S.C. 17801 .....	51 U.S.C. 50111(b)
42 U.S.C. 17811(a) .....	51 U.S.C. 31502
42 U.S.C. 17811(b), (c) .....	Not repealed but omitted from text of title 51. Section 1002(b) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17811(b)) provides that the Administrator of the National Aeronautics and Space Administration shall determine and prioritize the maintenance and upgrade backlog at each of the National Aeronautics and Space Administration's Centers and associated facilities, and shall develop a strategy and budget plan to reduce the backlog by 50 percent over the next five years. Section 1002(c) of the Act (42 U.S.C. 17811(c)) requires a report to Congress on the results of activities undertaken to carry out subsection (b). The report is to be delivered concurrently with delivery of the fiscal year 2011 budget request.
42 U.S.C. 17812(a) .....	51 U.S.C. 31503
42 U.S.C. 17812(b) .....	Not repealed but omitted from text of title 51. Section 1003(b) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17812(b)) provides that the Administrator of the National Aeronautics and Space Administration shall enter into an arrangement for an independent external review of the Administration's laboratories and that results of the review shall be provided to certain committees of Congress no later than 18 months after October 15, 2008.
42 U.S.C. 17821(a) .....	Not repealed but omitted from text of title 51. Section 1102(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17821(a)) provides a finding related to the need for space traffic management.
42 U.S.C. 17821(b) .....	51 U.S.C. 71302
42 U.S.C. 17822 .....	51 U.S.C. 31302
42 U.S.C. 17823 .....	51 U.S.C. 20305
42 U.S.C. 17824 .....	51 U.S.C. 30305
42 U.S.C. 17825(a) .....	Not repealed but omitted from text of title 51. Section 1109(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17825(a)) provides a sense of Congress that the National Aeronautics and Space Administration should not dilute, distort, suppress, or impede scientific research or the dissemination of scientific research.
42 U.S.C. 17825(b) .....	Not repealed but omitted from text of title 51. Section 1109(b) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17825(b)) provides that, within 60 days after October 15, 2008, the Comptroller General shall initiate a study to be completed within 270 days and shall transmit a report to Congress setting forth findings, conclusions, and recommendations.
42 U.S.C. 17825(c) .....	51 U.S.C. 60506

## Disposition Table—Continued

Former United States Code Section	Disposition
42 U.S.C. 17826 .....	Not repealed but omitted from text of title 51. Section 1111 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17826) provides that, within 12 months after October 15, 2008, the Director of Office of Science and Technology Policy, in conjunction with others, shall develop a plan and initiate an inventory of natural methane stocks and fluxes in the polar region of the United States.
42 U.S.C. 17827 .....	51 U.S.C. 30310
42 U.S.C. 17828 .....	51 U.S.C. 31504
42 U.S.C. 17829 .....	51 U.S.C. 31505
49 U.S.C. 70101 .....	51 U.S.C. 50901
49 U.S.C. 70102 .....	51 U.S.C. 50902
49 U.S.C. 70103 .....	51 U.S.C. 50903
49 U.S.C. 70104 .....	51 U.S.C. 50904
49 U.S.C. 70105 .....	51 U.S.C. 50905
49 U.S.C. 70105a .....	51 U.S.C. 50906
49 U.S.C. 70106 .....	51 U.S.C. 50907
49 U.S.C. 70107 .....	51 U.S.C. 50908
49 U.S.C. 70108 .....	51 U.S.C. 50909
49 U.S.C. 70109 .....	51 U.S.C. 50910
49 U.S.C. 70109a .....	51 U.S.C. 50911
49 U.S.C. 70110 .....	51 U.S.C. 50912
49 U.S.C. 70111 .....	51 U.S.C. 50913
49 U.S.C. 70112 .....	51 U.S.C. 50914
49 U.S.C. 70113 .....	51 U.S.C. 50915
49 U.S.C. 70114 .....	51 U.S.C. 50916
49 U.S.C. 70115 .....	51 U.S.C. 50917
49 U.S.C. 70116 .....	51 U.S.C. 50918
49 U.S.C. 70117 .....	51 U.S.C. 50919
49 U.S.C. 70118 .....	51 U.S.C. 50920
49 U.S.C. 70119 .....	51 U.S.C. 50921
49 U.S.C. 70120 .....	51 U.S.C. 50922
49 U.S.C. 70121 .....	51 U.S.C. 50923
49 U.S.C. 70301 .....	51 U.S.C. 51101
49 U.S.C. 70302 .....	51 U.S.C. 51102
49 U.S.C. 70303 .....	51 U.S.C. 51103
49 U.S.C. 70304 .....	51 U.S.C. 51104
49 U.S.C. 70305 .....	51 U.S.C. 51105
Public Law 101-611, § 123 .....	51 U.S.C. 70901 (Section 123 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991 (Public Law 101-611, 104 Stat. 3204), which was not previously classified to the United States Code, is re-stated as section 70901 of title 51.)

## SECTION-BY-SECTION ANALYSIS

## SECTION 1—TABLE OF CONTENTS

Section 1 of the bill provides a table of contents for the Act.

## SECTION 2—PURPOSE; CONFORMITY WITH ORIGINAL INTENT

Section 2(a) of the bill provides that the purpose is to codify certain existing laws related to national and commercial space programs as a positive law title of the United States Code.

Section 2(b) of the bill provides a statement of intent with respect to the codification of existing law (see “Conformity With Original Intent” above).

SECTION 3—ENACTMENT OF TITLE 51, UNITED STATES CODE

Section 3 of the bill enacts title 51, United States Code. For each section of title 51, the source provision citations, along with any revision notes, are set out below.

## TITLE 51—NATIONAL AND COMMERCIAL SPACE PROGRAMS

### Subtitle I—General

Chap.		Sec.
101.	Definitions .....	10101

### Subtitle II—General Program and Policy Provisions

201.	National Aeronautics and Space Program .....	20101
203.	Responsibilities and Vision .....	20301

### Subtitle III—Administrative Provisions

301.	Appropriations, Budgets, and Accounting .....	30101
303.	Contracting and Procurement .....	30301
305.	Management and Review .....	30501
307.	International Cooperation and Competition .....	30701
309.	Awards .....	30901
311.	Safety .....	31101
313.	Healthcare .....	31301
315.	Miscellaneous .....	31501

### Subtitle IV—Aeronautics and Space Research and Education

401.	Aeronautics .....	40101
403.	National Space Grant College and Fellowship Program .....	40301
405.	Biomedical Research in Space .....	40501
407.	Environmentally Friendly Aircraft .....	40701
409.	Miscellaneous .....	40901

**Subtitle V—Programs Targeting Commercial Opportunities**

501. Space Commerce ..... 50101  
 503. Commercial Reusable In-Space Transportation ..... 50301  
 505. Commercial Space Competitiveness ..... 50501  
 507. Office of Space Commercialization ..... 50701

**Subtitle VI—Earth Observations**

601. Land Remote Sensing Policy ..... 60101  
 603. Remote Sensing ..... 60301  
 605. Earth Science ..... 60501

**Subtitle VII—Access to Space**

701. Use of Space Shuttle or Alternatives ..... 70101  
 703. Shuttle Pricing Policy for Commercial and Foreign Users ..... 70301  
 705. Exploration Initiatives ..... 70501  
 707. Human Space Flight Independent Investigation Commission ..... 70701  
 709. International Space Station ..... 70901  
 711. Near-Earth Objects ..... 71101  
 713. Cooperation for Safety Among Spacefaring Nations ..... 71301

**Subtitle I—General**

**CHAPTER 101—DEFINITIONS**

Sec.  
 10101. Definitions.

SECTION 10101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
10101 .....	(no source)	

Title-wide definitions for the terms “Administration” and “Administrator” are added for clarity and convenience.

**Subtitle II—General Program and Policy Provisions**

**CHAPTER 201—NATIONAL AERONAUTICS AND SPACE PROGRAM**

SUBCHAPTER I—SHORT TITLE, DECLARATION OF POLICY, AND DEFINITIONS

Sec.  
 20101. Short title.  
 20102. Congressional declaration of policy and purpose.  
 20103. Definitions.

SUBCHAPTER II—COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

- 20111. National Aeronautics and Space Administration.
- 20112. Functions of the Administration.
- 20113. Powers of the Administration in performance of functions.
- 20114. Administration and Department of Defense coordination.
- 20115. International cooperation.
- 20116. Reports to Congress.
- 20117. Disposal of excess land.

SUBCHAPTER III—GENERAL ADMINISTRATIVE PROVISIONS

- 20131. Public access to information.
- 20132. Security requirements.
- 20133. Permission to carry firearms.
- 20134. Arrest authority.
- 20135. Property rights in inventions.
- 20136. Contributions awards.
- 20137. Malpractice and negligence suits against United States.
- 20138. Insurance and indemnification.
- 20139. Insurance for experimental aerospace vehicles.
- 20140. Appropriations.
- 20141. Misuse of agency name and initials.
- 20142. Contracts regarding expendable launch vehicles.
- 20143. Full cost appropriations account structure.
- 20144. Prize authority.
- 20145. Lease of non-excess property.
- 20146. Retrocession of jurisdiction.
- 20147. Recovery and disposition authority.

SUBCHAPTER IV—UPPER ATMOSPHERE RESEARCH

- 20161. Congressional declaration of purpose and policy.
- 20162. Definition of upper atmosphere.
- 20163. Program authorized.
- 20164. International cooperation.

SUBCHAPTER I—SHORT TITLE, DECLARATION OF POLICY, AND DEFINITIONS

SECTION 20101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20101 .....	(no source)	

Chapter 201 of title 51 restates the National Aeronautics and Space Act of 1958. Although short titles are generally eliminated as unnecessary in positive law titles of the United States Code, in this case it was suggested that the short title “National Aeronautics and Space Act” be provided for convenience.

## SECTION 20102

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20102 .....	42 U.S.C. 2451.	Pub. L. 85-568, title I, § 102, July 29, 1958, 72 Stat. 426; Pub. L. 94-413, § 15(a), (b), Sept. 17, 1976, 90 Stat. 1270; Pub. L. 95-238, title III, § 311, Feb. 25, 1978, 92 Stat. 83; Pub. L. 95-401, § 7, Sept. 30, 1978, 92 Stat. 860; Pub. L. 98-361, title I, § 110, July 16, 1984, 98 Stat. 426; Pub. L. 100-685, title II, § 214, Nov. 17, 1988, 102 Stat. 4093; Pub. L. 106-391, title III, § 302(a), Oct. 30, 2000, 114 Stat. 1591; Pub. L. 109-155, title III, § 321(d)(2), Dec. 30, 2005, 119 Stat. 2923.

In subsection (b), the words “in conformity with section 201(e)”, which appeared at the end of the subsection, are omitted as obsolete. Section 201 of Public Law 85-568, which was classified to former section 2471 of title 42 (last appearing in the 1970 edition of the United States Code), established the National Aeronautics and Space Council, with the functions of the Council specified in section 201(e). Those functions included advising the President “as he may request” with respect to promoting cooperation and resolving differences among agencies of the United States engaged in aeronautical and space activities. The words are obsolete because section 3(a)(4) of Reorganization Plan No. 1 of 1973 (5 App. U.S.C.), abolished the National Aeronautics and Space Council, including the office of Executive Secretary of the Council, together with its functions.

In subsection (c), the words “(as established by title II of this Act)”, which appeared after “Administration”, are omitted as unnecessary.

In subsection (d), the word “and”, appearing at the end of paragraph (8), is omitted as unnecessary because of the introductory words “one or more of the following”.

## SECTION 20103

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20103 .....	42 U.S.C. 2452.	Pub. L. 85-568, title I, § 103, July 29, 1958, 72 Stat. 427; Pub. L. 98-52, title I, § 108, July 15, 1983, 97 Stat. 285.

In paragraph (1)(A), the word “Earth’s” is capitalized for consistency in title 51.

## SUBCHAPTER II—COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

## SECTION 20111

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20111 .....	42 U.S.C. 2472.	Pub. L. 85-568, title II, § 202, July 29, 1958, 72 Stat. 429; Pub. L. 88-426, title III, § 305(12), Aug. 14, 1964, 78 Stat. 423.

## SECTION 20112

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20112 .....	42 U.S.C. 2473(a), (b).	Pub. L. 85-568, title II, § 203(a), (b), July 29, 1958, 72 Stat. 429; Pub. L. 93-409, § 4, Sept. 3, 1974, 88 Stat. 1070; Pub. L. 94-413, § 15(c), Sept. 17, 1976, 90 Stat. 1270; Pub. L. 95-401, § 6, Sept. 30, 1978, 92 Stat. 860; Pub. L. 101-611, title I, § 107, Nov. 16, 1990, 104 Stat. 3197.

## SECTION 20113

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20113 .....	42 U.S.C. 2473(c).	Pub. L. 85-568, title II, § 203(c), formerly § 203(b), July 29, 1958, 72 Stat. 429; Pub. L. 86-20, May 13, 1959, 73 Stat. 21; Pub. L. 86-481, § 5, June 1, 1960, 74 Stat. 153; Pub. L. 87-367, title II, § 206(a), Oct. 4, 1961, 75 Stat. 791; Pub. L. 87-584, § 6, Aug. 14, 1962, 76 Stat. 384; Pub. L. 87-793, § 1001(f), Oct. 11, 1962, 76 Stat. 864; Pub. L. 88-426, title III, § 306(d), Aug. 14, 1964, 78 Stat. 429; Pub. L. 88-448, title IV, § 402(a)(34), Aug. 10, 1964, 78 Stat. 495; Pub. L. 91-646, title II, § 220(a)(2), Jan. 2, 1971, 84 Stat. 1903; Pub. L. 93-74, § 6, July 23, 1973, 87 Stat. 174; Pub. L. 93-316, § 6, June 22, 1974, 88 Stat. 243; renumbered § 203(c), Pub. L. 93-409, § 4, Sept. 3, 1974, 88 Stat. 1070; Pub. L. 96-48, § 6(a), Aug. 8, 1979, 93 Stat. 348; Pub. L. 108-201, § 2(a), Feb. 24, 2004, 118 Stat. 461.

In subsection (b), in the matter before paragraph (1), the words “chapter 51 and subchapter III of chapter 53 of title 5” are substituted for “the Classification Act of 1949, as amended” on authority of section 7(b) of Public Law 89-554 (80 Stat. 631), the first section of which enacted Title 5, Government Organization and Employees.

In subsection (c)(2), the words “section 8141 of title 40” are substituted for “the Act of March 3, 1877 (40 U.S.C. 34)” on authority of section 5(c) of Public Law 107-217 (116 Stat. 1303), the first section of which enacted Title 40, Public Buildings, Property, and Works.

In subsection (c)(4), the words “in accordance with the provisions of chapters 1 to 11 of title 40 and in accordance with title III of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 251 et seq.)” are substituted for “in accordance with the provisions of the Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. 471 et seq.)” on authority of section 5(c) of Public Law 107-217 (116 Stat. 1303), the first section of which enacted Title 40, Public Buildings, Property, and Works.

In subsection (e), the words “subsections (a) and (b) of section 3324 of title 31” are substituted for “section 3648 of the Revised Statutes, as amended (31 U.S.C. 529)” on authority of section 4(b)

of Public Law 97–258 (96 Stat. 1067), the first section of which enacted Title 31, Money and Finance.

In subsection (i), the words “maximum rate payable under section 5376 of title 5” are substituted for “rate for GS–18” because of section 101(c) of the Federal Employees Pay Comparability Act of 1990 (enacted by §529 of Public Law 101–509, 5 U.S.C. 5376 note).

In subsection (k)(1), the words “section 1302 of title 40” are substituted for “section 321 of the Act of June 30, 1932 (47 Stat. 412; 40 U.S.C. 303b)” on authority of section 5(c) of Public Law 107–217 (116 Stat. 1303), the first section of which enacted Title 40, Public Buildings, Property, and Works.

## SECTION 20114

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20114(a) .....	42 U.S.C. 2474(b).	Pub. L. 85–568, title II, §204(b), (c), July 29, 1958, 72 Stat. 431.
20114(b) .....	42 U.S.C. 2474(c).	

In subsection (a), the words “through the President” are substituted for “through the Liaison Committee” because the Civilian-Military Liaison Committee, which was established by section 204(a) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2474(a)), was abolished and its functions, together with the functions of its chairman and other officers, were transferred to the President by sections 1(e) and 3(a) of Reorganization Plan No. 4 of 1965 (5 App. U.S.C.).

In subsection (b), the words “as provided in section 201 (e)”, which appeared at the end of the subsection, are omitted as obsolete. Section 201 of Public Law 85–568, which was classified to former section 2471 of title 42 (last appearing in the 1970 edition of the United States Code), established the National Aeronautics and Space Council, with the functions of the Council specified in section 201(e). Those functions included advising the President “as he may request” with respect to promoting cooperation and resolving differences among agencies of the United States engaged in aeronautical and space activities. The words are obsolete because section 3(a)(4) of Reorganization Plan No. 1 of 1973 (5 App. U.S.C.), abolished the National Aeronautics and Space Council, including the office of Executive Secretary of the Council, together with its functions.

## SECTION 20115

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20115 .....	42 U.S.C. 2475.	Pub. L. 85–568, title II, §205, July 29, 1958, 72 Stat. 432.

SECTION 20116

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20116 .....	42 U.S.C. 2476.	Pub. L. 85-568, title II, §206, July 29, 1958, 72 Stat. 432; Pub. L. 92-68, §7, Aug. 6, 1971, 85 Stat. 177; Pub. L. 106-391, title III, §302(b), Oct. 30, 2000, 114 Stat. 1591.

In subsections (a)(2) and (b), the words “section 102(c) of this Act”, which appear in section 206 of Public Law 85-568 (72 Stat. 432), are treated as referring to section 102(d), rather than section 102(c), of Public Law 85-568 because of the redesignation done by section 110(a)(2) of the National Aeronautics and Space Administration Authorization Act, 1985 (Public Law 98-361, 98 Stat. 426). Section 102(d) of Public Law 85-568 is restated as section 20102(d) of title 51.

SECTION 20117

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20117 .....	42 U.S.C. 2476a.	Pub. L. 85-568, title II, §207, as added Pub. L. 93-74, §7, July 23, 1973, 87 Stat. 175; amended Pub. L. 103-437, §15(j), Nov. 2, 1994, 108 Stat. 4593.

In paragraph (1), the words “Committee on Science and Technology” are substituted for “Committee on Science, Space, and Technology” on authority of section 1(a)(10) of Public Law 104-14 (2 U.S.C. note prec. 21), Rule X(1)(n) of the Rules of the House of Representatives, adopted by House Resolution No. 5 (106th Congress, January 6, 1999), and Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

SUBCHAPTER III—GENERAL ADMINISTRATIVE PROVISIONS

SECTION 20131

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20131(a) .....	42 U.S.C. 2454(a) (words before proviso).	Pub. L. 85-568, title III, §303, July 29, 1958, 72 Stat. 433; Pub. L. 102-588, title V, §509, Nov. 4, 1992, 106 Stat. 5129.
20131(b) .....	42 U.S.C. 2454(b).	
20131(c) .....	42 U.S.C. 2454(a) (proviso).	

SECTION 20132

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20132 .....	42 U.S.C. 2455(a).	Pub. L. 85-568, title III, §304(a), July 29, 1958, 72 Stat. 433; 1978 Reorg. Plan No. 2, §102, eff. Jan. 1, 1979, 43 F.R. 36037, 92 Stat. 3783.

The words “Director of the Office of Personnel Management” are substituted for “Civil Service Commission” because of section 102 of Reorganization Plan No. 2 of 1978 (5 App U.S.C.).

## SECTION 20133

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20133 .....	42 U.S.C. 2456.	Pub. L. 85-568, title III, § 304(e), July 29, 1958, 72 Stat. 435.

## SECTION 20134

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20134 .....	42 U.S.C. 2456a.	Pub. L. 85-568, title III, § 304(f), as added Pub. L. 100-685, title II, § 206, Nov. 17, 1988, 102 Stat. 4090.

## SECTION 20135

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20135 .....	42 U.S.C. 2457.	Pub. L. 85-568, title III, § 305, July 29, 1958, 72 Stat. 435; Pub. L. 96-517, § 7(b), Dec. 12, 1980, 94 Stat. 3027; Pub. L. 97-96, § 7, Dec. 21, 1981, 95 Stat. 1210; Pub. L. 97-164, title I, § 162(3), Apr. 2, 1982, 96 Stat. 49; Pub. L. 98-622, title II, § 205(c), Nov. 8, 1984, 98 Stat. 3388; Pub. L. 106-113, div. B, § 1000(a)(9) [title IV, § 4732(b)(20)], Nov. 29, 1999, 113 Stat. 1536, 1501A-585.

## SECTION 20136

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20136(a) .....	42 U.S.C. 2458(a).	Pub. L. 85-568, title III, § 306, July 29, 1958, 72 Stat. 437.
20136(b) .....	42 U.S.C. 2458(b) (1st sentence).	
20136(c) .....	42 U.S.C. 2458(b) (par. (1) of last sentence).	
20136(d) .....	42 U.S.C. 2458(b) (par. (2) of last sentence).	

In subsections (c) and (d), the words “No award may be made under subsection (a)” are substituted for “No award may be made under subsection (a) with respect to any contribution” for clarity and to eliminate unnecessary words.

## SECTION 20137

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20137 .....	42 U.S.C. 2458a.	Pub. L. 85-568, title III, § 307, as added Pub. L. 94-464, § 3, Oct. 8, 1976, 90 Stat. 1988.

In subsection (a), the word “hereafter” is omitted as unnecessary. In subsection (b), in the last sentence, commas are added after “brought” and “Attorney General” for clarity.

In subsection (e), the words “wrongful act or omission” are substituted for “wrongful act of omission” to correct an error in the law.

SECTION 20138

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20138 .....	42 U.S.C. 2458b.	Pub. L. 85-568, title III, § 308, as added Pub. L. 96-48, § 6(b)(2), Aug. 8, 1979, 93 Stat. 348.

SECTION 20139

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20139 .....	42 U.S.C. 2458c.	Pub. L. 85-568, title III, § 309, formerly title III, as added Pub. L. 106-74, title IV, § 435(a), Oct. 20, 1999, 113 Stat. 1097; designated § 309 and amended Pub. L. 106-391, title III, § 324(a)(2), (b), Oct. 30, 2000, 114 Stat. 1599, 1600; Pub. L. 109-155, title VII, § 702, Dec. 30, 2005, 119 Stat. 2936.

In subsection (d)(3), the words “without regard to the date on which the Administration entered into the waiver” are substituted for “without regard to whether it was entered into before, on, or after the date of enactment of this Act” to avoid an ambiguity in the law. Literally, the words “the date of enactment of this Act” mean July 29, 1958, the date of enactment of Public Law 85-568. However, the intended meaning of the words “the date of enactment of this Act” is probably October 20, 1999, the date of enactment of Public Law 106-74. The question as to which date is actually intended is rendered inconsequential by the words “before, on, or after”.

SECTION 20140

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20140 .....	42 U.S.C. 2459.	Pub. L. 85-568, title III, § 310, formerly § 307, July 29, 1958, 72 Stat. 438; Pub. L. 88-113, § 6, Sept. 6, 1963, 77 Stat. 144; renumbered § 308, Pub. L. 94-464, § 3, Oct. 8, 1976, 90 Stat. 1988; renumbered § 309, Pub. L. 96-48, § 6(b)(1), Aug. 8, 1979, 93 Stat. 348; renumbered § 310, Pub. L. 106-391, title III, § 324(a)(1), Oct. 30, 2000, 114 Stat. 1599.

## SECTION 20141

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20141 .....	42 U.S.C. 2459b.	Pub. L. 85-568, title III, § 311, formerly § 310, as added Pub. L. 98-52, title I, § 107, July 15, 1983, 97 Stat. 284; renumbered § 311, Pub. L. 106-391, title III, § 324(a)(1), Oct. 30, 2000, 114 Stat. 1599.

## SECTION 20142

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20142 .....	42 U.S.C. 2459c.	Pub. L. 85-568, title III, § 312, formerly § 311, as added Pub. L. 100-147, title I, § 117, Oct. 30, 1987, 101 Stat. 867; renumbered § 312, Pub. L. 106-391, title III, § 324(a)(1), Oct. 30, 2000, 114 Stat. 1599.

In subsection (a), the word “expendable” is substituted for “expendabe” to correct an error in the law.

## SECTION 20143

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20143 .....	42 U.S.C. 2459f.	Pub. L. 85-568, title III, § 313, formerly § 312, as added Pub. L. 106-377, § 1(a)(1) [title IV, § 431], Oct. 27, 2000, 114 Stat. 1441, 1441A-56; renumbered § 313 and amended, Pub. L. 108-199, div. G, title IV, § 417, Jan. 23, 2004, 118 Stat. 415; Pub. L. 108-447, div. I, title IV, § 417, Dec. 8, 2004, 118 Stat. 3339; Pub. L. 109-155, title II, § 201, Dec. 30, 2005, 119 Stat. 2915.

In subsection (a)(1), the words “for fiscal year 2007 and thereafter” are omitted as unnecessary.

## SECTION 20144

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20144 .....	42 U.S.C. 2459f-1.	Pub. L. 85-568, title III, § 314, as added Pub. L. 109-155, title I, § 104, Dec. 30, 2005, 119 Stat. 2910; Pub. L. 110-422, title XI, § 1105(b), Oct. 15, 2008, 122 Stat. 4809.

In subsection (i)(2), subparagraph (A) is added, and the words “provisions known as the Anti-Deficiency Act” are substituted for “the Anti-Deficiency Act (31 U.S.C. 1341)”, for clarity.

In subsection (i)(4), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

## SECTION 20145

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20145 .....	42 U.S.C. 2459j.	Pub. L. 85-568, title III, § 315, as added Pub. L. 108-7, div. K, title IV, § 418, Feb. 20, 2003, 117 Stat. 525; Pub. L. 110-161, div. B, title V, § 533(a)-(e), Dec. 26, 2007, 121 Stat. 1931; Pub. L. 110-422, title XI, § 1117(c), (d), Oct. 15, 2008, 122 Stat. 4814.

In subsection (f)(2), the word “Administration’s” is substituted for “Agency’s” for clarity.

In subsection (g), the words “10 years after December 26, 2007” are substituted for “on the date that is ten years after the date of the enactment of the Commerce, Justice, Science, and Related Agencies Appropriations Act of 2008” for consistency and to reflect the date of enactment of the Commerce, Justice, Science, and Related Agencies Appropriations Act, 2008 (Public Law 110-161, div. B, 121 Stat. 1884).

## SECTION 20146

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20146 .....	42 U.S.C. 2459k.	Pub. L. 85-568, title III, § 316, as added Pub. L. 109-155, title VII, § 701, Dec. 30, 2005, 119 Stat. 2935.

## SECTION 20147

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20147 .....	42 U.S.C. 2459l.	Pub. L. 85-568, title III, § 317, as added Pub. L. 109-155, title VII, § 705, Dec. 30, 2005, 119 Stat. 2936.

## SUBCHAPTER IV—UPPER ATMOSPHERE RESEARCH

## SECTION 20161

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20161 .....	42 U.S.C. 2481.	Pub. L. 85-568, title IV, § 401, as added Pub. L. 94-39, § 8, June 19, 1975, 89 Stat. 222.

## SECTION 20162

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20162 .....	42 U.S.C. 2482.	Pub. L. 85-568, title IV, § 402, as added Pub. L. 94-39, § 8, June 19, 1975, 89 Stat. 222.

## SECTION 20163

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20163 .....	42 U.S.C. 2483.	Pub. L. 85-568, title IV, § 403, as added Pub. L. 94-39, § 8, June 19, 1975, 89 Stat. 222.

## SECTION 20164

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20164 .....	42 U.S.C. 2484.	Pub. L. 85-568, title IV, § 404, as added Pub. L. 94-39, § 8, June 19, 1975, 89 Stat. 223.

**CHAPTER 203—RESPONSIBILITIES AND VISION**

Sec.

20301. General responsibilities.  
 20302. Vision for space exploration.  
 20303. Contribution to innovation.  
 20304. Basic research enhancement.  
 20305. National Academies decadal surveys.

## SECTION 20301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20301 .....	42 U.S.C. 16611(a).	Pub. L. 109-155, title I, § 101(a), Dec. 30, 2005, 119 Stat. 2897.

## SECTION 20302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20302 .....	42 U.S.C. 16611(b).	Pub. L. 109-155, title I, § 101(b), Dec. 30, 2005, 119 Stat. 2898.

## SECTION 20303

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20303(a) .....	42 U.S.C. 16611a(a).	Pub. L. 110-69, title II, § 2001(a), (b), (c), (e), Aug. 9, 2007, 121 Stat. 582.
20303(b) .....	42 U.S.C. 16611a(b).	
20303(c) .....	42 U.S.C. 16611a(c).	
20303(d) .....	42 U.S.C. 16611a(e).	

## SECTION 20304

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20304 .....	42 U.S.C. 16658.	Pub. L. 110-69, title II, § 2003, Aug. 9, 2007, 121 Stat. 583.

SECTION 20305

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
20305 .....	42 U.S.C. 17823.	Pub. L. 110-422, title XI, § 1104, Oct. 15, 2008, 122 Stat. 4809.

**Subtitle III—Administrative Provisions**

**CHAPTER 301—APPROPRIATIONS, BUDGETS, AND ACCOUNTING**

- Sec.
- 30101. Prior authorization of appropriations required.
- 30102. Working capital fund.
- 30103. Budgets.
- 30104. Baselines and cost controls.

SECTION 30101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30101 .....	42 U.S.C. 2460.	Pub. L. 86-45, § 4, June 15, 1959, 73 Stat. 75.

The word “hereafter” is omitted as unnecessary.

SECTION 30102

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30102 .....	42 U.S.C. 2459i.	Pub. L. 108-7, div. K, title III, (last par. under heading “Administrative Provisions”, at 117 Stat. 520), Feb. 20, 2003, 117 Stat. 520.

SECTION 30103

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30103(a) .....	42 U.S.C. 16611(h)(1).	Pub. L. 109-155, title I, § 101(h)(1), (i), Dec. 30, 2005, 119 Stat. 2903.
30103(b) .....	42 U.S.C. 16611(i).	Pub. L. 110-161, div. B, title III, (7th par. under heading “Administrative Provisions”, at 121 Stat. 1919), Dec. 26, 2007, 121 Stat. 1919.
30103(c) .....	42 U.S.C. 16611b.	
30103(d) .....	42 U.S.C. 16611b note.	Pub. L. 111-8, div. B, title III, (3d proviso in par. under heading “Cross Agency Support”, at 123 Stat. 589), Mar. 11, 2009, 123 Stat. 589.

In subsection (a)(5), the source law’s reference to “section 104” of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155, 119 Stat. 2910) is translated as “section 20144” of title 51. Section 104 of the National Aeronautics and Space Administration Authorization Act of 2005 amended the National Aeronautics and Space Act of 1958 (Public Law 85-568,

72 Stat. 426) by inserting a new section 314, which is restated as section 20144 of title 51.

In subsection (b), in the matter before paragraph (1), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

In subsection (c), in the matter before paragraph (1), the words “For fiscal year 2009 and hereafter” are omitted as unnecessary.

#### SECTION 30104

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30104 .....	42 U.S.C. 16613.	Pub. L. 109–155, title I, § 103, Dec. 30, 2005, 119 Stat. 2907.

In subsections (b)(2), (c)(1), (d)(3), and (e)(1)(A), (2), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

### CHAPTER 303—CONTRACTING AND PROCUREMENT

Sec.

- 30301. Guaranteed customer base.
- 30302. Quality assurance personnel.
- 30303. Tracking and data relay satellite services.
- 30304. Award of contracts to small businesses and disadvantaged individuals.
- 30305. Outreach program.
- 30306. Small business contracting.
- 30307. Requirement for independent cost analysis.
- 30308. Cost effectiveness calculations.
- 30309. Use of abandoned and underutilized buildings, grounds, and facilities.
- 30310. Exception to alternative fuel procurement requirement.

#### SECTION 30301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30301 .....	42 U.S.C. 2459d.	Pub. L. 102–139, title III, (1st par. under heading “Administrative Provisions”, at 105 Stat. 771), Oct. 28, 1991, 105 Stat. 771.

The words “in this or any other Act with respect to any fiscal year” are omitted as unnecessary.

#### SECTION 30302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30302 .....	42 U.S.C. 2459e.	Pub. L. 102–195, § 19, Dec. 9, 1991, 105 Stat. 1615.

In subsection (a), the date “December 9, 1991” is substituted for “the date of enactment of this Act” to reflect the date of enactment

of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1992 (Public Law 102–195, 105 Stat. 1605).

In subsection (a), the words “that has been submitted to Congress as provided” are substituted for “described” for clarity.

## SECTION 30303

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30303(a) .....	42 U.S.C. 2463 (1st par.).	Pub. L. 95–76, § 6, July 30, 1977, 91 Stat. 315; Pub. L. 103–437, § 15(c)(3), Nov. 2, 1994, 108 Stat. 4592.
30303(b) .....	42 U.S.C. 2463 (last par.).	

In subsection (b), the words “Committee on Science and Technology” are substituted for “Committee on Science, Space, and Technology” on authority of section 1(a)(10) of Public Law 104–14 (2 U.S.C. note prec. 21), Rule X(1)(n) of the Rules of the House of Representatives, adopted by House Resolution No. 5 (106th Congress, January 6, 1999), and Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

In subsection (b), the word “hereafter” is omitted as unnecessary.

## SECTION 30304

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30304 .....	42 U.S.C. 2473b (1st par.).	Pub. L. 101–144, title III, (1st par. under heading “Small and Disadvantaged Business”, at 103 Stat. 863), Nov. 9, 1989, 103 Stat. 863; Pub. L. 109–155, title VI, § 611, Dec. 30, 2005, 119 Stat. 2932.

The word “Alaska” is substituted for “Alaskan” in the phrase “Alaska Native-serving institutions (as defined in section 317(b)(2) of that Act (20 U.S.C. 1059d(b)(2)))” for consistency with the term defined in section 317(b)(2) of the Higher Education Act of 1965 (20 U.S.C. 1059d(b)(2)).

## SECTION 30305

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30305 .....	42 U.S.C. 17824.	Pub. L. 110–422, title XI, § 1107, Oct. 15, 2008, 122 Stat. 4810.

In subsection (c), in the matter before paragraph (1), the date “October 15, 2008” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2008.

## SECTION 30306

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30306 .....	42 U.S.C. 16821.	Pub. L. 109–155, title VII, § 707, Dec. 30, 2005, 119 Stat. 2937.

## SECTION 30307

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30307 .....	42 U.S.C. 2459g.	Pub. L. 106–391, title III, § 301, Oct. 30, 2000, 114 Stat. 1591; Pub. L. 109–155, title VII, § 704, Dec. 30, 2005, 119 Stat. 2936.

In subsection (b), in the first sentence, the words “the Administrator shall conduct” are substituted for “the Administrator for the National Aeronautics and Space Administration shall conduct” to eliminate unnecessary words.

In subsection (b), in the last sentence, the word “experts” is substituted for “expertise” for clarity.

## SECTION 30308

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30308(a) .....	(no source)	
30308(b) .....	42 U.S.C. 2459h.	Pub. L. 106–391, title III, § 304, Oct. 30, 2000, 114 Stat. 1592.

In subsection (a), definitions of “commercial provider” and “State” are added to carry forward the appropriate definitions from section 3 of the National Aeronautics and Space Administration Authorization Act of 2000 (Public Law 106–391, 114 Stat. 1579, 1580).

## SECTION 30309

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30309 .....	42 U.S.C. 2473d.	Pub. L. 106–391, title III, § 325, Oct. 30, 2000, 114 Stat. 1600.

## SECTION 30310

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30310 .....	42 U.S.C. 17827.	Pub. L. 110–422, title XI, § 1112, Oct. 15, 2008, 122 Stat. 4811.

## CHAPTER 305—MANAGEMENT AND REVIEW

- Sec.  
 30501. Lessons learned and best practices.  
 30502. Whistleblower protection.

- 30503. Performance assessments.
- 30504. Assessment of science mission extensions.

SECTION 30501

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30501 .....	42 U.S.C. 16615.	Pub. L. 109-155, title I, § 107, Dec. 30, 2005, 119 Stat. 2912.

In subsection (a), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

In subsection (a), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155, 119 Stat. 2895).

SECTION 30502

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30502 .....	42 U.S.C. 16618.	Pub. L. 109-155, title I, § 110, Dec. 30, 2005, 119 Stat. 2914.

In subsection (a), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155, 119 Stat. 2895).

In subsections (a) and (d), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

In subsection (d), the words “Not later than February 15 of each year beginning February 15, 2007” are substituted for “Not later than February 15 of each year beginning with the year after the date of enactment of this Act” for clarity.

SECTION 30503

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30503 .....	42 U.S.C. 16651.	Pub. L. 109-155, title III, § 301, Dec. 30, 2005, 119 Stat. 2916.

In subsections (b) and (c), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155, 119 Stat. 2895).

In subsection (c), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

## SECTION 30504

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30504(a) .....	42 U.S.C. 16654(a) (matter before par. (1)).	Pub. L. 109–155, title III, § 304(a) (matter before par. (1)), (2), Dec. 30, 2005, 119 Stat. 2918.
30504(b) .....	42 U.S.C. 16654(a)(2).	

In subsection (a), the words “In addition—” are omitted as unnecessary.

## CHAPTER 307—INTERNATIONAL COOPERATION AND COMPETITION

Sec.

30701. Competitiveness and international cooperation.

30702. Foreign contract limitation.

30703. Foreign launch vehicles.

30704. Offshore performance of contracts for the procurement of goods and services.

## SECTION 30701

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30701(a) .....	42 U.S.C. 2475a(a).	Pub. L. 106–391, title I, § 126, Oct. 30, 2000, 114 Stat. 1585.
30701(b)(1) .....	(no source)	
30701(b)(2) .....	42 U.S.C. 2475a(b).	
30701(b)(3) .....	(no source)	

In subsection (b)(1), the definition of “United States commercial provider” is added to carry forward the appropriate definition from section 3 of the National Aeronautics and Space Administration Authorization Act of 2000 (Public Law 106–391, 114 Stat. 1580).

In subsection (b)(3), the description of national interests of the United States is added to carry forward the appropriate description of national interests of the United States from section 2(6) of the National Aeronautics and Space Administration Authorization Act of 2000 (Public Law 106–391, 114 Stat. 1578).

## SECTION 30702

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30702 .....	42 U.S.C. 2475b.	Pub. L. 106–391, title III, § 305, Oct. 30, 2000, 114 Stat. 1592.

## SECTION 30703

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30703 .....	42 U.S.C. 16614.	Pub. L. 109–155, title I, § 105, Dec. 30, 2005, 119 Stat. 2912.

In subsection (c), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment

of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

## SECTION 30704

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30704 .....	42 U.S.C. 16823.	Pub. L. 109–155, title VII, § 709, Dec. 30, 2005, 119 Stat. 2938.

In the matter before paragraph (1), the words “beginning with the first fiscal year after the date of enactment of this Act [December 30, 2005]” are omitted as obsolete.

## CHAPTER 309—AWARDS

Sec.

30901. Congressional Space Medal of Honor.

30902. Charles “Pete” Conrad Astronomy Awards.

## SECTION 30901

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30901(a) .....	42 U.S.C. 2461 (1st par.).	Pub. L. 91–76, § 1, Sept. 29, 1969, 83 Stat. 124.
30901(b) .....	42 U.S.C. 2461 (last par.).	Pub. L. 91–76, § 2, Sept. 29, 1969, 83 Stat. 124.

## SECTION 30902

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30902 .....	42 U.S.C. 16792.	Pub. L. 109–155, title VI, § 613, Dec. 30, 2005, 119 Stat. 2932.

## CHAPTER 311—SAFETY

Sec.

31101. Aerospace Safety Advisory Panel.

31102. Drug and alcohol testing.

## SECTION 31101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31101(a) .....	42 U.S.C. 2477(a) (1st, last sentences).	Pub. L. 90–67, § 6, Aug. 21, 1967, 81 Stat. 170; Pub. L. 94–307, § 8, June 4, 1976, 90 Stat. 681; Pub. L. 99–234, title I, § 107(f), Jan. 2, 1986, 99 Stat. 1759; Pub. L. 109–155, title I, § 106, Dec. 30, 2005, 119 Stat. 2912.
31101(b) .....	42 U.S.C. 2477(a) (3d sentence).	
31101(c) .....	42 U.S.C. 2477(a) (2d sentence).	
31101(d) .....	42 U.S.C. 2477(a) (4th, 5th sentences).	

## SECTION 31101—CONTINUED

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31101(e) .....	42 U.S.C. 2477(b).	

In subsection (d)(1)(B), the words “maximum rate payable under section 5376 of title 5” are substituted for “rate for GS–18” because of section 101(c) of the Federal Employees Pay Comparability Act of 1990 (Public Law 101–509, 5 U.S.C. 5376 note).

In subsection (e), the date “December 30, 2005” is substituted for “the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

## SECTION 31102

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31102(a) .....	42 U.S.C. 2473c(h).	Pub. L. 102–195, § 21(c)–(h), Dec. 9, 1991, 105 Stat. 1616.
31102(b) .....	42 U.S.C. 2473c(c).	
31102(c) .....	42 U.S.C. 2473c(d).	
31102(d) .....	42 U.S.C. 2473c(e).	
31102(e) .....	42 U.S.C. 2473c(f).	
31102(f) .....	42 U.S.C. 2473c(g).	

In subsection (b)(2), the words “within 18 months after the date of enactment of this Act” are omitted as obsolete.

In paragraphs (1) and (2) of subsection (c), and in subsection (f)(2), the date “December 9, 1991” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1992 (Public Law 102–195, 105 Stat. 1605).

## CHAPTER 313—HEALTHCARE

Sec.

31301. Healthcare program.

31302. Astronaut healthcare survey.

## SECTION 31301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31301 .....	42 U.S.C. 16822.	Pub. L. 109–155, title VII, § 708, Dec. 30, 2005, 119 Stat. 2938.

## SECTION 31302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31302 .....	42 U.S.C. 17822.	Pub. L. 110–422, title XI, § 1103, Oct. 15, 2008, 122 Stat. 4808.

**CHAPTER 315—MISCELLANEOUS**

Sec.

31501. Orbital debris.  
 31502. Maintenance of facilities.  
 31503. Laboratory productivity.  
 31504. Cooperative unmanned aerial vehicle activities.  
 31505. Development of enhanced-use lease policy.

**SECTION 31501**

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31501 .....	42 U.S.C. 16781.	Pub. L. 109–155, title VI, § 601, Dec. 30, 2005, 119 Stat. 2931.

**SECTION 31502**

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31502 .....	42 U.S.C. 17811(a).	Pub. L. 110–422, title X, § 1002(a), Oct. 15, 2008, 122 Stat. 4806.

**SECTION 31503**

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31503 .....	42 U.S.C. 17812(a).	Pub. L. 110–422, title X, § 1003(a), Oct. 15, 2008, 122 Stat. 4807.

**SECTION 31504**

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31504 .....	42 U.S.C. 17828.	Pub. L. 110–422, title XI, § 1116, Oct. 15, 2008, 122 Stat. 4813.

**SECTION 31505**

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
31505 .....	42 U.S.C. 17829.	Pub. L. 110–422, title XI, § 1117, Oct. 15, 2008, 122 Stat. 4813.

**Subtitle IV—Aeronautics and Space Research and Education****CHAPTER 401—AERONAUTICS****SUBCHAPTER I—GENERAL**

Sec.

40101. Definition of institution of higher education.

- 40102. Governmental interest in aeronautics research and development.
- 40103. Cooperation with other agencies on aeronautics activities.
- 40104. Cooperation among Mission Directorates.

SUBCHAPTER II—HIGH PRIORITY AERONAUTICS RESEARCH AND DEVELOPMENT PROGRAMS

- 40111. Fundamental research program.
- 40112. Research and technology programs.
- 40113. Airspace systems research.
- 40114. Aviation safety and security research.
- 40115. Aviation weather research.
- 40116. University-based Centers for Research on Aviation Training.

SUBCHAPTER III—SCHOLARSHIPS

- 40131. Aeronautics scholarships.

SUBCHAPTER IV—DATA REQUESTS

- 40141. Aviation data requests.

SUBCHAPTER I—GENERAL

SECTION 40101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40101 .....	42 U.S.C. 16701.	Pub. L. 109–155, title IV, § 401, Dec. 30, 2005, 119 Stat. 2923.

SECTION 40102

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40102 .....	42 U.S.C. 16711.	Pub. L. 109–155, title IV, § 411, Dec. 30, 2005, 119 Stat. 2923.

SECTION 40103

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40103 .....	42 U.S.C. 16712(b).	Pub. L. 110–69, title II, § 2002(b), Aug. 9, 2007, 121 Stat. 583.

The words “Next Generation Air Transportation System” are inserted before “Joint Planning and Development Office” for consistency with section 709 of the Vision 100—Century of Aviation Reauthorization Act (Public Law 108–176, 49 U.S.C. 40101 note).

SECTION 40104

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40104 .....	42 U.S.C. 17724.	Pub. L. 110–422, title III, § 307, Oct. 15, 2008, 122 Stat. 4788.

SUBCHAPTER II—HIGH PRIORITY AERONAUTICS RESEARCH  
AND DEVELOPMENT PROGRAMS

SECTION 40111

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40111 .....	42 U.S.C. 16721(a), (b).	Pub. L. 109–155, title IV, § 421(a), (b), Dec. 30, 2005, 119 Stat. 2924.

SECTION 40112

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40112(a) .....	42 U.S.C. 16722(b).	Pub. L. 109–155, title IV, § 422(b)–(g), Dec. 30, 2005, 119 Stat. 2925.
40112(b) .....	42 U.S.C. 16722(c).	
40112(c) .....	42 U.S.C. 16722(d).	
40112(d) .....	42 U.S.C. 16722(e).	
40112(e) .....	42 U.S.C. 16722(f).	
40112(f) .....	42 U.S.C. 16722(g).	

SECTION 40113

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40113 .....	42 U.S.C. 16723.	Pub. L. 109–155, title IV, § 423, Dec. 30, 2005, 119 Stat. 2925.

In subsection (b), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

SECTION 40114

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40114 .....	42 U.S.C. 16724.	Pub. L. 109–155, title IV, § 424, Dec. 30, 2005, 119 Stat. 2926.

In subsection (b), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

SECTION 40115

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40115 .....	42 U.S.C. 16725.	Pub. L. 109–155, title IV, § 425, Dec. 30, 2005, 119 Stat. 2926.

## SECTION 40116

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40116 .....	42 U.S.C. 16727.	Pub. L. 109–155, title IV, § 427, Dec. 30, 2005, 119 Stat. 2926; Pub. L. 110–422, title III, § 308, Oct. 15, 2008, 122 Stat. 4788.

In subsection (b), the words “Centers for Research on Aviation Training” are substituted for “Centers” for clarity. There are references to both “Centers for Research on Aviation Training” and “Administration Centers” in subsection (a).

In subsection (d)(1), the words “proposed in the application submitted under subsection (c)” are substituted for “proposed by the Center in its application under subsection (c)” for clarity. Under section (c), applications are filed by an institution of higher education (or a consortium of such institutions) seeking funding, and not by the Center for which such funding is sought.

## SUBCHAPTER III—SCHOLARSHIPS

## SECTION 40131

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40131 .....	42 U.S.C. 16741.	Pub. L. 109–155, title IV, § 431, Dec. 30, 2005, 119 Stat. 2927.

In subsection (b), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

## SUBCHAPTER IV—DATA REQUESTS

## SECTION 40141

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40141 .....	42 U.S.C. 16751.	Pub. L. 109–155, title IV, § 441, Dec. 30, 2005, 119 Stat. 2927.

## CHAPTER 403—NATIONAL SPACE GRANT COLLEGE AND FELLOWSHIP PROGRAM

- Sec.
- 40301. Purposes.
  - 40302. Definitions.
  - 40303. National space grant college and fellowship program.
  - 40304. Grants or contracts.
  - 40305. Specific national needs.
  - 40306. Space grant college and space grant regional consortium.
  - 40307. Space grant fellowship program.
  - 40308. Space grant review panel.
  - 40309. Availability of other Federal personnel and data.

40310. Designation or award to be on competitive basis.

40311. Continuing emphasis.

## SECTION 40301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40301 .....	42 U.S.C. 2486a.	Pub. L. 100-147, title II, §203, Oct. 30, 1987, 101 Stat. 869.

In paragraph (3), the word “that” is substituted for “, to” for clarity.

In paragraph (4), the words “in order to” are substituted for “to”, and the words “through such consortia” are added, for clarity.

## SECTION 40302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40302 .....	42 U.S.C. 2486b.	Pub. L. 100-147, title II, §204, Oct. 30, 1987, 101 Stat. 870.

The definitions of “Administration” and “Administrator” in section 204 of the National Space Grant College and Fellowship Act (Public Law 100-147, title II, 101 Stat. 870) are omitted as unnecessary because of the definitions added by section 10101 of title 51.

## SECTION 40303

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40303 .....	42 U.S.C. 2486c.	Pub. L. 100-147, title II, §205, Oct. 30, 1987, 101 Stat. 871.

## SECTION 40304

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40304 .....	42 U.S.C. 2486d.	Pub. L. 100-147, title II, §206, Oct. 30, 1987, 101 Stat. 872.

In subsection (a), the words “not more than 66 percent” are substituted for “66 percent, or any lesser percent”, and the word “except” is substituted for “except that this limitation shall not apply”, for clarity and to eliminate unnecessary words.

In subsection (b), the words “up to 100 percent” are substituted for “100 percent, or any lesser percent” to eliminate unnecessary words.

## SECTION 40305

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40305 .....	42 U.S.C. 2486e.	Pub. L. 100-147, title II, §207, Oct. 30, 1987, 101 Stat. 873.

In subsection (a), the words “up to 100 percent” are substituted for “100 percent, or any lesser percent” to eliminate unnecessary words.

## SECTION 40306

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40306 .....	42 U.S.C. 2486f.	Pub. L. 100-147, title II, § 208, Oct. 30, 1987, 101 Stat. 873.

## SECTION 40307

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40307 .....	42 U.S.C. 2486g.	Pub. L. 100-147, title II, § 209, Oct. 30, 1987, 101 Stat. 874.

## SECTION 40308

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40308 .....	42 U.S.C. 2486h.	Pub. L. 100-147, title II, § 210, Oct. 30, 1987, 101 Stat. 874.

In subsection (a), the word “provisions” is substituted for “provisons” to correct an error in the law.

## SECTION 40309

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40309 .....	42 U.S.C. 2486i.	Pub. L. 100-147, title II, § 211, Oct. 30, 1987, 101 Stat. 875.

## SECTION 40310

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40310 .....	42 U.S.C. 2486k.	Pub. L. 100-147, title II, § 213, Oct. 30, 1987, 101 Stat. 875.

The date “October 30, 1987” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Space Grant College and Fellowship Act, which is title II of the National Aeronautics and Space Administration Authorization Act of 1988 (Public Law 100-147, 101 Stat. 860).

## SECTION 40311

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40311 .....	42 U.S.C. 17781(c).	Pub. L. 110-422, title VII, § 704(c), Oct. 15, 2008, 122 Stat. 4803.

**CHAPTER 405—BIOMEDICAL RESEARCH IN SPACE**

Sec.

40501. Biomedical research joint working group.  
 40502. Biomedical research grants.  
 40503. Biomedical research fellowships.  
 40504. Establishment of electronic data archive.  
 40505. Establishment of emergency medical service telemedicine capability.

## SECTION 40501

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40501 .....	42 U.S.C. 2487a.	Pub. L. 102-588, title VI, § 602, Nov. 4, 1992, 106 Stat. 5130.

## SECTION 40502

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40502 .....	42 U.S.C. 2487b.	Pub. L. 102-588, title VI, § 603, Nov. 4, 1992, 106 Stat. 5130.

## SECTION 40503

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40503 .....	42 U.S.C. 2487c.	Pub. L. 102-588, title VI, § 604, Nov. 4, 1992, 106 Stat. 5131.

## SECTION 40504

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40504 .....	42 U.S.C. 2487e.	Pub. L. 102-588, title VI, § 606, Nov. 4, 1992, 106 Stat. 5131.

## SECTION 40505

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40505 .....	42 U.S.C. 2487f.	Pub. L. 102-588, title VI, § 607, Nov. 4, 1992, 106 Stat. 5131; Pub. L. 109-295, title VI, § 612(c), Oct. 4, 2006, 120 Stat. 1410.

The words “Office of Foreign Disaster Assistance” are substituted for “Office of Foreign Disaster” to correct an error in the law.

## CHAPTER 407—ENVIRONMENTALLY FRIENDLY AIRCRAFT

Sec.

- 40701. Research and development initiative.
- 40702. Additional research and development initiative.
- 40703. Research alignment.
- 40704. Research program on perceived impact of sonic booms.

### SECTION 40701

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40701 .....	42 U.S.C. 16722(a).	Pub. L. 109–155, title IV, § 422(a), Dec. 30, 2005, 119 Stat. 2924.

In paragraphs (2) and (3), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

### SECTION 40702

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40702 .....	42 U.S.C. 17721.	Pub. L. 110–422, title III, § 302, Oct. 15, 2008, 122 Stat. 4786.

In paragraphs (1) and (2), the date “October 15, 2008” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110–422, 122 Stat. 4779).

### SECTION 40703

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40703 .....	42 U.S.C. 17722.	Pub. L. 110–422, title III, § 303, Oct. 15, 2008, 122 Stat. 4787.

### SECTION 40704

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40704(a) .....	42 U.S.C. 17723(b).	Pub. L. 110–422, title III, § 304(b), (c), Oct. 15, 2008, 122 Stat. 4787.
40704(b) .....	42 U.S.C. 17723(c).	

## CHAPTER 409—MISCELLANEOUS

Sec.

- 40901. Science, Space, and Technology Education Trust Fund.
- 40902. National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund.

40903. Experimental Program to Stimulate Competitive Research—merit grant competition requirements.  
 40904. Microgravity research.  
 40905. Program to expand distance learning in rural underserved areas.  
 40906. Equal access to the Administration's education programs.  
 40907. Museums.  
 40908. Continuation of certain education programs.  
 40909. Compliance with title IX of Education Amendments of 1972.

## SECTION 40901

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40901 .....	42 U.S.C. 2467.	Pub. L. 100-404, title II, (par. under heading "Science, Space, and Technology Education Trust Fund", at 102 Stat. 1028), Aug. 19, 1988, 102 Stat. 1028; Pub. L. 103-327, title III, Sept. 28, 1994, 108 Stat. 2328.

In the first sentence, the words "the Department of Housing and Urban Development—Independent Agencies Appropriations Act, 1989 (Public Law 100-404, 102 Stat. 1014)" are substituted for "this Act" to clarify the reference.

In the second sentence, the words "of the Treasury" are inserted after "the Secretary" for clarity.

In the sixth sentence, the word "hereafter", which appeared after "each calendar quarter", is omitted as unnecessary.

## SECTION 40902

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40902 .....	42 U.S.C. 2467a.	Pub. L. 102-195, § 20, Dec. 9, 1991, 105 Stat. 1615.

In subsection (a), the words "The Trust Fund shall consist of amounts" are substituted for "The Trust Fund shall consist of gifts and donations accepted by the National Aeronautics and Space Administration pursuant to section 208 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2476b), as well as other amounts" because the Administration's authority to accept gifts or donations under section 208 of the National Aeronautics and Space Act of 1958 terminated 5 years after October 30, 1987.

## SECTION 40903

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40903(a) .....	42 U.S.C. 2467b(c).	Pub. L. 102-588, title III, § 304, Nov. 4, 1992, 106 Stat. 5120.
40903(b) .....	42 U.S.C. 2467b(a).	
40903(c) .....	42 U.S.C. 2467b(b).	
40903(d) .....	42 U.S.C. 17781(b).	Pub. L. 110-422, title VII, § 704(b), Oct. 15, 2008, 122 Stat. 4802.

In subsection (d) the words "eligible States" are substituted for "EPSCoR States" for clarity and consistency in the section.

## SECTION 40904

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40904(1) .....	42 U.S.C. 16655(2).	Pub. L. 109–155, title III, § 305(2), (3), Dec. 30, 2005, 119 Stat. 2918.
40904(2) .....	42 U.S.C. 16655(3).	

## SECTION 40905

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40905 .....	42 U.S.C. 16791.	Pub. L. 109–155, title VI, § 612, Dec. 30, 2005, 119 Stat. 2932.

## SECTION 40906

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40906 .....	42 U.S.C. 16794.	Pub. L. 109–155, title VI, § 615, Dec. 30, 2005, 119 Stat. 2934.

In subsection (b), in the matter before paragraph (1), the words “Every 2 years” are substituted for “Not later than 1 year after the date of enactment of this Act [December 30, 2005], and every 2 years thereafter” to eliminate obsolete language.

In subsection (b), in the matter before paragraph (1), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

## SECTION 40907

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40907 .....	42 U.S.C. 16795.	Pub. L. 109–155, title VI, § 616, Dec. 30, 2005, 119 Stat. 2934.

## SECTION 40908

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40908 .....	42 U.S.C. 16797.	Pub. L. 109–155, title VI, § 618, Dec. 30, 2005, 119 Stat. 2934.

## SECTION 40909

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40909 .....	42 U.S.C. 16798(b).	Pub. L. 109–155, title VI, § 619(b), Dec. 30, 2005, 119 Stat. 2935.

## Subtitle V—Programs Targeting Commercial Opportunities

### CHAPTER 501—SPACE COMMERCE

#### SUBCHAPTER I—GENERAL

Sec.

50101. Definitions.

#### SUBCHAPTER II—PROMOTION OF COMMERCIAL SPACE OPPORTUNITIES

50111. Commercialization of Space Station.

50112. Promotion of United States Global Positioning System standards.

50113. Acquisition of space science data.

50114. Administration of commercial space centers.

50115. Sources of Earth science data.

50116. Commercial technology transfer program.

#### SUBCHAPTER III—FEDERAL ACQUISITION OF SPACE TRANSPORTATION SERVICES

50131. Requirement to procure commercial space transportation services.

50132. Acquisition of commercial space transportation services.

50133. Shuttle privatization.

50134. Use of excess intercontinental ballistic missiles.

#### SUBCHAPTER I—GENERAL

##### SECTION 50101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50101 .....	42 U.S.C. 14701.	Pub. L. 105–303, § 2, Oct. 28, 1998, 112 Stat. 2843.

The definition of “Administrator” in section 2 of the Commercial Space Act of 1998 (Public Law 105–303, 112 Stat. 2843) is omitted as unnecessary because of the definition added by section 10101 of title 51.

#### SUBCHAPTER II—PROMOTION OF COMMERCIAL SPACE OPPORTUNITIES

##### SECTION 50111

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50111(a) .....	42 U.S.C. 14711(a).	Pub. L. 105–303, title I, § 101(a), Oct. 28, 1998, 112 Stat. 2845.
50111(b) .....	42 U.S.C. 17801.	Pub. L. 110–422, title IX, § 902, Oct. 15, 2008, 122 Stat. 4805.

In subsection (b)(1)(D), the date “October 15, 2008” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110–422, 122 Stat. 4779).

## SECTION 50112

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50112 .....	42 U.S.C. 14712(b).	Pub. L. 105–303, title I, § 104(b), Oct. 28, 1998, 112 Stat. 2852.

## SECTION 50113

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50113 .....	42 U.S.C. 14713.	Pub. L. 105–303, title I, § 105, Oct. 28, 1998, 112 Stat. 2852.

## SECTION 50114

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50114 .....	42 U.S.C. 14714.	Pub. L. 105–303, title I, § 106, Oct. 28, 1998, 112 Stat. 2853.

## SECTION 50115

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50115(a) .....	42 U.S.C. 14715(a).	Pub. L. 105–303, title I, § 107(a), (b), (d), (e), Oct. 28, 1998, 112 Stat. 2853, 2854.
50115(b) .....	42 U.S.C. 14715(b).	
50115(c) .....	42 U.S.C. 14715(d).	
50115(d) .....	42 U.S.C. 14715(e).	

## SECTION 50116

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50116 .....	42 U.S.C. 16811.	Pub. L. 109–155, title VI, § 621, Dec. 30, 2005, 119 Stat. 2935.

This section restates provisions originally enacted as part of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895), and not as part of the Commercial Space Act of 1998 (Public Law 105–303, 112 Stat. 2843), which is generally restated in this chapter.

In subsection (a), in the last sentence, the word “Administration” is substituted for “agency” for clarity and because of the definition of “Administration” added by section 10101 of title 51.

In subsection (b), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

SUBCHAPTER III—FEDERAL ACQUISITION OF SPACE  
TRANSPORTATION SERVICES

SECTION 50131

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50131(a) .....	42 U.S.C. 14731(a).	Pub. L. 105–303, title II, § 201, Oct. 28, 1998, 112 Stat. 2854.
50131(b) .....	42 U.S.C. 14731(b) (less last sentence).	
50131(c) .....	42 U.S.C. 14731(b) (last sentence).	
50131(d) .....	42 U.S.C. 14731(c).	
50131(e) .....	42 U.S.C. 14731(d).	

In subsection (d), the date “October 28, 1998” is substituted for “the date of the enactment of this Act” and for “such date” to reflect the date of enactment of the Commercial Space Act of 1998 (Public Law 105–303, 112 Stat. 2843).

SECTION 50132

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50132 .....	42 U.S.C. 14732.	Pub. L. 105–303, title II, § 202, Oct. 28, 1998, 112 Stat. 2855.

SECTION 50133

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50133 .....	42 U.S.C. 14733(a).	Pub. L. 105–303, title II, § 204(a), Oct. 28, 1998, 112 Stat. 2856.

SECTION 50134

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50134 .....	42 U.S.C. 14734.	Pub. L. 105–303, title II, § 205, Oct. 28, 1998, 112 Stat. 2857; Pub. L. 106–65, div. A, title X, § 1067(21), Oct. 5, 1999, 113 Stat. 775.

In subsection (b)(1), in the matter before subparagraph (A), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

**CHAPTER 503—COMMERCIAL REUSABLE IN-SPACE  
TRANSPORTATION**

Sec.

50301. Definitions.

50302. Loan guarantees for production of commercial reusable in-space transportation.

## SECTION 50301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50301 .....	42 U.S.C. 14753.	Pub. L. 107-248, title IX, §904, Oct. 23, 2002, 116 Stat. 1576.

## SECTION 50302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50302 .....	42 U.S.C. 14752.	Pub. L. 107-248, title IX, §903, Oct. 23, 2002, 116 Stat. 1574.

In subsection (f)(2), the word “forbear” is substituted for “forebear” to correct an error in the law.

In subsection (g)(1), the words “services or systems” are substituted for “services or system” to correct an error in the law.

**CHAPTER 505—COMMERCIAL SPACE COMPETITIVENESS**

Sec.

- 50501. Definitions.
- 50502. Launch voucher demonstration program.
- 50503. Anchor tenancy and termination liability.
- 50504. Use of Government facilities.
- 50505. Test facilities.
- 50506. Commercial Space Achievement Award.

## SECTION 50501

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50501 .....	15 U.S.C. 5802.	Pub. L. 102-588, title V, §502, Nov. 4, 1992, 106 Stat. 5123.

## SECTION 50502

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50502 .....	15 U.S.C. 5803(a)–(c).	Pub. L. 102-588, title V, §504(a)–(c), Nov. 4, 1992, 106 Stat. 5124; Pub. L. 105-303, title I, §103, Oct. 28, 1998, 112 Stat. 2851.

In subsection (a), the words “to become effective October 1, 1993”, which appeared at the end, are omitted as obsolete.

## SECTION 50503

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50503 .....	15 U.S.C. 5806.	Pub. L. 102-588, title V, §507, Nov. 4, 1992, 106 Stat. 5127.

## SECTION 50504

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50504 .....	15 U.S.C. 5807.	Pub. L. 102–588, title V, §508, Nov. 4, 1992, 106 Stat. 5128.

## SECTION 50505

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50505 .....	42 U.S.C. 16634.	Pub. L. 109–155, title II, §205, Dec. 30, 2005, 119 Stat. 2916.

This section restates provisions originally enacted as part of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895), and not as part of title V of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (Public Law 102–588, 106 Stat. 5107), which is generally restated in this chapter.

In subsection (a), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

## SECTION 50506

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50506 .....	15 U.S.C. 5808.	Pub. L. 102–588, title V, §510, Nov. 4, 1992, 106 Stat. 5129.

In subsection (b), in the matter before paragraph (1), the words “The Secretary of Commerce shall periodically make awards” are substituted for “The Secretary of Commerce shall periodically make, and the Chairman of the National Space Council shall present, awards” to eliminate obsolete language. The reference to the Chairman of the National Space Council is obsolete because the National Space Council (established by section 501 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1989 (Public Law 100–685, 102 Stat. 4102)) has not functioned or been staffed since 1993.

**CHAPTER 507—OFFICE OF SPACE COMMERCIALIZATION**

- Sec.  
 50701. Definition of Office.  
 50702. Establishment.  
 50703. Annual report.

## SECTION 50701

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50701 .....	(no source)	

A chapter-wide definition for the term “Office” is added for clarity and convenience.

## SECTION 50702

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50702 .....	15 U.S.C. 1511e.	Pub. L. 105–309, § 8, Oct. 30, 1998, 112 Stat. 2937; Pub. L. 107–305, § 14, Nov. 27, 2002, 116 Stat. 2380; Pub. L. 108–447, div. B, title II, Dec. 8, 2004, 118 Stat. 2878.

## SECTION 50703

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
50703 .....	15 U.S.C. 1535.	Pub. L. 101–611, title I, § 115(b), Nov. 16, 1990, 104 Stat. 3201.

The words “The Secretary of Commerce shall submit an annual report” are substituted for “Commencing in fiscal year 1992, and every fiscal year thereafter, the Secretary of Commerce shall submit . . . a report” to eliminate unnecessary words.

The word “Office”, meaning the Office of Space Commercialization, is substituted for “Office of Space Commerce” to correct an error in the law.

The words “Committee on Science and Technology” are substituted for “Committee on Science, Space, and Technology” on authority of section 1(a)(10) of Public Law 104–14 (2 U.S.C. note prec. 21), Rule X(1)(n) of the Rules of the House of Representatives, adopted by House Resolution No. 5 (106th Congress, January 6, 1999), and Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

## Subtitle VI—Earth Observations

### CHAPTER 601—LAND REMOTE SENSING POLICY

#### SUBCHAPTER I—GENERAL

Sec.

60101. Definitions.

#### SUBCHAPTER II—LANDSAT

60111. Landsat Program Management.

60112. Transfer of Landsat 6 program responsibilities.

60113. Data policy for Landsat 7.

#### SUBCHAPTER III—LICENSING OF PRIVATE REMOTE SENSING SPACE SYSTEMS

60121. General licensing authority.

60122. Conditions for operation.

60123. Administrative authority of Secretary.

60124. Regulatory authority of Secretary.

60125. Agency activities.

SUBCHAPTER IV—RESEARCH, DEVELOPMENT, AND DEMONSTRATION

- 60131. Continued Federal research and development.
- 60132. Availability of federally gathered unenhanced data.
- 60133. Technology demonstration program.
- 60134. Preference for private sector land remote sensing system.

SUBCHAPTER V—GENERAL PROVISIONS

- 60141. Nondiscriminatory data availability.
- 60142. Archiving of data.
- 60143. Nonreproduction.
- 60144. Reimbursement for assistance.
- 60145. Acquisition of equipment.
- 60146. Radio frequency allocation.
- 60147. Consultation.
- 60148. Enforcement.

SUBCHAPTER VI—PROHIBITION OF COMMERCIALIZATION OF WEATHER SATELLITES

- 60161. Prohibition.
- 60162. Future considerations.

SUBCHAPTER I—GENERAL

SECTION 60101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60101 .....	15 U.S.C. 5602.	Pub. L. 102-555, § 3, Oct. 28, 1992, 106 Stat. 4164.

The definition of “Administrator” in section 3 of the Land Remote Sensing Policy Act of 1992 (Public Law 102-555, 106 Stat. 4164) is omitted as unnecessary because of the definition added by section 10101 of title 51.

SUBCHAPTER II—LANDSAT

SECTION 60111

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60111 .....	15 U.S.C. 5611.	Pub. L. 102-555, title I, § 101, Oct. 28, 1992, 106 Stat. 4166.

In subsection (b), in the matter before paragraph (1), after the words “funding expectations for the Landsat”, the word “program” is set out without being capitalized to correct an error in the law.

In subsection (c)(6), the words “sections 102 and 103 of the Land Remote Sensing Policy Act of 1992 (Public Law 102-555, 106 Stat. 4168)” are substituted for “sections 102 and 103” to clarify the reference. The reference to sections 102 and 103 of the Land Remote Sensing Policy Act of 1992 is retained in text, notwithstanding the fact that sections 102 and 103 of the Act are repealed as obsolete, because oversight responsibilities may continue for contracts entered into under the now obsolete provisions.

In subsection (e)(2), in the matter before subparagraph (A), the word “biennially” is substituted for “Within 1 year after the date of the enactment of this Act and biennially thereafter,” to eliminate obsolete language.

## SECTION 60112

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60112 .....	15 U.S.C. 5614.	Pub. L. 102–555, title I, § 104, Oct. 28, 1992, 106 Stat. 4170.

## SECTION 60113

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60113 .....	15 U.S.C. 5615(a), (b).	Pub. L. 102–555, title I, § 105(a), (b), Oct. 28, 1992, 106 Stat. 4170.

SUBCHAPTER III—LICENSING OF PRIVATE REMOTE  
SENSING SPACE SYSTEMS

## SECTION 60121

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60121 .....	15 U.S.C. 5621.	Pub. L. 102–555, title II, § 201, Oct. 28, 1992, 106 Stat. 4171; Pub. L. 105–303, title I, § 107(f)(1), Oct. 28, 1998, 112 Stat. 2854.

In subsection (b)(2), the words “within 6 months after the date of the enactment of the Commercial Space Act of 1998” are omitted as obsolete.

## SECTION 60122

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60122 .....	15 U.S.C. 5622.	Pub. L. 102–555, title II, § 202, Oct. 28, 1992, 106 Stat. 4172; Pub. L. 105–303, title I, § 107(f)(2), Oct. 28, 1998, 112 Stat. 2854.

In subsection (c), in the matter before paragraph (1), the words “subsection (b)” are substituted for “paragraph (b)” to correct an error in the law.

## SECTION 60123

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60123 .....	15 U.S.C. 5623.	Pub. L. 102–555, title II, § 203, Oct. 28, 1992, 106 Stat. 4172.

In subsection (a), at the end of paragraph (2), a semicolon is substituted for the period to correct an error in the law.

## SECTION 60124

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60124 .....	15 U.S.C. 5624.	Pub. L. 102-555, title II, §204, Oct. 28, 1992, 106 Stat. 4173.

## SECTION 60125

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60125 .....	15 U.S.C. 5625.	Pub. L. 102-555, title II, §205, Oct. 28, 1992, 106 Stat. 4173.

## SUBCHAPTER IV—RESEARCH, DEVELOPMENT, AND DEMONSTRATION

## SECTION 60131

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60131 .....	15 U.S.C. 5631.	Pub. L. 102-555, title III, §301, Oct. 28, 1992, 106 Stat. 4174.

## SECTION 60132

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60132 .....	15 U.S.C. 5632.	Pub. L. 102-555, title III, §302, Oct. 28, 1992, 106 Stat. 4174.

In subsection (b), the word “affect” is substituted for “effect” to correct an error in the law.

## SECTION 60133

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60133 .....	15 U.S.C. 5633(a)–(e).	Pub. L. 102-555, title III, §303(a)–(e), Oct. 28, 1992, 106 Stat. 4174.

In subsection (a)(1), the date “October 28, 1992” is substituted for “the date of the enactment of this Act” to reflect the date of enactment of the Land Remote Sensing Policy Act of 1992 (Public Law 102-555, 106 Stat. 4163). At the end of paragraph (1), a semicolon is substituted for the period to correct an error in the law.

## SECTION 60134

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60134(a) .....	15 U.S.C. 5641(c).	Pub. L. 102-555, title IV, §401(b), (c), Oct. 28, 1992, 106 Stat. 4176.
60134(b) .....	15 U.S.C. 5641(b).	

In subsection (b), in the matter before paragraph (1), the words “In carrying out subsection (a), the Landsat Program Management shall consider the ability of each of the options to” are omitted as obsolete. The omitted words refer to section 401(a) of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5641(a)), which required, within 5 years after October 28, 1992, the Landsat Program Management, in consultation with representatives of appropriate United States Government agencies, to assess and report to Congress on options for a successor land remote sensing system to Landsat 7.

In subsection (b)(3), the words “otherwise projected to be in operation in the future” are substituted for “projected to be in operation through the year 2000” to eliminate obsolete language.

## SUBCHAPTER V—GENERAL PROVISIONS

### SECTION 60141

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60141 .....	15 U.S.C. 5651.	Pub. L. 102–555, title V, § 501, Oct. 28, 1992, 106 Stat. 4176.

### SECTION 60142

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60142 .....	15 U.S.C. 5652.	Pub. L. 102–555, title V, § 502, Oct. 28, 1992, 106 Stat. 4176.

In subsection (b), the words “hereafter in this section” are substituted for “hereinafter” for clarity.

In subsection (c), in the matter before paragraph (1), the words “of the Interior” are substituted for “of Interior” to correct an error in the law.

In subsection (c)(1), the date “October 28, 1992” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the Land Remote Sensing Policy Act of 1992 (Public Law 102–555, 106 Stat. 4163).

### SECTION 60143

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60143 .....	15 U.S.C. 5653.	Pub. L. 102–555, title V, § 503, Oct. 28, 1992, 106 Stat. 4177.

### SECTION 60144

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60144 .....	15 U.S.C. 5654.	Pub. L. 102–555, title V, § 504, Oct. 28, 1992, 106 Stat. 4177.

## SECTION 60145

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60145 .....	15 U.S.C. 5655.	Pub. L. 102-555, title V, § 505, Oct. 28, 1992, 106 Stat. 4177.

## SECTION 60146

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60146 .....	15 U.S.C. 5656.	Pub. L. 102-555, title V, § 506, Oct. 28, 1992, 106 Stat. 4177.

## SECTION 60147

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60147 .....	15 U.S.C. 5657.	Pub. L. 102-555, title V, § 507, Oct. 28, 1992, 106 Stat. 4178.

## SECTION 60148

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60148 .....	15 U.S.C. 5658.	Pub. L. 102-555, title V, § 508, Oct. 28, 1992, 106 Stat. 4179.

In subsection (d), in the second sentence, the words “have been, or are being” are substituted for “has been, or is being” to correct an error in the law.

## SUBCHAPTER VI—PROHIBITION OF COMMERCIALIZATION OF WEATHER SATELLITES

## SECTION 60161

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60161 .....	15 U.S.C. 5671.	Pub. L. 102-555, title VI, § 601, Oct. 28, 1992, 106 Stat. 4179.

## SECTION 60162

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60162 .....	15 U.S.C. 5672.	Pub. L. 102-555, title VI, § 602, Oct. 28, 1992, 106 Stat. 4180.

The date “October 28, 1992” is substituted for “the enactment of this Act” to reflect the date of enactment of the Land Remote Sensing Policy Act of 1992 (Public Law 102-555, 106 Stat. 4163).

## CHAPTER 603—REMOTE SENSING

Sec.

- 60301. Definitions.
- 60302. General responsibilities.
- 60303. Pilot projects to encourage public sector applications.
- 60304. Program evaluation.
- 60305. Data availability.
- 60306. Education.

### SECTION 60301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60301 .....	42 U.S.C. 16671.	Pub. L. 109–155, title III, § 311, Dec. 30, 2005, 119 Stat. 2920.

### SECTION 60302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60302 .....	42 U.S.C. 16672.	Pub. L. 109–155, title III, § 312, Dec. 30, 2005, 119 Stat. 2920.

### SECTION 60303

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60303 .....	42 U.S.C. 16673.	Pub. L. 109–155, title III, § 313, Dec. 30, 2005, 119 Stat. 2921.

### SECTION 60304

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60304 .....	42 U.S.C. 16674.	Pub. L. 109–155, title III, § 314, Dec. 30, 2005, 119 Stat. 2921.

### SECTION 60305

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60305 .....	42 U.S.C. 16675.	Pub. L. 109–155, title III, § 315, Dec. 30, 2005, 119 Stat. 2922.

### SECTION 60306

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60306 .....	42 U.S.C. 16676.	Pub. L. 109–155, title III, § 316, Dec. 30, 2005, 119 Stat. 2922.

## CHAPTER 605—EARTH SCIENCE

Sec.

60501. Goal.  
 60502. Transitioning experimental research into operational services.  
 60503. Reauthorization of Glory Mission.  
 60504. Tornadoes and other severe storms.  
 60505. Coordination with the National Oceanic and Atmospheric Administration.  
 60506. Sharing of climate related data.

## SECTION 60501

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60501 .....	42 U.S.C. 17711.	Pub. L. 110–422, title II, § 201, Oct. 15, 2008, 122 Stat. 4784.

## SECTION 60502

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60502(a) .....	42 U.S.C. 17712(b).	Pub. L. 110–422, title II, § 204(b), (c), (d), Oct. 15, 2008, 122 Stat. 4785.
60502(b) .....	42 U.S.C. 17712(c).	
60502(c) .....	42 U.S.C. 17712(d).	

## SECTION 60503

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60503 .....	42 U.S.C. 17713(a).	Pub. L. 110–422, title II, § 206(a), Oct. 15, 2008, 122 Stat. 4785.

## SECTION 60504

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60504 .....	42 U.S.C. 17714.	Pub. L. 110–422, title II, § 208, Oct. 15, 2008, 122 Stat. 4786.

## SECTION 60505

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60505 .....	42 U.S.C. 16656.	Pub. L. 109–155, title III, § 306, Dec. 30, 2005, 119 Stat. 2919.

In subsection (b), the words “beginning with the first fiscal year after the date of enactment of this Act [December 30, 2005]” are omitted as obsolete.

In subsection (b), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

## SECTION 60506

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
60506 .....	42 U.S.C. 17825(c).	Pub. L. 110-422, title XI, § 1109(c), Oct. 15, 2008, 122 Stat. 4811.

**Subtitle VII—Access to Space****CHAPTER 701—USE OF SPACE SHUTTLE OR ALTERNATIVES**

Sec.

70101. Recovery of fair value of placing Department of Defense payloads in orbit with space shuttle.
70102. Space shuttle use policy.
70103. Commercial payloads on space shuttle.

## SECTION 70101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70101 .....	42 U.S.C. 2464.	Pub. L. 97-324, title I, § 106(a), Oct. 15, 1982, 96 Stat. 1600.

## SECTION 70102

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70102(a) .....	42 U.S.C. 2465a(a).	Pub. L. 101-611, title I, § 112(a), (c), (d), Nov. 16, 1990, 104 Stat. 3198, 3199.
70102(b) .....	42 U.S.C. 2465a(c).	
70102(c) .....	42 U.S.C. 2465a(d).	

## SECTION 70103

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70103(a) .....	42 U.S.C. 2465c.	Pub. L. 101-611, title II, § 203, Nov. 16, 1990, 104 Stat. 3206; Pub. L. 105-303, title II, § 203(2), Oct. 28, 1998, 112 Stat. 2855.
70103(b) .....	42 U.S.C. 2465f.	

In subsection (a), the words “this section” are substituted for “this title”, meaning title II of Public Law 101-611, because title II of Public Law 101-611 was previously repealed except for section 201 (a short title provision, classified to 42 U.S.C. 2451 note, in which neither defined term appears) and sections 203 (42 U.S.C. 2465c) and 206 (42 U.S.C. 2465f) of Public Law 101-611, which are restated in this section.

### CHAPTER 703—SHUTTLE PRICING POLICY FOR COMMERCIAL AND FOREIGN USERS

Sec.

70301. Congressional findings and declarations.  
70302. Purpose, policy, and goals.  
70303. Definition of additive cost.  
70304. Duties of Administrator.

#### SECTION 70301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70301 .....	42 U.S.C. 2466.	Pub. L. 99-170, title II, § 201, Dec. 5, 1985, 99 Stat. 1017.

#### SECTION 70302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70302 .....	42 U.S.C. 2466a.	Pub. L. 99-170, title II, § 202, Dec. 5, 1985, 99 Stat. 1017.

#### SECTION 70303

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70303 .....	42 U.S.C. 2466b.	Pub. L. 99-170, title II, § 203, Dec. 5, 1985, 99 Stat. 1017.

The definition of “Administrator” in section 203(1) of the National Aeronautics and Space Administration Authorization Act of 1986 (Public Law 99-170, 99 Stat. 1017) is omitted as unnecessary because of the definition added by section 10101 of title 51.

#### SECTION 70304

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70304 .....	42 U.S.C. 2466c.	Pub. L. 99-170, title II, § 204, Dec. 5, 1985, 99 Stat. 1017; Pub. L. 103-437, § 15(c)(5), Nov. 2, 1994, 108 Stat. 4592.

In subsections (b) and (c)(1), the words “Committee on Science and Technology” are substituted for “Committee on Science, Space, and Technology” on authority of section 1(a)(10) of Public Law 104-14 (2 U.S.C. note prec. 21), Rule X(1)(n) of the Rules of the House of Representatives, adopted by House Resolution No. 5 (106th Congress, January 6, 1999), and Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

### CHAPTER 705—EXPLORATION INITIATIVES

Sec.

70501. Space shuttle follow-on.

70502. Exploration plan and programs.  
 70503. Ground-based analog capabilities.  
 70504. Stepping stone approach to exploration.  
 70505. Lunar outpost.  
 70506. Exploration technology research.  
 70507. Technology development.  
 70508. Robotic or human servicing of spacecraft.

## SECTION 70501

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70501(a) .....	42 U.S.C. 16761(a).	Pub. L. 109–155, title V, § 501(a), (b), Dec. 30, 2005, 119 Stat. 2927.
70501(b) .....	42 U.S.C. 16761(b).	

In subsection (b), the words “The Administrator shall transmit an annual report” are substituted for “Not later than 180 days after the date of enactment of this Act [December 30, 2005] and annually thereafter, the Administrator shall transmit a report” to eliminate obsolete language.

In subsection (b), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

## SECTION 70502

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70502 .....	42 U.S.C. 16763.	Pub. L. 109–155, title V, § 503, Dec. 30, 2005, 119 Stat. 2929.

## SECTION 70503

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70503 .....	42 U.S.C. 16764.	Pub. L. 109–155, title V, § 504, Dec. 30, 2005, 119 Stat. 2929.

## SECTION 70504

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70504 .....	42 U.S.C. 17731.	Pub. L. 110–422, title IV, § 403, Oct. 15, 2008, 122 Stat. 4789.

## SECTION 70505

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70505(a) .....	42 U.S.C. 17732(a).	Pub. L. 110–422, title IV, § 404(a), (b), Oct. 15, 2008, 122 Stat. 4789.
70505(b) .....	42 U.S.C. 17732(b).	

## SECTION 70506

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70506 .....	42 U.S.C. 17733(b).	Pub. L. 110-422, title IV, § 405(b), Oct. 15, 2008, 122 Stat. 4789.

## SECTION 70507

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70507 .....	42 U.S.C. 17741.	Pub. L. 110-422, title V, § 501, Oct. 15, 2008, 122 Stat. 4791.

## SECTION 70508

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70508 .....	42 U.S.C. 17742.	Pub. L. 110-422, title V, § 502, Oct. 15, 2008, 122 Stat. 4791.

## CHAPTER 707—HUMAN SPACE FLIGHT INDEPENDENT INVESTIGATION COMMISSION

Sec.

- 70701. Definitions.
- 70702. Establishment of Commission.
- 70703. Tasks of Commission.
- 70704. Composition of Commission.
- 70705. Powers of Commission.
- 70706. Public meetings, information, and hearings.
- 70707. Staff of Commission.
- 70708. Compensation and travel expenses.
- 70709. Security clearances for Commission members and staff.
- 70710. Reporting requirements and termination.

## SECTION 70701

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70701 .....	42 U.S.C. 16841.	Pub. L. 109-155, title V, § 821, Dec. 30, 2005, 119 Stat. 2941.

## SECTION 70702

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70702 .....	42 U.S.C. 16842.	Pub. L. 109-155, title V, § 822, Dec. 30, 2005, 119 Stat. 2941.

## SECTION 70703

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70703 .....	42 U.S.C. 16843.	Pub. L. 109–155, title V, § 823, Dec. 30, 2005, 119 Stat. 2941.

## SECTION 70704

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70704(a) .....	42 U.S.C. 16844(a).	Pub. L. 109–155, title V, § 824, Dec. 30, 2005, 119 Stat. 2942.
70704(b) .....	42 U.S.C. 16844(b).	
70704(c) .....	42 U.S.C. 16844(c).	
70704(d) .....	42 U.S.C. 16844(d).	
70704(e) .....	42 U.S.C. 16844(e) (1st sentence).	
70704(f) .....	42 U.S.C. 16844(e) (2d sentence).	
70704(g) .....	42 U.S.C. 16844(e) (last sentence).	

## SECTION 70705

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70705 .....	42 U.S.C. 16845.	Pub. L. 109–155, title V, § 825, Dec. 30, 2005, 119 Stat. 2942.

## SECTION 70706

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70706 .....	42 U.S.C. 16846.	Pub. L. 109–155, title V, § 826, Dec. 30, 2005, 119 Stat. 2943.

## SECTION 70707

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70707 .....	42 U.S.C. 16847.	Pub. L. 109–155, title V, § 827, Dec. 30, 2005, 119 Stat. 2943.

In subsection (c), in the 1st sentence, the words “the daily equivalent of the annual rate of basic pay in effect for positions at level IV of the Executive Schedule under section 5315 of title 5” are substituted for “the daily rate paid a person occupying a position at level IV of the Executive Schedule under section 5315 of title 5” for consistency in title 51.

In subsection (c), in the last sentence, the words “the expert or consultant” are substituted for “it” for clarity.

## SECTION 70708

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70708 .....	42 U.S.C. 16848.	Pub. L. 109-155, title V, § 828, Dec. 30, 2005, 119 Stat. 2944.

In subsection (a), the words “at a rate not to exceed the daily equivalent of the annual rate” for “at not to exceed the daily equivalent of the annual rate” for consistency in title 51.

In subsection (b), the words “section 5703 of title 5” are substituted for “section 5703(b) of title 5” to correct an error in the law. Section 5703 of title 5, United States Code, does not contain a subsection (b).

## SECTION 70709

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70709 .....	42 U.S.C. 16849.	Pub. L. 109-155, title V, § 829, Dec. 30, 2005, 119 Stat. 2944.

## SECTION 70710

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70710 .....	42 U.S.C. 16850.	Pub. L. 109-155, title V, § 830, Dec. 30, 2005, 119 Stat. 2944.

**CHAPTER 709—INTERNATIONAL SPACE STATION**

Sec.

- 70901. Peaceful uses of space station.
- 70902. Allocation of International Space Station research budget.
- 70903. International Space Station research.
- 70904. International Space Station completion.
- 70905. National laboratory designation.
- 70906. International Space Station National Laboratory Advisory Committee.
- 70907. Maintaining use through at least 2020.

## SECTION 70901

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70901 .....	(not previously classified)	Pub. L. 101-611, title I, § 123, Nov. 16, 1990, 104 Stat. 3204.

The words “the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991 (Public Law 101-611, 104 Stat. 3190)” are substituted for “this Act” to clarify the reference.

## SECTION 70902

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70902 .....	42 U.S.C. 16633.	Pub. L. 109-155, title II, § 204, Dec. 30, 2005, 119 Stat. 2916.

The words “Beginning with fiscal year 2006”, which appeared at the beginning of this section, are omitted as obsolete.

## SECTION 70903

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70903 .....	42 U.S.C. 16766(1), (2).	Pub. L. 109–155, title V, § 506(1), (2), Dec. 30, 2005, 119 Stat. 2930.

## SECTION 70904

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70904 .....	42 U.S.C. 16765.	Pub. L. 109–155, title V, § 505, Dec. 30, 2005, 119 Stat. 2929.

In subsections (b)(3) and (c)(2), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

In subsections (b)(3) and (c)(2), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

In subsection (c)(2) the words “Not later than 60 days after the date of enactment of this Act [December 30, 2005], and” are omitted as obsolete.

## SECTION 70905

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70905(a) .....	42 U.S.C. 16767(d).	Pub. L. 109–155, title V, § 507(a), (b), (d), Dec. 30, 2005, 119 Stat. 2930, 2931.
70905(b) .....	42 U.S.C. 16767(a).	
70905(c) .....	42 U.S.C. 16767(b).	

## SECTION 70906

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70906 .....	42 U.S.C. 17752.	Pub. L. 110–422, title VI, § 602, Oct. 15, 2008, 122 Stat. 4795.

In subsection (a), the date “October 15, 2008” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110–422, 122 Stat. 4779).

## SECTION 70907

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70907 .....	42 U.S.C. 17751(a).	Pub. L. 110-422, title VI, §601(a), Oct. 15, 2008, 122 Stat. 4793.

**CHAPTER 711—NEAR-EARTH OBJECTS**

Sec.

71101. Reaffirmation of policy.

71102. Requests for information.

71103. Developing policy and recommending responsible Federal agency.

71104. Planetary radar.

## SECTION 71101

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
71101 .....	42 U.S.C. 17791(a).	Pub. L. 110-422, title VIII, §801(a), Oct. 15, 2008, 122 Stat. 4803.

## SECTION 71102

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
71102 .....	42 U.S.C. 17793.	Pub. L. 110-422, title VIII, §803, Oct. 15, 2008, 122 Stat. 4803.

## SECTION 71103

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
71103 .....	42 U.S.C. 17794.	Pub. L. 110-422, title VIII, §804, Oct. 15, 2008, 122 Stat. 4804.

In the matter before paragraph (1), the date “October 15, 2008” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2008.

## SECTION 71104

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
71104 .....	42 U.S.C. 17795.	Pub. L. 110-422, title VIII, §805, Oct. 15, 2008, 122 Stat. 4804.

**CHAPTER 713—COOPERATION FOR SAFETY AMONG SPACEFARING NATIONS**

Sec.

71301. Common docking system standard to enable rescue.

71302. Information sharing to avoid physical or radio-frequency interference.

## SECTION 71301

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
71301 .....	42 U.S.C. 17734.	Pub. L. 110-422, title IV, § 407, Oct. 15, 2008, 122 Stat. 4790.

## SECTION 71302

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
71302 .....	42 U.S.C. 17821(b).	Pub. L. 110-422, title XI, § 1102(b), Oct. 15, 2008, 122 Stat. 4808.

## SECTION 4—CONFORMING AMENDMENTS TO OTHER LAWS

Section 4 of the bill makes conforming amendments.

Subsections (a) to (c) make conforming amendments to update cross references in positive law titles of the United States Code.

Subsection (d) renumbers and transfers chapters 701 and 703 of title 49, United States Code, as chapters 509 and 511, respectively, of title 51, United States Code. Subsection (d) also makes related conforming amendments to update cross references and execute other necessary technical changes related to the transfers.

Subsection (e) makes a conforming amendment to section 304 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16654).

## SECTION 5—TRANSITIONAL AND SAVINGS PROVISIONS

Section 5 of the bill contains transitional and savings provisions.

## SECTION 6—REPEALS

Section 6 of the bill repeals provisions replaced by the bill, along with unnecessary and obsolete provisions (see “Disposition Table” above).







PUBLIC LAW 111-314—DEC. 18, 2010

ENACTMENT OF TITLE 51—NATIONAL AND  
COMMERCIAL SPACE PROGRAMS

124 STAT. 3328

PUBLIC LAW 111-314—DEC. 18, 2010

Public Law 111-314  
111th Congress

An Act

Dec. 18, 2010  
[H.R. 3237]

To enact certain laws relating to national and commercial space programs as title 51, United States Code, “National and Commercial Space Programs”.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. TABLE OF CONTENTS.**

The table of contents for this Act is as follows:

- Sec. 1. Table of contents.
- Sec. 2. Purpose; conformity with original intent.
- Sec. 3. Enactment of title 51, United States Code.
- Sec. 4. Conforming amendments to other laws.
- Sec. 5. Transitional and savings provisions.
- Sec. 6. Repeals.

5 USC note prec.  
10101.

**SEC. 2. PURPOSE; CONFORMITY WITH ORIGINAL INTENT.**

(a) **PURPOSE.**—The purpose of this Act is to codify certain existing laws related to national and commercial space programs as a positive law title of the United States Code.

(b) **CONFORMITY WITH ORIGINAL INTENT.**—In the codification of laws by this Act, the intent is to conform to the understood policy, intent, and purpose of Congress in the original enactments, with such amendments and corrections as will remove ambiguities, contradictions, and other imperfections, in accordance with section 205(c)(1) of House Resolution No. 988, 93d Congress, as enacted into law by Public Law 93-554 (2 U.S.C. 285b(1)).

5 USC note prec.  
10101.

**SEC. 3. ENACTMENT OF TITLE 51, UNITED STATES CODE.**

Title 51, United States Code, “National and Commercial Space Programs”, is enacted as follows:

**TITLE 51—NATIONAL AND COMMERCIAL SPACE PROGRAMS**

**Subtitle I—General**

Chap.	Sec.
101. Definitions .....	10101

**Subtitle II—General Program and Policy Provisions**

201. National Aeronautics and Space Program .....	20101
203. Responsibilities and Vision .....	20301

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**Subtitle III—Administrative Provisions**

301. Appropriations, Budgets, and Accounting .....	30101
303. Contracting and Procurement .....	30301
305. Management and Review .....	30501
307. International Cooperation and Competition .....	30701
309. Awards .....	30901
311. Safety .....	31101
313. Healthcare .....	31301
315. Miscellaneous .....	31501

**Subtitle IV—Aeronautics and Space Research and Education**

401. Aeronautics .....	40101
403. National Space Grant College and Fellowship Program .....	40301
405. Biomedical Research in Space .....	40501
407. Environmentally Friendly Aircraft .....	40701
409. Miscellaneous .....	40901

**Subtitle V—Programs Targeting Commercial Opportunities**

501. Space Commerce .....	50101
503. Commercial Reusable In-Space Transportation .....	50301
505. Commercial Space Competitiveness .....	50501
507. Office of Space Commercialization .....	50701

**Subtitle VI—Earth Observations**

601. Land Remote Sensing Policy .....	60101
603. Remote Sensing .....	60301
605. Earth Science .....	60501

**Subtitle VII—Access to Space**

701. Use of Space Shuttle or Alternatives .....	70101
703. Shuttle Pricing Policy for Commercial and Foreign Users .....	70301
705. Exploration Initiatives .....	70501
707. Human Space Flight Independent Investigation Commission .....	70701
709. International Space Station .....	70901
711. Near-Earth Objects .....	71101
713. Cooperation for Safety Among Spacefaring Nations .....	71301

**Subtitle I—General****CHAPTER 101—DEFINITIONS**

Sec.

10101. Definitions.

**§ 10101. Definitions**

In this title:

(1) **ADMINISTRATION.**—The term “Administration” means the National Aeronautics and Space Administration.

(2) **ADMINISTRATOR.**—The term “Administrator” means the Administrator of the National Aeronautics and Space Administration.

124 STAT. 3330

PUBLIC LAW 111-314—DEC. 18, 2010

## Subtitle II—General Program and Policy Provisions

### CHAPTER 201—NATIONAL AERONAUTICS AND SPACE PROGRAM

#### SUBCHAPTER I—SHORT TITLE, DECLARATION OF POLICY, AND DEFINITIONS

Sec.

- 20101. Short title.
- 20102. Congressional declaration of policy and purpose.
- 20103. Definitions.

#### SUBCHAPTER II—COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

- 20111. National Aeronautics and Space Administration.
- 20112. Functions of the Administration.
- 20113. Powers of the Administration in performance of functions.
- 20114. Administration and Department of Defense coordination.
- 20115. International cooperation.
- 20116. Reports to Congress.
- 20117. Disposal of excess land.

#### SUBCHAPTER III—GENERAL ADMINISTRATIVE PROVISIONS

- 20131. Public access to information.
- 20132. Security requirements.
- 20133. Permission to carry firearms.
- 20134. Arrest authority.
- 20135. Property rights in inventions.
- 20136. Contributions awards.
- 20137. Malpractice and negligence suits against United States.
- 20138. Insurance and indemnification.
- 20139. Insurance for experimental aerospace vehicles.
- 20140. Appropriations.
- 20141. Misuse of agency name and initials.
- 20142. Contracts regarding expendable launch vehicles.
- 20143. Full cost appropriations account structure.
- 20144. Prize authority.
- 20145. Lease of non-excess property.
- 20146. Retrocession of jurisdiction.
- 20147. Recovery and disposition authority.

#### SUBCHAPTER IV—UPPER ATMOSPHERE RESEARCH

- 20161. Congressional declaration of purpose and policy.
- 20162. Definition of upper atmosphere.
- 20163. Program authorized.
- 20164. International cooperation.

#### SUBCHAPTER I—SHORT TITLE, DECLARATION OF POLICY, AND DEFINITIONS

##### § 20101. Short title

This chapter may be cited as the “National Aeronautics and Space Act”.

##### § 20102. Congressional declaration of policy and purpose

(a) DEVOTION OF SPACE ACTIVITIES TO PEACEFUL PURPOSES FOR BENEFIT OF ALL HUMANKIND.—Congress declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all humankind.

(b) AERONAUTICAL AND SPACE ACTIVITIES FOR WELFARE AND SECURITY OF UNITED STATES.—Congress declares that the general

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welfare and security of the United States require that adequate provision be made for aeronautical and space activities. Congress further declares that such activities shall be the responsibility of, and shall be directed by, a civilian agency exercising control over aeronautical and space activities sponsored by the United States, except that activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States (including the research and development necessary to make effective provision for the defense of the United States) shall be the responsibility of, and shall be directed by, the Department of Defense; and that determination as to which agency has responsibility for and direction of any such activity shall be made by the President.

(c) **COMMERCIAL USE OF SPACE.**—Congress declares that the general welfare of the United States requires that the Administration seek and encourage, to the maximum extent possible, the fullest commercial use of space.

(d) **OBJECTIVES OF AERONAUTICAL AND SPACE ACTIVITIES.**—The aeronautical and space activities of the United States shall be conducted so as to contribute materially to one or more of the following objectives:

(1) The expansion of human knowledge of the Earth and of phenomena in the atmosphere and space.

(2) The improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles.

(3) The development and operation of vehicles capable of carrying instruments, equipment, supplies, and living organisms through space.

(4) The establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes.

(5) The preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere.

(6) The making available to agencies directly concerned with national defense of discoveries that have military value or significance, and the furnishing by such agencies, to the civilian agency established to direct and control nonmilitary aeronautical and space activities, of information as to discoveries which have value or significance to that agency.

(7) Cooperation by the United States with other nations and groups of nations in work done pursuant to this chapter and in the peaceful application of the results thereof.

(8) The most effective utilization of the scientific and engineering resources of the United States, with close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment.

(9) The preservation of the United States preeminent position in aeronautics and space through research and technology development related to associated manufacturing processes.

(e) **GROUND PROPULSION SYSTEMS RESEARCH AND DEVELOPMENT.**—Congress declares that the general welfare of the United States requires that the unique competence in scientific and engineering systems of the Administration also be directed toward

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ground propulsion systems research and development. Such development shall be conducted so as to contribute to the objectives of developing energy and petroleum-conserving ground propulsion systems, and of minimizing the environmental degradation caused by such systems.

(f) **BIOENGINEERING RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAMS.**—Congress declares that the general welfare of the United States requires that the unique competence of the Administration in science and engineering systems be directed to assisting in bioengineering research, development, and demonstration programs designed to alleviate and minimize the effects of disability.

(g) **WARNING AND MITIGATION OF POTENTIAL HAZARDS OF NEAR-EARTH OBJECTS.**—Congress declares that the general welfare and security of the United States require that the unique competence of the Administration be directed to detecting, tracking, cataloguing, and characterizing near-Earth asteroids and comets in order to provide warning and mitigation of the potential hazard of such near-Earth objects to the Earth.

(h) **PURPOSE OF CHAPTER.**—It is the purpose of this chapter to carry out and effectuate the policies declared in subsections (a) to (g).

### § 20103. Definitions

In this chapter:

(1) **AERONAUTICAL AND SPACE ACTIVITIES.**—The term “aeronautical and space activities” means—

(A) research into, and the solution of, problems of flight within and outside the Earth’s atmosphere;

(B) the development, construction, testing, and operation for research purposes of aeronautical and space vehicles;

(C) the operation of a space transportation system including the space shuttle, upper stages, space platforms, and related equipment; and

(D) such other activities as may be required for the exploration of space.

(2) **AERONAUTICAL AND SPACE VEHICLES.**—The term “aeronautical and space vehicles” means aircraft, missiles, satellites, and other space vehicles, manned and unmanned, together with related equipment, devices, components, and parts.

## SUBCHAPTER II—COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

### § 20111. National Aeronautics and Space Administration

(a) **ESTABLISHMENT AND APPOINTMENT OF ADMINISTRATOR.**—There is established the National Aeronautics and Space Administration. The Administration shall be headed by an Administrator, who shall be appointed from civilian life by the President by and with the advice and consent of the Senate. Under the supervision and direction of the President, the Administrator shall be responsible for the exercise of all powers and the discharge of all duties of the Administration and shall have authority and control over all personnel and activities thereof.

(b) **DEPUTY ADMINISTRATOR.**—There shall be in the Administration a Deputy Administrator, who shall be appointed from civilian life by the President by and with the advice and consent of the

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Senate. The Deputy Administrator shall perform such duties and exercise such powers as the Administrator may prescribe. The Deputy Administrator shall act for, and exercise the powers of, the Administrator during the Administrator's absence or disability.

(c) RESTRICTION ON OTHER BUSINESS OR EMPLOYMENT.—The Administrator and the Deputy Administrator shall not engage in any other business, vocation, or employment while serving as such.

#### § 20112. Functions of the Administration

(a) PLANNING, DIRECTING, AND CONDUCTING AERONAUTICAL AND SPACE ACTIVITIES.—The Administration, in order to carry out the purpose of this chapter, shall—

(1) plan, direct, and conduct aeronautical and space activities;

(2) arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations;

(3) provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof;

(4) seek and encourage, to the maximum extent possible, the fullest commercial use of space; and

(5) encourage and provide for Federal Government use of commercially provided space services and hardware, consistent with the requirements of the Federal Government.

(b) RESEARCH AND DEVELOPMENT IN CERTAIN TECHNOLOGIES.—

(1) GROUND PROPULSION TECHNOLOGIES.—The Administration shall, to the extent of appropriated funds, initiate, support, and carry out such research, development, demonstration, and other related activities in ground propulsion technologies as are provided for in sections 4 to 10 of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 (15 U.S.C. 2503 to 2509).

(2) SOLAR HEATING AND COOLING TECHNOLOGIES.—The Administration shall initiate, support, and carry out such research, development, demonstrations, and other related activities in solar heating and cooling technologies (to the extent that funds are appropriated therefor) as are provided for in sections 5, 6, and 9 of the Solar Heating and Cooling Demonstration Act of 1974 (42 U.S.C. 5503, 5504, 5507).

#### § 20113. Powers of the Administration in performance of functions

(a) RULES AND REGULATIONS.—In the performance of its functions, the Administration is authorized to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of its operations and the exercise of the powers vested in it by law.

(b) OFFICERS AND EMPLOYEES.—In the performance of its functions, the Administration is authorized to appoint and fix the compensation of officers and employees as may be necessary to carry out such functions. The officers and employees shall be appointed in accordance with the civil service laws and their compensation fixed in accordance with chapter 51 and subchapter III of chapter 53 of title 5, except that—

(1) to the extent the Administrator deems such action necessary to the discharge of the Administrator's responsibilities, the Administrator may appoint not more than 425 of the scientific, engineering, and administrative personnel of the Administration without regard to such laws, and may fix the compensation of such personnel not in excess of the rate of basic pay payable for level III of the Executive Schedule; and

(2) to the extent the Administrator deems such action necessary to recruit specially qualified scientific and engineering talent, the Administrator may establish the entrance grade for scientific and engineering personnel without previous service in the Federal Government at a level up to 2 grades higher than the grade provided for such personnel under the General Schedule, and fix their compensation accordingly.

(c) PROPERTY.—In the performance of its functions, the Administration is authorized—

(1) to acquire (by purchase, lease, condemnation, or otherwise), construct, improve, repair, operate, and maintain laboratories, research and testing sites and facilities, aeronautical and space vehicles, quarters and related accommodations for employees and dependents of employees of the Administration, and such other real and personal property (including patents), or any interest therein, as the Administration deems necessary within and outside the continental United States;

(2) to acquire by lease or otherwise, through the Administrator of General Services, buildings or parts of buildings in the District of Columbia for the use of the Administration for a period not to exceed 10 years without regard to section 8141 of title 40;

(3) to lease to others such real and personal property;

(4) to sell and otherwise dispose of real and personal property (including patents and rights thereunder) in accordance with the provisions of chapters 1 to 11 of title 40 and in accordance with title III of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 251 et seq.); and

(5) to provide by contract or otherwise for cafeterias and other necessary facilities for the welfare of employees of the Administration at its installations and purchase and maintain equipment therefor.

(d) GIFTS.—In the performance of its functions, the Administration is authorized to accept unconditional gifts or donations of services, money, or property, real, personal, or mixed, tangible or intangible.

(e) CONTRACTS, LEASES, AND AGREEMENTS.—In the performance of its functions, the Administration is authorized, without regard to subsections (a) and (b) of section 3324 of title 31, to enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in the conduct of its work and on such terms as it may deem appropriate, with any agency or instrumentality of the United States, or with any State, territory, or possession, or with any political subdivision thereof, or with any person, firm, association, corporation, or educational institution. To the maximum extent practicable and consistent with the accomplishment of the purpose of this chapter, such contracts, leases, agreements, and other transactions shall be allocated by the Administrator in a manner which will enable small-business

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concerns to participate equitably and proportionately in the conduct of the work of the Administration.

(f) **COOPERATION WITH FEDERAL AGENCIES AND OTHERS.**—In the performance of its functions, the Administration is authorized to use, with their consent, the services, equipment, personnel, and facilities of Federal and other agencies with or without reimbursement, and on a similar basis to cooperate with other public and private agencies and instrumentalities in the use of services, equipment, and facilities. Each department and agency of the Federal Government shall cooperate fully with the Administration in making its services, equipment, personnel, and facilities available to the Administration, and any such department or agency is authorized, notwithstanding any other provision of law, to transfer to or to receive from the Administration, without reimbursement, aeronautical and space vehicles, and supplies and equipment other than administrative supplies or equipment.

(g) **ADVISORY COMMITTEES.**—In the performance of its functions, the Administration is authorized to appoint such advisory committees as may be appropriate for purposes of consultation and advice to the Administration.

(h) **OFFICES AND PROCEDURES.**—In the performance of its functions, the Administration is authorized to establish within the Administration such offices and procedures as may be appropriate to provide for the greatest possible coordination of its activities under this chapter with related scientific and other activities being carried on by other public and private agencies and organizations.

(i) **TEMPORARY OR INTERMITTENT SERVICES OF EXPERTS OR CONSULTANTS.**—In the performance of its functions, the Administration is authorized to obtain services as provided by section 3109 of title 5, but at rates for individuals not to exceed the per diem rate equivalent to the maximum rate payable under section 5376 of title 5.

(j) **ALIENS.**—In the performance of its functions, the Administration is authorized, when determined by the Administrator to be necessary, and subject to such security investigations as the Administrator may determine to be appropriate, to employ aliens without regard to statutory provisions prohibiting payment of compensation to aliens.

(k) **CONCESSIONS FOR VISITORS' FACILITIES.**—

(1) **IN GENERAL.**—In the performance of its functions, the Administration is authorized to provide by concession, without regard to section 1302 of title 40, on such terms as the Administrator may deem to be appropriate and necessary to protect the concessioner against loss of the concessioner's investment in property (but not anticipated profits) resulting from the Administration's discretionary acts and decisions, for the construction, maintenance, and operation of all manner of facilities and equipment for visitors to the several installations of the Administration and, in connection therewith, to provide services incident to the dissemination of information concerning its activities to such visitors, without charge or with a reasonable charge therefor (with this authority being in addition to any other authority that the Administration may have to provide facilities, equipment, and services for visitors to its installations).

(2) PUBLIC NOTICE AND DUE CONSIDERATION OF PROPOSALS.—A concession agreement under this subsection may be negotiated with any qualified proposer following due consideration of all proposals received after reasonable public notice of the intention to contract.

(3) REASONABLE OPPORTUNITY FOR PROFIT.—The concessioner shall be afforded a reasonable opportunity to make a profit commensurate with the capital invested and the obligations assumed. The consideration paid by the concessioner for the concession shall be based on the probable value of the opportunity and not on maximizing revenue to the United States.

(4) RECORDS AND ACCESS TO RECORDS.—Each concession agreement shall specify the manner in which the concessioner's records are to be maintained, and shall provide for access to the records by the Administration and the Comptroller General of the United States for a period of 5 years after the close of the business year to which the records relate.

(5) POSSESSORY INTERESTS.—A concessioner may be accorded a possessory interest, consisting of all incidents of ownership except legal title (which shall vest in the United States), in any structure, fixture, or improvement the concessioner constructs or locates upon land owned by the United States. With the approval of the Administration, such possessory interest may be assigned, transferred, encumbered, or relinquished by the concessioner, and, unless otherwise provided by contract, shall not be extinguished by the expiration or other termination of the concession and may not be taken for public use without just compensation.

(l) DETAILING MEMBERS OF ARMED SERVICES.—In the performance of its functions, the Administration is authorized, with the approval of the President, to enter into cooperative agreements under which members of the Army, Navy, Air Force, and Marine Corps may be detailed by the appropriate Secretary for services in the performance of functions under this chapter to the same extent as that to which they might be lawfully assigned in the Department of Defense.

(m) CLAIMS AGAINST THE UNITED STATES.—In the performance of its functions, the Administration is authorized—

(1) to consider, ascertain, adjust, determine, settle, and pay, on behalf of the United States, in full satisfaction thereof, any claim for \$25,000 or less against the United States for bodily injury, death, or damage to or loss of real or personal property resulting from the conduct of the Administration's functions as specified in section 20112(a) of this title, where such claim is presented to the Administration in writing within 2 years after the accident or incident out of which the claim arises; and

(2) if the Administration considers that a claim in excess of \$25,000 is meritorious and would otherwise be covered by this subsection, to report the facts and circumstances to Congress for its consideration.

#### **§ 20114. Administration and Department of Defense coordination**

(a) ADVISE AND CONSULT.—The Administration and the Department of Defense, through the President, shall advise and consult with each other on all matters within their respective jurisdictions

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related to aeronautical and space activities and shall keep each other fully and currently informed with respect to such activities.

(b) REFERRAL TO THE PRESIDENT.—If the Secretary of Defense concludes that any request, action, proposed action, or failure to act on the part of the Administrator is adverse to the responsibilities of the Department of Defense, or the Administrator concludes that any request, action, proposed action, or failure to act on the part of the Department of Defense is adverse to the responsibilities of the Administration, and the Administrator and the Secretary of Defense are unable to reach an agreement with respect to the matter, either the Administrator or the Secretary of Defense may refer the matter to the President for a decision (which shall be final).

#### **§ 20115. International cooperation**

The Administration, under the foreign policy guidance of the President, may engage in a program of international cooperation in work done pursuant to this chapter, and in the peaceful application of the results thereof, pursuant to agreements made by the President with the advice and consent of the Senate.

#### **§ 20116. Reports to Congress**

(a) PRESIDENTIAL REPORT.—The President shall transmit to Congress in May of each year a report, which shall include—

(1) a comprehensive description of the programmed activities and the accomplishments of all agencies of the United States in the field of aeronautics and space activities during the preceding fiscal year; and

(2) an evaluation of such activities and accomplishments in terms of the attainment of, or the failure to attain, the objectives described in section 20102(d) of this title.

(b) RECOMMENDATIONS FOR ADDITIONAL LEGISLATION.—Any report made under this section shall contain such recommendations for additional legislation as the Administrator or the President may consider necessary or desirable for the attainment of the objectives described in section 20102(d) of this title.

(c) CLASSIFIED INFORMATION.—No information that has been classified for reasons of national security shall be included in any report made under this section, unless the information has been declassified by, or pursuant to authorization given by, the President.

#### **§ 20117. Disposal of excess land**

Notwithstanding the provisions of this or any other law, the Administration may not report to a disposal agency as excess to the needs of the Administration any land having an estimated value in excess of \$50,000 that is owned by the United States and under the jurisdiction and control of the Administration, unless—

(1) a period of 30 days has passed after the receipt by the Speaker and the Committee on Science and Technology of the House of Representatives and the President and the Committee on Commerce, Science, and Transportation of the Senate of a report by the Administrator or the Administrator's designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such action; or

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(2) each such committee before the expiration of that period has transmitted to the Administrator written notice to the effect that the committee has no objection to the proposed action.

### SUBCHAPTER III—GENERAL ADMINISTRATIVE PROVISIONS

#### § 20131. Public access to information

(a) PUBLIC INSPECTION.—Information obtained or developed by the Administrator in the performance of the Administrator's functions under this chapter shall be made available for public inspection, except information—

- (1) authorized or required by Federal statute to be withheld;
- (2) classified to protect the national security; or
- (3) described in subsection (b).

(b) SPECIAL HANDLING OF TRADE SECRET OR CONFIDENTIAL INFORMATION.—

(1) IN GENERAL.—The Administrator, for a period of up to 5 years after the development of information described in paragraph (2), may provide appropriate protections against the dissemination of such information, including exemption from subchapter II of chapter 5 of title 5.

(2) INFORMATION DESCRIBED.—Information referred to in paragraph (1) is information that results from activities conducted under an agreement entered into under subsections (e) and (f) of section 20113 of this title, and that would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of section 552(b)(4) of title 5 if the information had been obtained from a non-Federal party participating in such an agreement.

(c) COMMITTEES OF CONGRESS.—Nothing in this chapter authorizes the withholding of information by the Administrator from the duly authorized committees of Congress.

#### § 20132. Security requirements

The Administrator shall establish such security requirements, restrictions, and safeguards as the Administrator deems necessary in the interest of the national security. The Administrator may arrange with the Director of the Office of Personnel Management for the conduct of such security or other personnel investigations of the Administration's officers, employees, and consultants, and its contractors and subcontractors and their officers and employees, actual or prospective, as the Administrator deems appropriate. If any such investigation develops any data reflecting that the individual who is the subject of the investigation is of questionable loyalty, the matter shall be referred to the Federal Bureau of Investigation for the conduct of a full field investigation, the results of which shall be furnished to the Administrator.

#### § 20133. Permission to carry firearms

As the Administrator deems necessary in the public interest, the Administrator may—

- (1) direct officers and employees of the Administration to carry firearms while in the conduct of their official duties; and
- (2) authorize employees of contractors and subcontractors of the Administration who are engaged in the protection of

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property owned by the United States, and located at facilities owned by or contracted to the United States, to carry firearms while in the conduct of their official duties.

#### § 20134. Arrest authority

Under regulations prescribed by the Administrator and approved by the Attorney General, employees of the Administration and of its contractors and subcontractors authorized to carry firearms under section 20133 of this title may arrest without warrant for any offense against the United States committed in their presence, or for any felony cognizable under the laws of the United States if they have reasonable grounds to believe that the person to be arrested has committed or is committing such felony. Persons granted authority to make arrests by this section may exercise that authority only while guarding and protecting property owned or leased by, or under the control of, the United States under the administration and control of the Administration or one of its contractors or subcontractors, at facilities owned by or contracted to the Administration.

#### § 20135. Property rights in inventions

(a) DEFINITIONS.—In this section:

(1) CONTRACT.—The term “contract” means any actual or proposed contract, agreement, understanding, or other arrangement, and includes any assignment, substitution of parties, or subcontract executed or entered into thereunder.

(2) MADE.—The term “made”, when used in relation to any invention, means the conception or first actual reduction to practice of such invention.

(3) PERSON.—The term “person” means any individual, partnership, corporation, association, institution, or other entity.

(b) EXCLUSIVE PROPERTY OF UNITED STATES.—

(1) IN GENERAL.—An invention shall be the exclusive property of the United States if it is made in the performance of any work under any contract of the Administration, and the Administrator determines that—

(A) the person who made the invention was employed or assigned to perform research, development, or exploration work and the invention is related to the work the person was employed or assigned to perform, or was within the scope of the person’s employment duties, whether or not it was made during working hours, or with a contribution by the Government of the use of Government facilities, equipment, materials, allocated funds, information proprietary to the Government, or services of Government employees during working hours; or

(B) the person who made the invention was not employed or assigned to perform research, development, or exploration work, but the invention is nevertheless related to the contract, or to the work or duties the person was employed or assigned to perform, and was made during working hours, or with a contribution from the Government of the sort referred to in subparagraph (A).

(2) PATENT TO UNITED STATES.—If an invention is the exclusive property of the United States under paragraph (1), and if such invention is patentable, a patent therefor shall be issued

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to the United States upon application made by the Administrator, unless the Administrator waives all or any part of the rights of the United States to such invention in conformity with the provisions of subsection (g).

(c) CONTRACT PROVISIONS FOR FURNISHING REPORTS OF INVENTIONS, DISCOVERIES, IMPROVEMENTS, OR INNOVATIONS.—Each contract entered into by the Administrator with any party for the performance of any work shall contain effective provisions under which the party shall furnish promptly to the Administrator a written report containing full and complete technical information concerning any invention, discovery, improvement, or innovation which may be made in the performance of any such work.

(d) PATENT APPLICATION.—No patent may be issued to any applicant other than the Administrator for any invention which appears to the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office (hereafter in this section referred to as the “Director”) to have significant utility in the conduct of aeronautical and space activities unless the applicant files with the Director, with the application or within 30 days after request therefor by the Director, a written statement executed under oath setting forth the full facts concerning the circumstances under which the invention was made and stating the relationship (if any) of the invention to the performance of any work under any contract of the Administration. Copies of each such statement and the application to which it relates shall be transmitted forthwith by the Director to the Administrator.

(e) ISSUANCE OF PATENT TO APPLICANT.—Upon any application as to which any such statement has been transmitted to the Administrator, the Director may, if the invention is patentable, issue a patent to the applicant unless the Administrator, within 90 days after receipt of the application and statement, requests that the patent be issued to the Administrator on behalf of the United States. If, within such time, the Administrator files such a request with the Director, the Director shall transmit notice thereof to the applicant, and shall issue such patent to the Administrator unless the applicant within 30 days after receipt of the notice requests a hearing before the Board of Patent Appeals and Interferences on the question whether the Administrator is entitled under this section to receive the patent. The Board may hear and determine, in accordance with rules and procedures established for interference cases, the question so presented, and its determination shall be subject to appeal by the applicant or by the Administrator to the United States Court of Appeals for the Federal Circuit in accordance with procedures governing appeals from decisions of the Board of Patent Appeals and Interferences in other proceedings.

(f) SUBSEQUENT TRANSFER OF PATENT IN CASE OF FALSE REPRESENTATIONS.—Whenever a patent has been issued to an applicant in conformity with subsection (e), and the Administrator thereafter has reason to believe that the statement filed by the applicant in connection with the patent contained a false representation of a material fact, the Administrator, within 5 years after the date of issuance of the patent, may file with the Director a request for the transfer to the Administrator of title to the patent on the records of the Director. Notice of any such request shall be transmitted by the Director to the owner of record of the patent,

and title to the patent shall be so transferred to the Administrator unless, within 30 days after receipt of notice, the owner of record requests a hearing before the Board of Patent Appeals and Interferences on the question whether any such false representation was contained in the statement filed in connection with the patent. The question shall be heard and determined, and the determination shall be subject to review, in the manner prescribed by subsection (e) for questions arising thereunder. A request made by the Administrator under this subsection for the transfer of title to a patent, and prosecution for the violation of any criminal statute, shall not be barred by the failure of the Administrator to make a request under subsection (e) for the issuance of the patent to the Administrator, or by any notice previously given by the Administrator stating that the Administrator had no objection to the issuance of the patent to the applicant.

(g) **WAIVER OF RIGHTS TO INVENTIONS.**—Under such regulations in conformity with this subsection as the Administrator shall prescribe, the Administrator may waive all or any part of the rights of the United States under this section with respect to any invention or class of inventions made or which may be made by any person or class of persons in the performance of any work required by any contract of the Administration if the Administrator determines that the interests of the United States will be served thereby. Any such waiver may be made upon such terms and under such conditions as the Administrator shall determine to be required for the protection of the interests of the United States. Each such waiver made with respect to any invention shall be subject to the reservation by the Administrator of an irrevocable, nonexclusive, nontransferable, royalty-free license for the practice of such invention throughout the world by or on behalf of the United States or any foreign government pursuant to any treaty or agreement with the United States. Each proposal for any waiver under this subsection shall be referred to an Inventions and Contributions Board which shall be established by the Administrator within the Administration. Such Board shall accord to each interested party an opportunity for hearing, and shall transmit to the Administrator its findings of fact with respect to such proposal and its recommendations for action to be taken with respect thereto.

(h) **PROTECTION OF TITLE.**—The Administrator is authorized to take all suitable and necessary steps to protect any invention or discovery to which the Administrator has title, and to require contractors or persons who retain title to inventions or discoveries under this section to protect the inventions or discoveries to which the Administration has or may acquire a license of use.

(i) **ADMINISTRATION AS DEFENSE AGENCY.**—The Administration shall be considered a defense agency of the United States for the purpose of chapter 17 of title 35.

(j) **OBJECTS INTENDED FOR LAUNCH, LAUNCHED, OR ASSEMBLED IN OUTER SPACE.**—Any object intended for launch, launched, or assembled in outer space shall be considered a vehicle for the purpose of section 272 of title 35.

(k) **USE OR MANUFACTURE OF PATENTED INVENTIONS INCORPORATED IN SPACE VEHICLES LAUNCHED FOR PERSONS OTHER THAN UNITED STATES.**—The use or manufacture of any patented invention incorporated in a space vehicle launched by the United States Government for a person other than the United States shall not be considered to be a use or manufacture by or for the United

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States within the meaning of section 1498(a) of title 28, unless the Administration gives an express authorization or consent for such use or manufacture.

**§ 20136. Contributions awards**

(a) APPLICATIONS.—Subject to the provisions of this section, the Administrator is authorized, on the Administrator's own initiative or on application of any person, to make a monetary award, in an amount and on terms the Administrator determines to be warranted, to any person (as defined by section 20135(a) of this title) for any scientific or technical contribution to the Administration which is determined by the Administrator to have significant value in the conduct of aeronautical and space activities. Each application made for such an award shall be referred to the Inventions and Contributions Board established under section 20135 of this title. Such Board shall accord to each applicant an opportunity for hearing on the application, and shall transmit to the Administrator its recommendation as to the terms of the award, if any, to be made to the applicant for the contribution. In determining the terms and conditions of an award the Administrator shall take into account—

(1) the value of the contribution to the United States;

(2) the aggregate amount of any sums which have been expended by the applicant for the development of the contribution;

(3) the amount of any compensation (other than salary received for services rendered as an officer or employee of the Government) previously received by the applicant for or on account of the use of the contribution by the United States; and

(4) any other factors the Administrator determines to be material.

(b) APPORTIONMENT OF AWARDS.—If more than one applicant under subsection (a) claims an interest in the same contribution, the Administrator shall ascertain and determine the respective interests of the applicants, and shall apportion any award to be made among the applicants in amounts the Administrator determines to be equitable.

(c) SURRENDER OF OTHER CLAIMS.—No award may be made under subsection (a) unless the applicant surrenders, by means the Administrator determines to be effective, all claims that the applicant may have to receive any compensation (other than the award made under this section) for the use of the contribution or any element thereof at any time by or on behalf of the United States, or by or on behalf of any foreign government pursuant to a treaty or agreement with the United States, within the United States or at any other place.

(d) REPORT AND WAITING PERIOD.—No award may be made under subsection (a) in an amount exceeding \$100,000 unless the Administrator transmits to the appropriate committees of Congress a full and complete report concerning the amount and terms of, and the basis for, the proposed award, and a period of 30 calendar days of regular session of Congress expires after receipt of the report by the committees.

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**§ 20137. Malpractice and negligence suits against United States**

(a) **EXCLUSIVE REMEDY.**—The remedy against the United States provided by sections 1346(b) and 2672 of title 28, for damages for personal injury, including death, caused by the negligent or wrongful act or omission of any physician, dentist, nurse, pharmacist, or paramedical or other supporting personnel (including medical and dental technicians, nursing assistants, and therapists) of the Administration in the performance of medical, dental, or related health care functions (including clinical studies and investigations) while acting within the scope of such person's duties or employment therein or therefor shall be exclusive of any other civil action or proceeding by reason of the same subject matter against such person (or the estate of such person) whose act or omission gave rise to the action or proceeding.

(b) **ATTORNEY GENERAL TO DEFEND ANY CIVIL ACTION OR PROCEEDING FOR MALPRACTICE OR NEGLIGENCE.**—The Attorney General shall defend any civil action or proceeding brought in any court against any person referred to in subsection (a) (or the estate of such person) for any such injury. Any such person against whom such civil action or proceeding is brought shall deliver within such time after date of service or knowledge of service as determined by the Attorney General, all process served upon such person or an attested true copy thereof to such person's immediate superior or to whomever was designated by the Administrator to receive such papers. Such person shall promptly furnish copies of the pleading and process therein to the United States Attorney for the district embracing the place wherein the proceeding is brought, to the Attorney General, and to the Administrator.

(c) **REMOVAL OF ACTIONS.**—Upon a certification by the Attorney General that any person described in subsection (a) was acting in the scope of such person's duties or employment at the time of the incident out of which the suit arose, any such civil action or proceeding commenced in a State court shall be removed without bond at any time before trial by the Attorney General to the district court of the United States of the district and division embracing the place wherein it is pending and the proceeding deemed a tort action brought against the United States under the provisions of title 28, and all references thereto. Should a district court of the United States determine, on a hearing on a motion to remand held before a trial on the merits, that the case so removed is one in which a remedy by suit within the meaning of subsection (a) is not available against the United States, the case shall be remanded to the State court.

(d) **COMPROMISE OR SETTLEMENT OF CLAIMS.**—The Attorney General may compromise or settle any claim asserted in such civil action or proceeding in the manner provided in section 2677 of title 28, and with the same effect.

(e) **APPLICABILITY OF OTHER PROVISIONS OF LAW.**—For purposes of this section, the provisions of section 2680(h) of title 28 shall not apply to any cause of action arising out of a negligent or wrongful act or omission in the performance of medical, dental, or related health care functions (including clinical studies and investigations).

(f) **LIABILITY INSURANCE FOR PERSONS ASSIGNED TO FOREIGN COUNTRIES OR NON-FEDERAL AGENCIES.**—The Administrator or the Administrator's designee may, to the extent that the Administrator

or the designee deems appropriate, hold harmless or provide liability insurance for any person described in subsection (a) for damages for personal injury, including death, caused by such person's negligent or wrongful act or omission in the performance of medical, dental, or related health care functions (including clinical studies and investigations) while acting within the scope of such person's duties if such person is assigned to a foreign country or detailed for service with other than a Federal department, agency, or instrumentality or if the circumstances are such as are likely to preclude the remedies of third persons against the United States described in section 2679(b) of title 28, for such damage or injury.

**§ 20138. Insurance and indemnification**

(a) DEFINITIONS.—In this section:

(1) SPACE VEHICLE.—The term “space vehicle” means an object intended for launch, launched, or assembled in outer space, including the space shuttle and other components of a space transportation system, together with related equipment, devices, components, and parts.

(2) THIRD PARTY.—The term “third party” means any person who may institute a claim against a user for death, bodily injury, or loss of or damage to property.

(3) USER.—The term “user” includes anyone who enters into an agreement with the Administration for use of all or a portion of a space vehicle, who owns or provides property to be flown on a space vehicle, or who employs a person to be flown on a space vehicle.

(b) AUTHORIZATION.—The Administration is authorized on such terms and to the extent it may deem appropriate to provide liability insurance for any user of a space vehicle to compensate all or a portion of claims by third parties for death, bodily injury, or loss of or damage to property resulting from activities carried on in connection with the launch, operations, or recovery of the space vehicle. Appropriations available to the Administration may be used to acquire such insurance, but such appropriations shall be reimbursed to the maximum extent practicable by the users under reimbursement policies established pursuant to section 20113 of this title.

(c) INDEMNIFICATION.—Under such regulations in conformity with this section as the Administrator shall prescribe taking into account the availability, cost, and terms of liability insurance, any agreement between the Administration and a user of a space vehicle may provide that the United States will indemnify the user against claims (including reasonable expenses of litigation or settlement) by third parties for death, bodily injury, or loss of or damage to property resulting from activities carried on in connection with the launch, operations, or recovery of the space vehicle, but only to the extent that such claims are not compensated by liability insurance of the user. Such indemnification may be limited to claims resulting from other than the actual negligence or willful misconduct of the user.

(d) TERMS OF INDEMNIFICATION AGREEMENT.—An agreement made under subsection (c) that provides indemnification must also provide for—

(1) notice to the United States of any claim or suit against the user for the death, bodily injury, or loss of or damage to the property; and

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(2) control of or assistance in the defense by the United States, at its election, of that suit or claim.

(e) CERTIFICATION OF JUST AND REASONABLE AMOUNT.—No payment may be made under subsection (c) unless the Administrator or the Administrator's designee certifies that the amount is just and reasonable.

(f) PAYMENTS.—Upon the approval by the Administrator, payments under subsection (c) may be made, at the Administrator's election, either from funds available for research and development not otherwise obligated or from funds appropriated for such payments.

### § 20139. Insurance for experimental aerospace vehicles

(a) DEFINITIONS.—In this section:

(1) COOPERATING PARTY.—The term “cooperating party” means any person who enters into an agreement with the Administration for the performance of cooperative scientific, aeronautical, or space activities to carry out the purposes of this chapter.

(2) DEVELOPER.—The term “developer” means a United States person (other than a natural person) who—

(A) is a party to an agreement with the Administration for the purpose of developing new technology for an experimental aerospace vehicle;

(B) owns or provides property to be flown or situated on that vehicle; or

(C) employs a natural person to be flown on that vehicle.

(3) EXPERIMENTAL AEROSPACE VEHICLE.—The term “experimental aerospace vehicle” means an object intended to be flown in, or launched into, orbital or suborbital flight for the purpose of demonstrating technologies necessary for a reusable launch vehicle, developed under an agreement between the Administration and a developer.

(4) RELATED ENTITY.—The term “related entity” includes a contractor or subcontractor at any tier, a supplier, a grantee, and an investigator or detailee.

(b) IN GENERAL.—The Administrator may provide liability insurance for, or indemnification to, the developer of an experimental aerospace vehicle developed or used in execution of an agreement between the Administration and the developer.

(c) TERMS AND CONDITIONS.—

(1) IN GENERAL.—Except as otherwise provided in this section, the insurance and indemnification provided by the Administration under subsection (b) to a developer shall be provided on the same terms and conditions as insurance and indemnification is provided by the Administration under section 20138 of this title to the user of a space vehicle.

(2) INSURANCE.—

(A) IN GENERAL.—A developer shall obtain liability insurance or demonstrate financial responsibility in amounts to compensate for the maximum probable loss from claims by—

(i) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with the development or use of an experimental aerospace vehicle; and

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(ii) the United States Government for damage or loss to Government property resulting from such an activity.

(B) **MAXIMUM REQUIRED.**—The Administrator shall determine the amount of insurance required, but, except as provided in subparagraph (C), that amount shall not be greater than the amount required under section 50914(a)(3) of this title for a launch. The Administrator shall publish notice of the Administrator's determination and the applicable amount or amounts in the Federal Register within 10 days after making the determination.

(C) **INCREASE IN DOLLAR AMOUNTS.**—The Administrator may increase the dollar amounts set forth in section 50914(a)(3)(A) of this title for the purpose of applying that section under this section to a developer after consultation with the Comptroller General and such experts and consultants as may be appropriate, and after publishing notice of the increase in the Federal Register not less than 180 days before the increase goes into effect. The Administrator shall make available for public inspection, not later than the date of publication of such notice, a complete record of any correspondence received by the Administration, and a transcript of any meetings in which the Administration participated, regarding the proposed increase.

(D) **SAFETY REVIEW REQUIRED BEFORE ADMINISTRATOR PROVIDES INSURANCE.**—The Administrator may not provide liability insurance or indemnification under subsection (b) unless the developer establishes to the satisfaction of the Administrator that appropriate safety procedures and practices are being followed in the development of the experimental aerospace vehicle.

(3) **NO INDEMNIFICATION WITHOUT CROSS-WAIVER.**—Notwithstanding subsection (b), the Administrator may not indemnify a developer of an experimental aerospace vehicle under this section unless there is an agreement between the Administration and the developer described in subsection (d).

(4) **APPLICATION OF CERTAIN PROCEDURES.**—If the Administrator requests additional appropriations to make payments under this section, like the payments that may be made under section 20138(c) of this title, then the request for those appropriations shall be made in accordance with the procedures established by subsections (d) and (e) of section 50915 of this title.

(d) **CROSS-WAIVERS.**—

(1) **ADMINISTRATOR AUTHORIZED TO WAIVE.**—The Administrator, on behalf of the United States, and its departments, agencies, and instrumentalities, may reciprocally waive claims with a developer or cooperating party and with the related entities of that developer or cooperating party under which each party to the waiver agrees to be responsible, and agrees to ensure that its own related entities are responsible, for damage or loss to its property for which it is responsible, or for losses resulting from any injury or death sustained by its own employees or agents, as a result of activities connected to the agreement or use of the experimental aerospace vehicle.

(2) **LIMITATIONS.**—

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(A) **CLAIMS.**—A reciprocal waiver under paragraph (1) may not preclude a claim by any natural person (including, but not limited to, a natural person who is an employee of the United States, the developer, the cooperating party, or their respective subcontractors) or that natural person's estate, survivors, or subrogees for injury or death, except with respect to a subrogee that is a party to the waiver or has otherwise agreed to be bound by the terms of the waiver.

(B) **LIABILITY FOR NEGLIGENCE.**—A reciprocal waiver under paragraph (1) may not absolve any party of liability to any natural person (including, but not limited to, a natural person who is an employee of the United States, the developer, the cooperating party, or their respective subcontractors) or such a natural person's estate, survivors, or subrogees for negligence, except with respect to a subrogee that is a party to the waiver or has otherwise agreed to be bound by the terms of the waiver.

(C) **INDEMNIFICATION FOR DAMAGES.**—A reciprocal waiver under paragraph (1) may not be used as the basis of a claim by the Administration, or the developer or cooperating party, for indemnification against the other for damages paid to a natural person, or that natural person's estate, survivors, or subrogees, for injury or death sustained by that natural person as a result of activities connected to the agreement or use of the experimental aerospace vehicle.

(D) **WILLFUL MISCONDUCT.**—A reciprocal waiver under paragraph (1) may not relieve the United States, the developer, the cooperating party, or the related entities of the developer or cooperating party, of liability for damage or loss resulting from willful misconduct.

(3) **EFFECT ON PREVIOUS WAIVERS.**—This subsection applies to any waiver of claims entered into by the Administration without regard to the date on which the Administration entered into the waiver.

(e) **RELATIONSHIP TO OTHER LAWS.**—

(1) **SECTION 20138.**—This section does not apply to any object, transaction, or operation to which section 20138 of this title applies.

(2) **SECTION 50919(g)(1).**—The Administrator may not provide indemnification to a developer under this section for launches subject to license under section 50919(g)(1) of this title.

(f) **TERMINATION.**—

(1) **IN GENERAL.**—The provisions of this section shall terminate on December 31, 2010.

(2) **EFFECT OF TERMINATION ON AGREEMENT.**—The termination of this section shall not terminate or otherwise affect any cross-waiver agreement, insurance agreement, indemnification agreement, or other agreement entered into under this section, except as may be provided in that agreement.

## § 20140. Appropriations

(a) **AUTHORIZATION.**—

(1) **IN GENERAL.**—There are authorized to be appropriated such sums as may be necessary to carry out this chapter,

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except that nothing in this chapter shall authorize the appropriation of any amount for—

(A) the acquisition or condemnation of any real property;

or

(B) any other item of a capital nature (such as plant or facility acquisition, construction, or expansion) which exceeds \$250,000.

(2) AVAILABILITY.—Sums appropriated pursuant to this subsection for the construction of facilities, or for research and development activities, shall remain available until expended.

(b) USE OF FUNDS FOR EMERGENCY REPAIRS OF EXISTING FACILITIES.—Any funds appropriated for the construction of facilities may be used for emergency repairs of existing facilities when such existing facilities are made inoperative by major breakdown, accident, or other circumstances and such repairs are deemed by the Administrator to be of greater urgency than the construction of new facilities.

(c) TERMINATION.—Notwithstanding any other provision of law, the authorization of any appropriation to the Administration shall expire (unless an earlier expiration is specifically provided) at the close of the third fiscal year following the fiscal year in which the authorization was enacted, to the extent that such appropriation has not theretofore actually been made.

#### § 20141. Misuse of agency name and initials

(a) IN GENERAL.—No person (as defined by section 20135(a) of this title) may knowingly use the words “National Aeronautics and Space Administration” or the letters “NASA”, or any combination, variation, or colorable imitation of those words or letters either alone or in combination with other words or letters—

(1) as a firm or business name in a manner reasonably calculated to convey the impression that the firm or business has some connection with, endorsement of, or authorization from, the Administration which does not, in fact, exist; or

(2) in connection with any product or service being offered or made available to the public in a manner reasonably calculated to convey the impression that the product or service has the authorization, support, sponsorship, or endorsement of, or the development, use, or manufacture by or on behalf of the Administration which does not, in fact, exist.

(b) CIVIL PROCEEDING TO ENJOIN.—Whenever it appears to the Attorney General that any person is engaged in an act or practice which constitutes or will constitute conduct prohibited by subsection (a), the Attorney General may initiate a civil proceeding in a district court of the United States to enjoin such act or practice.

#### § 20142. Contracts regarding expendable launch vehicles

(a) COMMITMENTS BEYOND AVAILABLE APPROPRIATIONS.—The Administrator may enter into contracts for expendable launch vehicle services that are for periods in excess of the period for which funds are otherwise available for obligation, provide for the payment for contingent liability which may accrue in excess of available appropriations in the event the Federal Government for its convenience terminates such contracts, and provide for advance payments reasonably related to launch vehicle and related equipment, fabrication, and acquisition costs, if any such contract limits the amount of the payments that the Government is allowed to

make under such contract to amounts provided in advance in appropriation Acts. Such contracts may be limited to sources within the United States when the Administrator determines that such limitation is in the public interest.

(b) **TERMINATION IF FUNDS NOT AVAILABLE.**—If funds are not available to continue any such contract, the contract shall be terminated for the convenience of the Government, and the costs of such contract shall be paid from appropriations originally available for performance of the contract, from other unobligated appropriations currently available for the procurement of launch services, or from funds appropriated for such payments.

### § 20143. Full cost appropriations account structure

(a) **ACCOUNTS FOR APPROPRIATIONS.**—

(1) **DESIGNATION OF 3 ACCOUNTS.**—Appropriations for the Administration shall be made in 3 accounts, “Science, Aeronautics, and Education”, “Exploration Systems and Space Operations”, and an account for amounts appropriated for the necessary expenses of the Office of the Inspector General.

(2) **REPROGRAMMING.**—Within the Exploration Systems and Space Operations account, no more than 10 percent of the funds for a fiscal year for Exploration Systems may be reprogrammed for Space Operations, and no more than 10 percent of the funds for a fiscal year for Space Operations may be reprogrammed for Exploration Systems. This paragraph shall not apply to reprogramming for the purposes described in subsection (b)(2).

(3) **AVAILABILITY.**—Appropriations shall remain available for 2 fiscal years, unless otherwise specified in law. Each account shall include the planned full costs of Administration activities.

(b) **TRANSFERS AMONG ACCOUNTS.**—

(1) **IN GENERAL.**—To ensure the safe, timely, and successful accomplishment of Administration missions, the Administration may transfer among accounts as necessary, amounts for—

- (A) Federal salaries and benefits;
  - (B) training, travel, and awards;
  - (C) facility and related costs;
  - (D) information technology services;
  - (E) publishing services;
  - (F) science, engineering, fabricating, and testing services;
- and

(G) other administrative services.

(2) **DISASTER, ACT OF TERRORISM, EMERGENCY RESCUE.**—The Administration may also transfer amounts among accounts for the immediate costs of recovering from damage caused by a major disaster (as defined in section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122)) or by an act of terrorism, or for the immediate costs associated with an emergency rescue of astronauts.

(c) **TRANSFER OF UNEXPIRED BALANCES.**—The unexpired balances of prior appropriations to the Administration for activities authorized under this chapter may be transferred to the new account established for such activity in subsection (a). Balances so transferred may be merged with funds in the newly established account and thereafter may be accounted for as one fund under the same terms and conditions.

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**§ 20144. Prize authority**

(a) **IN GENERAL.**—The Administration may carry out a program to competitively award cash prizes to stimulate innovation in basic and applied research, technology development, and prototype demonstration that have the potential for application to the performance of the space and aeronautical activities of the Administration. The Administration may carry out a program to award prizes only in conformity with this section.

(b) **TOPICS.**—In selecting topics for prize competitions, the Administrator shall consult widely both within and outside the Federal Government, and may empanel advisory committees. The Administrator shall give consideration to prize goals such as the demonstration of the ability to provide energy to the lunar surface from space-based solar power systems, demonstration of innovative near-Earth object survey and deflection strategies, and innovative approaches to improving the safety and efficiency of aviation systems.

(c) **ADVERTISING.**—The Administrator shall widely advertise prize competitions to encourage participation.

(d) **REQUIREMENTS AND REGISTRATION.**—For each prize competition, the Administrator shall publish a notice in the Federal Register announcing the subject of the competition, the rules for being eligible to participate in the competition, the amount of the prize, and the basis on which a winner will be selected.

(e) **ELIGIBILITY.**—To be eligible to win a prize under this section, an individual or entity—

(1) shall have registered to participate in the competition pursuant to any rules promulgated by the Administrator under subsection (d);

(2) shall have complied with all the requirements under this section;

(3) in the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States; and

(4) shall not be a Federal entity or Federal employee acting within the scope of their employment.

(f) **LIABILITY.**—

(1) **ASSUMPTION OF RISK.**—Registered participants must agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in a competition, whether such injury, death, damage, or loss arises through negligence or otherwise. For the purposes of this paragraph, the term “related entity” means a contractor or subcontractor at any tier, and a supplier, user, customer, cooperating party, grantee, investigator, or detailee.

(2) **LIABILITY INSURANCE.**—Participants must obtain liability insurance or demonstrate financial responsibility, in amounts determined by the Administrator, for claims by—

(A) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under

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the registered participant's insurance policy and registered participants agreeing to indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and

(B) the Federal Government for damage or loss to Government property resulting from such an activity.

(g) JUDGES.—For each competition, the Administration, either directly or through an agreement under subsection (h), shall assemble a panel of qualified judges to select the winner or winners of the prize competition on the basis described pursuant to subsection (d). Judges for each competition shall include individuals from outside the Administration, including from the private sector. A judge may not—

(1) have personal or financial interests in, or be an employee, officer, director, or agent of any entity that is a registered participant in a competition; or

(2) have a familial or financial relationship with an individual who is a registered participant.

(h) ADMINISTERING THE COMPETITION.—The Administrator may enter into an agreement with a private, nonprofit entity to administer the prize competition, subject to the provisions of this section.

(i) FUNDING.—

(1) SOURCES.—Prizes under this section may consist of Federal appropriated funds and funds provided by the private sector for such cash prizes. The Administrator may accept funds from other Federal agencies for such cash prizes. The Administrator may not give any special consideration to any private sector entity in return for a donation.

(2) AVAILABILITY.—

(A) DEFINITION OF PROVISIONS KNOWN AS THE ANTI-DEFICIENCY ACT.—In this paragraph, the term “provisions known as the Anti-Deficiency Act” means sections 1341, 1342, 1349(a), 1350, 1351, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, and 1519 of title 31.

(B) IN GENERAL.—Notwithstanding any other provision of law, funds appropriated for prize awards under this section shall remain available until expended, and may be transferred, reprogrammed, or expended for other purposes only after the expiration of 10 fiscal years after the fiscal year for which the funds were originally appropriated. No provision in this section permits obligation or payment of funds in violation of the provisions known as the Anti-Deficiency Act.

(3) APPROPRIATION OR COMMITMENT OF FUNDS REQUIRED BEFORE ANNOUNCEMENT OF PRIZE OR INCREASE.—

(A) IN GENERAL.—No prize may be announced under subsection (d) until all the funds needed to pay out the announced amount of the prize have been appropriated or committed in writing by a private source.

(B) INCREASE.—The Administrator may increase the amount of a prize after an initial announcement is made under subsection (d) if—

(i) notice of the increase is provided in the same manner as the initial notice of the prize; and

(ii) the funds needed to pay out the announced amount of the increase have been appropriated or committed in writing by a private source.

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(4) NOTICE TO COMMITTEES FOR PRIZE GREATER THAN \$50,000,000.—No prize competition under this section may offer a prize in an amount greater than \$50,000,000 unless 30 days have elapsed after written notice has been transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(5) APPROVAL OF ADMINISTRATOR FOR PRIZE GREATER THAN \$1,000,000.—No prize competition under this section may result in the award of more than \$1,000,000 in cash prizes without the approval of the Administrator.

(j) USE OF ADMINISTRATION NAME OR INSIGNIA.—A registered participant in a competition under this section may use the Administration's name, initials, or insignia only after prior review and written approval by the Administration.

(k) COMPLIANCE WITH EXISTING LAW.—The Federal Government shall not, by virtue of offering or providing a prize under this section, be responsible for compliance by registered participants in a prize competition with Federal law, including licensing, export control, and non-proliferation laws, and related regulations.

#### § 20145. Lease of non-excess property

(a) IN GENERAL.—The Administrator may enter into a lease under this section with any person or entity (including another department or agency of the Federal Government or an entity of a State or local government) with regard to any non-excess real property and related personal property under the jurisdiction of the Administrator.

(b) CASH CONSIDERATION.—

(1) FAIR MARKET VALUE.—A person or entity entering into a lease under this section shall provide cash consideration for the lease at fair market value as determined by the Administrator.

(2) UTILIZATION.—

(A) IN GENERAL.—The Administrator may utilize amounts of cash consideration received under this subsection for a lease entered into under this section to cover the full costs to the Administration in connection with the lease. These funds shall remain available until expended.

(B) CAPITAL REVITALIZATION AND IMPROVEMENTS.—Of any amounts of cash consideration received under this subsection that are not utilized in accordance with subparagraph (A)—

(i) 35 percent shall be deposited in a capital asset account to be established by the Administrator, shall be available for maintenance, capital revitalization, and improvements of the real property assets and related personal property under the jurisdiction of the Administrator, and shall remain available until expended; and

(ii) the remaining 65 percent shall be available to the respective center or facility of the Administration engaged in the lease of nonexcess real property, and shall remain available until expended for maintenance, capital revitalization, and improvements of the real property assets and related personal property at the

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respective center or facility subject to the concurrence of the Administrator.

(C) NO UTILIZATION FOR DAILY OPERATING COSTS.—Amounts utilized under subparagraph (B) may not be utilized for daily operating costs.

(c) ADDITIONAL TERMS AND CONDITIONS.—The Administrator may require such terms and conditions in connection with a lease under this section as the Administrator considers appropriate to protect the interests of the United States.

(d) RELATIONSHIP TO OTHER LEASE AUTHORITY.—The authority under this section to lease property of the Administration is in addition to any other authority to lease property of the Administration under law.

(e) LEASE RESTRICTIONS.—

(1) NO LEASE BACK OR OTHER CONTRACT.—The Administration is not authorized to lease back property under this section during the term of the out-lease or enter into other contracts with the lessee respecting the property.

(2) CERTIFICATION THAT OUT-LEASE WILL NOT HAVE NEGATIVE IMPACT ON MISSION.—The Administration is not authorized to enter into an out-lease under this section unless the Administrator certifies that the out-lease will not have a negative impact on the mission of the Administration.

(f) REPORTING REQUIREMENTS.—The Administrator shall submit an annual report by January 31st of each year. The report shall include the following:

(1) VALUE OF ARRANGEMENTS AND EXPENDITURES OF REVENUES.—Information that identifies and quantifies the value of the arrangements and expenditures of revenues received under this section.

(2) AVAILABILITY AND USE OF FUNDS FOR OPERATING PLAN.—The availability and use of funds received under this section for the Administration's operating plan.

(g) SUNSET.—The authority to enter into leases under this section shall expire 10 years after December 26, 2007. The expiration under this subsection of authority to enter into leases under this section shall not affect the validity or term of leases or the Administration's retention of proceeds from leases entered into under this section before the expiration of the authority.

#### § 20146. Retrocession of jurisdiction

(a) DEFINITION OF STATE.—In this section, the term “State” means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands, Guam, American Samoa, the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.

(b) RELINQUISHING LEGISLATIVE JURISDICTION.—Notwithstanding any other provision of law, the Administrator may relinquish to a State all or part of the legislative jurisdiction of the United States over lands or interests under the control of the Administrator in that State.

#### § 20147. Recovery and disposition authority

(a) DEFINITIONS.—In this section:

(1) ADMINISTRATION HUMAN SPACE FLIGHT VEHICLE.—The term “Administration human space flight vehicle” means a space vehicle, as defined in section 20138(a) of this title, that—

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- (A) is intended to transport one or more persons;
- (B) is designed to operate in outer space; and
- (C) is either—
  - (i) owned by the Administration; or
  - (ii) owned by an Administration contractor or cooperating party and operated as part of an Administration mission or a joint mission with the Administration.

(2) CREWMEMBER.—The term “crewmember” means an astronaut or other person assigned to an Administration human space flight vehicle.

(b) CONTROL OF REMAINS.—

(1) IN GENERAL.—Subject to paragraphs (2) and (3), when there is an accident or mishap resulting in the death of a crewmember of an Administration human space flight vehicle, the Administrator may take control over the remains of the crewmember and order autopsies and other scientific or medical tests.

(2) TREATMENT.—Each crewmember shall provide the Administrator with the crewmember’s preferences regarding the treatment accorded to the crewmember’s remains and the Administrator shall, to the extent possible, respect those stated preferences.

(3) CONSTRUCTION.—This section shall not be construed to permit the Administrator to interfere with any Federal investigation of a mishap or accident.

#### SUBCHAPTER IV—UPPER ATMOSPHERE RESEARCH

##### § 20161. Congressional declaration of purpose and policy

(a) PURPOSE.—The purpose of this subchapter is to authorize and direct the Administration to develop and carry out a comprehensive program of research, technology, and monitoring of the phenomena of the upper atmosphere so as to provide for an understanding of and to maintain the chemical and physical integrity of the Earth’s upper atmosphere.

(b) POLICY.—Congress declares that it is the policy of the United States to undertake an immediate and appropriate research, technology, and monitoring program that will provide for understanding the physics and chemistry of the Earth’s upper atmosphere.

##### § 20162. Definition of upper atmosphere

In this subchapter, the term “upper atmosphere” means that portion of the Earth’s sensible atmosphere above the troposphere.

##### § 20163. Program authorized

(a) IN GENERAL.—In order to carry out the purposes of this subchapter, the Administration, in cooperation with other Federal agencies, shall initiate and carry out a program of research, technology, monitoring, and other appropriate activities directed to understand the physics and chemistry of the upper atmosphere.

(b) ACTIVITIES.—In carrying out the provisions of this subchapter, the Administration shall—

- (1) arrange for participation by the scientific and engineering community, of both the Nation’s industrial organizations and institutions of higher education, in planning and carrying out appropriate research, in developing necessary technology, and in making necessary observations and measurements;

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(2) provide, by way of grant, contract, scholarships, or other arrangements, to the maximum extent practicable and consistent with other laws, for the widest practicable and appropriate participation of the scientific and engineering community in the program authorized by this subchapter; and

(3) make all results of the program authorized by this subchapter available to the appropriate regulatory agencies and provide for the widest practicable dissemination of such results.

#### § 20164. International cooperation

In carrying out the provisions of this subchapter, the Administration, subject to the direction of the President and after consultation with the Secretary of State, shall make every effort to enlist the support and cooperation of appropriate scientists and engineers of other countries and international organizations.

### CHAPTER 203—RESPONSIBILITIES AND VISION

Sec.

- 20301. General responsibilities.
- 20302. Vision for space exploration.
- 20303. Contribution to innovation.
- 20304. Basic research enhancement.
- 20305. National Academies decadal surveys.

#### § 20301. General responsibilities

(a) PROGRAMS.—The Administrator shall ensure that the Administration carries out a balanced set of programs that shall include, at a minimum, programs in—

- (1) human space flight, in accordance with section 20302 of this title;
- (2) aeronautics research and development; and
- (3) scientific research, which shall include, at a minimum—
  - (A) robotic missions to study the Moon and other planets and their moons, and to deepen understanding of astronomy, astrophysics, and other areas of science that can be productively studied from space;
  - (B) Earth science research and research on the Sun-Earth connection through the development and operation of research satellites and other means;
  - (C) support of university research in space science, Earth science, and microgravity science; and
  - (D) research on microgravity, including research that is not directly related to human exploration.

(b) CONSULTATION AND COORDINATION.—In carrying out the programs of the Administration, the Administrator shall—

- (1) consult and coordinate to the extent appropriate with other relevant Federal agencies, including through the National Science and Technology Council;
- (2) work closely with the private sector, including by—
  - (A) encouraging the work of entrepreneurs who are seeking to develop new means to launch satellites, crew, or cargo;
  - (B) contracting with the private sector for crew and cargo services, including to the International Space Station, to the extent practicable;

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(C) using commercially available products (including software) and services to the extent practicable to support all Administration activities; and

(D) encouraging commercial use and development of space to the greatest extent practicable; and

(3) involve other nations to the extent appropriate.

### § 20302. Vision for space exploration

(a) IN GENERAL.—The Administrator shall establish a program to develop a sustained human presence on the Moon, including a robust precursor program, to promote exploration, science, commerce, and United States preeminence in space, and as a stepping-stone to future exploration of Mars and other destinations. The Administrator is further authorized to develop and conduct appropriate international collaborations in pursuit of these goals.

(b) MILESTONES.—The Administrator shall manage human space flight programs to strive to achieve the following milestones (in conformity with section 70502 of this title):

(1) Returning Americans to the Moon no later than 2020.

(2) Launching the Crew Exploration Vehicle as close to 2010 as possible.

(3) Increasing knowledge of the impacts of long duration stays in space on the human body using the most appropriate facilities available, including the International Space Station.

(4) Enabling humans to land on and return from Mars and other destinations on a timetable that is technically and fiscally possible.

### § 20303. Contribution to innovation

(a) PARTICIPATION IN INTERAGENCY ACTIVITIES.—The Administration shall be a full participant in any interagency effort to promote innovation and economic competitiveness through near-term and long-term basic scientific research and development and the promotion of science, technology, engineering, and mathematics education, consistent with the Administration's mission, including authorized activities.

(b) HISTORIC FOUNDATION.—In order to carry out the participation described in subsection (a), the Administrator shall build on the historic role of the Administration in stimulating excellence in the advancement of physical science and engineering disciplines and in providing opportunities and incentives for the pursuit of academic studies in science, technology, engineering, and mathematics.

(c) BALANCED SCIENCE PROGRAM AND ROBUST AUTHORIZATION LEVELS.—The balanced science program authorized by section 101(d) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(d)) shall be an element of the contribution by the Administration to the interagency programs.

(d) ANNUAL REPORT.—

(1) REQUIREMENT.—The Administrator shall submit to Congress and the President an annual report describing the activities conducted pursuant to this section, including a description of the goals and the objective metrics upon which funding decisions were made.

(2) CONTENT.—Each report submitted pursuant to paragraph (1) shall include, with regard to science, technology,

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engineering, and mathematics education programs, at a minimum, the following:

- (A) A description of each program.
- (B) The amount spent on each program.
- (C) The number of students or teachers served by each program.

**§ 20304. Basic research enhancement**

(a) **DEFINITION OF BASIC RESEARCH.**—In this section, the term “basic research” has the meaning given the term in Office of Management and Budget Circular No. A-11.

(b) **COORDINATION.**—The Administrator, the Director of the National Science Foundation, the Secretary of Energy, the Secretary of Defense, and the Secretary of Commerce shall, to the extent practicable, coordinate basic research activities related to physical sciences, technology, engineering, and mathematics.

**§ 20305. National Academies decadal surveys**

(a) **IN GENERAL.**—The Administrator shall enter into agreements on a periodic basis with the National Academies for independent assessments, also known as decadal surveys, to take stock of the status and opportunities for Earth and space science discipline fields and Aeronautics research and to recommend priorities for research and programmatic areas over the next decade.

(b) **INDEPENDENT COST ESTIMATES.**—The agreements described in subsection (a) shall include independent estimates of the life cycle costs and technical readiness of missions assessed in the decadal surveys whenever possible.

(c) **REEXAMINATION.**—The Administrator shall request that each National Academies decadal survey committee identify any conditions or events, such as significant cost growth or scientific or technological advances, that would warrant the Administration asking the National Academies to reexamine the priorities that the decadal survey had established.

## Subtitle III—Administrative Provisions

### CHAPTER 301—APPROPRIATIONS, BUDGETS, AND ACCOUNTING

Sec.

- 30101. Prior authorization of appropriations required.
- 30102. Working capital fund.
- 30103. Budgets.
- 30104. Baselines and cost controls.

**§ 30101. Prior authorization of appropriations required**

Notwithstanding the provisions of any other law, no appropriation may be made to the Administration unless previously authorized by legislation enacted by Congress.

**§ 30102. Working capital fund**

(a) **ESTABLISHMENT.**—There is hereby established in the United States Treasury an Administration working capital fund.

(b) **AVAILABILITY OF AMOUNTS.**—

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(1) IN GENERAL.—Amounts in the fund are available for financing activities, services, equipment, information, and facilities as authorized by law to be provided—

- (A) within the Administration;
- (B) to other agencies or instrumentalities of the United States;
- (C) to any State, territory, or possession or political subdivision thereof;
- (D) to other public or private agencies; or
- (E) to any person, firm, association, corporation, or educational institution on a reimbursable basis.

(2) CAPITAL REPAIRS.—The fund shall also be available for the purpose of funding capital repairs, renovations, rehabilitation, sustainment, demolition, or replacement of Administration real property, on a reimbursable basis within the Administration.

(3) NO FISCAL YEAR LIMITATION.—Amounts in the fund are available without regard to fiscal year limitation.

(c) CONTENTS.—The capital of the fund consists of—

- (1) amounts appropriated to the fund;
- (2) the reasonable value of stocks of supplies, equipment, and other assets and inventories on order that the Administrator transfers to the fund, less the related liabilities and unpaid obligations; and
- (3) payments received for loss or damage to property of the fund.

(d) REIMBURSEMENT.—The fund shall be reimbursed, in advance, for supplies and services at rates that will approximate the expenses of operation, such as the accrual of annual leave, depreciation of plant, property, and equipment, and overhead.

### § 30103. Budgets

(a) CATEGORIES.—The proposed budget for the Administration submitted by the President for each fiscal year shall be accompanied by documents showing—

- (1) by program—
  - (A) the budget for space operations, including the International Space Station and the space shuttle;
  - (B) the budget for exploration systems;
  - (C) the budget for aeronautics;
  - (D) the budget for space science;
  - (E) the budget for Earth science;
  - (F) the budget for microgravity science;
  - (G) the budget for education;
  - (H) the budget for safety oversight; and
  - (I) the budget for public relations;
- (2) the budget for technology transfer programs;
- (3) the budget for the Integrated Enterprise Management Program, by individual element;
- (4) the budget for the Independent Technical Authority, both total and by center;
- (5) the total budget for the prize program under section 20144 of this title, and the administrative budget for that program; and
- (6) the comparable figures for at least the 2 previous fiscal years for each item in the proposed budget.

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(b) **ADDITIONAL BUDGET INFORMATION UPON REQUEST BY COMMITTEES.**—The Administration shall make available, upon request from the Committee on Science and Technology of the House of Representatives or the Committee on Commerce, Science, and Transportation of the Senate—

(1) information on corporate and center general and administrative costs and service pool costs, including—

(A) the total amount of funds being allocated for those purposes for any fiscal year for which the President has submitted an annual budget request to Congress;

(B) the amount of funds being allocated for those purposes for each center, for headquarters, and for each directorate; and

(C) the major activities included in each cost category; and

(2) the figures on the amount of unobligated funds and unexpended funds, by appropriations account—

(A) that remained at the end of the fiscal year prior to the fiscal year in which the budget is being presented that were carried over into the fiscal year in which the budget is being presented;

(B) that are estimated will remain at the end of the fiscal year in which the budget is being presented that are proposed to be carried over into the fiscal year for which the budget is being presented; and

(C) that are estimated will remain at the end of the fiscal year for which the budget is being presented.

(c) **INFORMATION IN ANNUAL BUDGET JUSTIFICATION.**—The Administration shall provide, at a minimum, the following information in its annual budget justification:

(1) The actual, current, proposed funding level, and estimated budgets for the next 5 fiscal years by directorate, theme, program, project and activity within each appropriations account.

(2) The proposed programmatic and non-programmatic construction of facilities.

(3) The budget for headquarters including—

(A) the budget by office, and any division thereof, for the actual, current, proposed funding level, and estimated budgets for the next 5 fiscal years;

(B) the travel budget for each office, and any division thereof, for the actual, current, and proposed funding level; and

(C) the civil service full time equivalent assignments per headquarters office, and any division thereof, including the number of Senior Executive Service, noncareer, detailee, and contract personnel per office.

(4) Within 14 days of the submission of the budget to Congress an accompanying volume shall be provided to the Committees on Appropriations containing the following information for each center, facility managed by any center, and federally funded research and development center operated on behalf of the Administration:

(A) The actual, current, proposed funding level, and estimated budgets for the next 5 fiscal years by directorate, theme, program, project, and activity.

(B) The proposed programmatic and non-programmatic construction of facilities.

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(C) The number of civil service full time equivalent positions per center for each identified fiscal year.

(D) The number of civil service full time equivalent positions considered to be uncovered capacity at each location for each identified fiscal year.

(5) The proposed budget as designated by object class for each directorate, theme, and program.

(6) Sufficient narrative shall be provided to explain the request for each program, project, and activity, and an explanation for any deviation to previously adopted baselines for all justification materials provided to the Committees.

(d) ESTIMATE OF GROSS RECEIPTS AND PROPOSED USE OF FUNDS RELATED TO LEASE OF PROPERTY.—Each annual budget request shall include an annual estimate of gross receipts and collections and proposed use of all funds collected pursuant to section 20145 of this title.

#### § 30104. Baselines and cost controls

(a) DEFINITIONS.—In this section:

(1) DEVELOPMENT.—The term “development” means the phase of a program following the formulation phase and beginning with the approval to proceed to implementation, as defined in the Administration’s Procedural Requirements 7120.5c, dated March 22, 2005.

(2) DEVELOPMENT COST.—The term “development cost” means the total of all costs, including construction of facilities and civil servant costs, from the period beginning with the approval to proceed to implementation through the achievement of operational readiness, without regard to funding source or management control, for the life of the program.

(3) LIFE-CYCLE COST.—The term “life-cycle cost” means the total of the direct, indirect, recurring, and nonrecurring costs, including the construction of facilities and civil servant costs, and other related expenses incurred or estimated to be incurred in the design, development, verification, production, operation, maintenance, support, and retirement of a program over its planned lifespan, without regard to funding source or management control.

(4) MAJOR PROGRAM.—The term “major program” means an activity approved to proceed to implementation that has an estimated life-cycle cost of more than \$250,000,000.

(b) CONDITIONS FOR DEVELOPMENT.—

(1) IN GENERAL.—The Administration shall not enter into a contract for the development of a major program unless the Administrator determines that—

(A) the technical, cost, and schedule risks of the program are clearly identified and the program has developed a plan to manage those risks;

(B) the technologies required for the program have been demonstrated in a relevant laboratory or test environment; and

(C) the program complies with all relevant policies, regulations, and directives of the Administration.

(2) REPORT.—The Administrator shall transmit a report describing the basis for the determination required under paragraph (1) to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce,

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Science, and Transportation of the Senate at least 30 days before entering into a contract for development under a major program.

(3) NONDELEGATION.—The Administrator may not delegate the determination requirement under this subsection, except in cases in which the Administrator has a conflict of interest.

(c) MAJOR PROGRAM ANNUAL REPORTS.—

(1) REQUIREMENT.—Annually, at the same time as the President's annual budget submission to Congress, the Administrator shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report that includes the information required by this section for each major program for which the Administration proposes to expend funds in the subsequent fiscal year. Reports under this paragraph shall be known as Major Program Annual Reports.

(2) BASELINE REPORT.—The first Major Program Annual Report for each major program shall include a Baseline Report that shall, at a minimum, include—

(A) the purposes of the program and key technical characteristics necessary to fulfill those purposes;

(B) an estimate of the life-cycle cost for the program, with a detailed breakout of the development cost, program reserves, and an estimate of the annual costs until development is completed;

(C) the schedule for development, including key program milestones;

(D) the plan for mitigating technical, cost, and schedule risks identified in accordance with subsection (b)(1)(A); and

(E) the name of the person responsible for making notifications under subsection (d), who shall be an individual whose primary responsibility is overseeing the program.

(3) INFORMATION UPDATES.—For major programs for which a Baseline Report has been submitted, each subsequent Major Program Annual Report shall describe any changes to the information that had been provided in the Baseline Report, and the reasons for those changes.

(d) NOTIFICATION.—

(1) REQUIREMENT.—The individual identified under subsection (c)(2)(E) shall immediately notify the Administrator any time that individual has reasonable cause to believe that, for the major program for which he or she is responsible—

(A) the development cost of the program is likely to exceed the estimate provided in the Baseline Report of the program by 15 percent or more; or

(B) a milestone of the program is likely to be delayed by 6 months or more from the date provided for it in the Baseline Report of the program.

(2) REASONS.—Not later than 30 days after the notification required under paragraph (1), the individual identified under subsection (c)(2)(E) shall transmit to the Administrator a written notification explaining the reasons for the change in the cost or milestone of the program for which notification was provided under paragraph (1).

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(3) NOTIFICATION OF CONGRESS.—Not later than 15 days after the Administrator receives a written notification under paragraph (2), the Administrator shall transmit the notification to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(e) FIFTEEN PERCENT THRESHOLD.—

(1) DETERMINATION, REPORT, AND INITIATION OF ANALYSIS.—Not later than 30 days after receiving a written notification under subsection (d)(2), the Administrator shall determine whether the development cost of the program is likely to exceed the estimate provided in the Baseline Report of the program by 15 percent or more, or whether a milestone is likely to be delayed by 6 months or more. If the determination is affirmative, the Administrator shall—

(A) transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, not later than 15 days after making the determination, a report that includes—

(i) a description of the increase in cost or delay in schedule and a detailed explanation for the increase or delay;

(ii) a description of actions taken or proposed to be taken in response to the cost increase or delay; and

(iii) a description of any impacts the cost increase or schedule delay, or the actions described under clause (ii), will have on any other program within the Administration; and

(B) if the Administrator intends to continue with the program, promptly initiate an analysis of the program, which shall include, at a minimum—

(i) the projected cost and schedule for completing the program if current requirements of the program are not modified;

(ii) the projected cost and the schedule for completing the program after instituting the actions described under subparagraph (A)(ii); and

(iii) a description of, and the projected cost and schedule for, a broad range of alternatives to the program.

(2) COMPLETION OF ANALYSIS AND TRANSMITTAL TO COMMITTEES.—The Administration shall complete an analysis initiated under paragraph (1)(B) not later than 6 months after the Administrator makes a determination under this subsection. The Administrator shall transmit the analysis to the Committee on Science and Technology of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate not later than 30 days after its completion.

(f) THIRTY PERCENT THRESHOLD.—If the Administrator determines under subsection (e) that the development cost of a program will exceed the estimate provided in the Baseline Report of the program by more than 30 percent, then, beginning 18 months after the date the Administrator transmits a report under subsection (e)(1)(A), the Administrator shall not expend any additional funds on the program, other than termination costs, unless Congress

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has subsequently authorized continuation of the program by law. An appropriation for the specific program enacted subsequent to a report being transmitted shall be considered an authorization for purposes of this subsection. If the program is continued, the Administrator shall submit a new Baseline Report for the program no later than 90 days after the date of enactment of the Act under which Congress has authorized continuation of the program.

### CHAPTER 303—CONTRACTING AND PROCUREMENT

Sec.

- 30301. Guaranteed customer base.
- 30302. Quality assurance personnel.
- 30303. Tracking and data relay satellite services.
- 30304. Award of contracts to small businesses and disadvantaged individuals.
- 30305. Outreach program.
- 30306. Small business contracting.
- 30307. Requirement for independent cost analysis.
- 30308. Cost effectiveness calculations.
- 30309. Use of abandoned and underutilized buildings, grounds, and facilities.
- 30310. Exception to alternative fuel procurement requirement.

#### § 30301. Guaranteed customer base

No amount appropriated to the Administration may be used to fund grants, contracts, or other agreements with an expected duration of more than one year, when a primary effect of the grant, contract, or agreement is to provide a guaranteed customer base for or establish an anchor tenancy in new commercial space hardware or services unless an appropriations Act specifies the new commercial space hardware or services to be developed or used, or the grant, contract, or agreement is otherwise identified in such Act.

#### § 30302. Quality assurance personnel

(a) EXCLUSION OF ADMINISTRATION PERSONNEL.—A person providing articles to the Administration under a contract entered into after December 9, 1991, may not exclude Administration quality assurance personnel from work sites except as provided in a contract provision that has been submitted to Congress as provided in subsection (b).

(b) CONTRACT PROVISIONS.—The Administration shall not enter into any contract which permits the exclusion of Administration quality assurance personnel from work sites unless the Administrator has submitted a copy of the provision permitting such exclusion to Congress at least 60 days before entering into the contract.

#### § 30303. Tracking and data relay satellite services

(a) CONTRACTS.—The Administration is authorized, when so provided in an appropriation Act, to enter into and to maintain a contract for tracking and data relay satellite services. Such services shall be furnished to the Administration in accordance with applicable authorization and appropriations Acts. The Government shall incur no costs under such contract prior to the furnishing of such services except that the contract may provide for the payment for contingent liability of the Government which may accrue in the event the Government should decide for its convenience to terminate the contract before the end of the period of the contract. Facilities which may be required in the performance of the contract may be constructed on Government-owned lands if there is included

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in the contract a provision under which the Government may acquire title to the facilities, under terms and conditions agreed upon in the contract, upon termination of the contract.

(b) **REPORTS TO CONGRESS.**—The Administrator shall in January of each year report to the Committee on Science and Technology and the Committee on Appropriations of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Appropriations of the Senate the projected aggregate contingent liability of the Government under termination provisions of any contract authorized in this section through the next fiscal year. The authority of the Administration to enter into and to maintain the contract authorized hereunder shall remain in effect unless repealed by legislation enacted by Congress.

**§ 30304. Award of contracts to small businesses and disadvantaged individuals**

The Administrator shall annually establish a goal of at least 8 percent of the total value of prime and subcontracts awarded in support of authorized programs, including the space station by the time operational status is obtained, which funds will be made available to small business concerns or other organizations owned or controlled by socially and economically disadvantaged individuals (within the meaning of paragraphs (5) and (6) of section 8(a) of the Small Business Act (15 U.S.C. 637(a))), including Historically Black Colleges and Universities that are part B institutions (as defined in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2))), Hispanic-serving institutions (as defined in section 502(a)(5) of that Act (20 U.S.C. 1101a(a)(5))), Tribal Colleges or Universities (as defined in section 316(b)(3) of that Act (20 U.S.C. 1059c(b)(3))), Alaska Native-serving institutions (as defined in section 317(b)(2) of that Act (20 U.S.C. 1059d(b)(2))), Native Hawaiian-serving institutions (as defined in section 317(b)(4) of that Act (20 U.S.C. 1059d(b)(4))), and minority educational institutions (as defined by the Secretary of Education pursuant to the General Education Provisions Act (20 U.S.C. 1221 et seq.)).

**§ 30305. Outreach program**

(a) **ESTABLISHMENT.**—The Administration shall competitively select an organization to partner with Administration centers, aerospace contractors, and academic institutions to carry out a program to help promote the competitiveness of small, minority-owned, and women-owned businesses in communities across the United States through enhanced insight into the technologies of the Administration's space and aeronautics programs. The program shall support the mission of the Administration's Innovative Partnerships Program with its emphasis on joint partnerships with industry, academia, government agencies, and national laboratories.

(b) **PROGRAM STRUCTURE.**—In carrying out the program described in subsection (a), the organization shall support the mission of the Administration's Innovative Partnerships Program by undertaking the following activities:

(1) **FACILITATING ENHANCED INSIGHT.**—Facilitating the enhanced insight of the private sector into the Administration's technologies in order to increase the competitiveness of the private sector in producing viable commercial products.

(2) **CREATING NETWORK.**—Creating a network of academic institutions, aerospace contractors, and Administration centers

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that will commit to donating appropriate technical assistance to small businesses, giving preference to socially and economically disadvantaged small business concerns, small business concerns owned and controlled by service-disabled veterans, and HUBZone small business concerns. This paragraph shall not apply to any contracting actions entered into or taken by the Administration.

(3) CREATING NETWORK OF ECONOMIC DEVELOPMENT ORGANIZATIONS.—Creating a network of economic development organizations to increase the awareness and enhance the effectiveness of the program nationwide.

(c) REPORT.—Not later than one year after October 15, 2008, and annually thereafter, the Administrator shall submit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the efforts and accomplishments of the program established under subsection (a) in support of the Administration's Innovative Partnerships Program. As part of the report, the Administrator shall provide—

(1) data on the number of small businesses receiving assistance, jobs created and retained, and volunteer hours donated by the Administration, contractors, and academic institutions nationwide;

(2) an estimate of the total dollar value of the economic impact made by small businesses that received technical assistance through the program; and

(3) an accounting of the use of funds appropriated for the program.

#### **§ 30306. Small business contracting**

(a) PLAN.—In consultation with the Small Business Administration, the Administrator shall develop a plan to maximize the number and amount of contracts awarded to small business concerns (within the meaning given that term in section 3 of the Small Business Act (15 U.S.C. 632)) and to meet established contracting goals for such concerns.

(b) PRIORITY.—The Administrator shall establish as a priority meeting the contracting goals developed in conjunction with the Small Business Administration to maximize the amount of prime contracts, as measured in dollars, awarded in each fiscal year by the Administration to small business concerns (within the meaning given that term in section 3 of the Small Business Act (15 U.S.C. 632)).

#### **§ 30307. Requirement for independent cost analysis**

(a) DEFINITION OF IMPLEMENTATION.—In this section, the term “implementation” means all activity in the life cycle of a project after preliminary design, independent assessment of the preliminary design, and approval to proceed into implementation, including critical design, development, certification, launch, operations, disposal of assets, and, for technology programs, development, testing, analysis, and communication of the results.

(b) REQUIREMENT.—Before any funds may be obligated for implementation of a project that is projected to cost more than \$250,000,000 in total project costs, the Administrator shall conduct and consider an independent life-cycle cost analysis of the project and shall report the results to Congress. In developing cost

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accounting and reporting standards for carrying out this section, the Administrator shall, to the extent practicable and consistent with other laws, solicit the advice of experts outside of the Administration.

**§ 30308. Cost effectiveness calculations**

(a) DEFINITIONS.—In this section:

(1) COMMERCIAL PROVIDER.—The term “commercial provider” means any person providing space transportation services or other space-related activities, the primary control of which is held by persons other than a Federal, State, local, or foreign government.

(2) STATE.—The term “State” means each of the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.

(b) IN GENERAL.—Except as otherwise required by law, in calculating the cost effectiveness of the cost of the Administration engaging in an activity as compared to a commercial provider, the Administrator shall compare the cost of the Administration engaging in the activity using full cost accounting principles with the price the commercial provider will charge for such activity.

**§ 30309. Use of abandoned and underutilized buildings, grounds, and facilities**

(a) DEFINITION OF DEPRESSED COMMUNITIES.—In this section, the term “depressed communities” means rural and urban communities that are relatively depressed, in terms of age of housing, extent of poverty, growth of per capita income, extent of unemployment, job lag, or surplus labor.

(b) IN GENERAL.—In any case in which the Administrator considers the purchase, lease, or expansion of a facility to meet requirements of the Administration, the Administrator shall consider whether those requirements could be met by the use of one of the following:

(1) Abandoned or underutilized buildings, grounds, and facilities in depressed communities that can be converted to Administration usage at a reasonable cost, as determined by the Administrator.

(2) Any military installation that is closed or being closed, or any facility at such an installation.

(3) Any other facility or part of a facility that the Administrator determines to be—

(A) owned or leased by the United States for the use of another agency of the Federal Government; and

(B) considered by the head of the agency involved to be—

(i) excess to the needs of that agency; or

(ii) underutilized by that agency.

**§ 30310. Exception to alternative fuel procurement requirement**

Section 526(a) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17142(a)) does not prohibit the Administration from entering into a contract to purchase a generally available

fuel that is not an alternative or synthetic fuel or predominantly produced from a nonconventional petroleum source, if—

(1) the contract does not specifically require the contractor to provide an alternative or synthetic fuel or fuel from a nonconventional petroleum source;

(2) the purpose of the contract is not to obtain an alternative or synthetic fuel or fuel from a nonconventional petroleum source; and

(3) the contract does not provide incentives for a refinery upgrade or expansion to allow a refinery to use or increase its use of fuel from a nonconventional petroleum source.

### CHAPTER 305—MANAGEMENT AND REVIEW

Sec.

30501. Lessons learned and best practices.

30502. Whistleblower protection.

30503. Performance assessments.

30504. Assessment of science mission extensions.

#### § 30501. Lessons learned and best practices

(a) **IN GENERAL.**—The Administrator shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate an implementation plan describing the Administration's approach for obtaining, implementing, and sharing lessons learned and best practices for its major programs and projects not later than 180 days after December 30, 2005. The implementation plan shall be updated and maintained to ensure that it is current and consistent with the burgeoning culture of learning and safety that is emerging at the Administration.

(b) **REQUIRED CONTENT.**—The implementation plan shall contain at a minimum the lessons learned and best practices requirements for the Administration, the organizations or positions responsible for enforcement of the requirements, the reporting structure, and the objective performance measures indicating the effectiveness of the activity.

(c) **INCENTIVES.**—The Administrator shall provide incentives to encourage sharing and implementation of lessons learned and best practices by employees, projects, and programs, as well as penalties for programs and projects that are determined not to have demonstrated use of those resources.

#### § 30502. Whistleblower protection

(a) **IN GENERAL.**—Not later than 1 year after December 30, 2005, the Administrator shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a plan describing steps to be taken by the Administration to protect from retaliation Administration employees who raise concerns about substantial and specific dangers to public health and safety or about substantial and specific factors that could threaten the success of a mission. The plan shall be designed to ensure that Administration employees have the full protection required by law. The Administrator shall implement the plan not more than 1 year after its transmittal.

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(b) **GOAL.**—The Administrator shall ensure that the plan describes a system that will protect employees who wish to raise or have raised concerns described in subsection (a).

(c) **PLAN.**—At a minimum, the plan shall include, consistent with Federal law—

(1) a reporting structure that ensures that the officials who are the subject of a whistleblower's complaint will not learn the identity of the whistleblower;

(2) a single point to which all complaints can be made without fear of retribution;

(3) procedures to enable the whistleblower to track the status of the case;

(4) activities to educate employees about their rights as whistleblowers and how they are protected by law;

(5) activities to educate employees about their obligations to report concerns and their accountability before and after receiving the results of the investigations into their concerns; and

(6) activities to educate all appropriate Administration Human Resources professionals, and all Administration managers and supervisors, regarding personnel laws, rules, and regulations.

(d) **REPORT.**—Not later than February 15 of each year beginning February 15, 2007, the Administrator shall transmit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the concerns described in subsection (a) that were raised during the previous fiscal year. At a minimum, the report shall provide—

(1) the number of concerns that were raised, divided into the categories of safety and health, mission assurance, and mismanagement, and the disposition of those concerns, including whether any employee was disciplined as a result of a concern having been raised; and

(2) any recommendations for reforms to further prevent retribution against employees who raise concerns.

### § 30503. Performance assessments

(a) **IN GENERAL.**—The performance of each division in the Science directorate of the Administration shall be reviewed and assessed by the National Academy of Sciences at 5-year intervals.

(b) **TIMING.**—Beginning with the first fiscal year following December 30, 2005, the Administrator shall select at least one division for review under this section. The Administrator shall select divisions so that all disciplines will have received their first review within 6 fiscal years of December 30, 2005.

(c) **REPORTS.**—Not later than March 1 of each year, beginning with the first fiscal year after December 30, 2005, the Administrator shall transmit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate—

(1) setting forth in detail the results of any external review under subsection (a);

(2) setting forth in detail actions taken by the Administration in response to any external review; and

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(3) including a summary of findings and recommendations from any other relevant external reviews of the Administration's science mission priorities and programs.

**§ 30504. Assessment of science mission extensions**

(a) ASSESSMENT.—The Administrator shall carry out biennial reviews within each of the Science divisions to assess the cost and benefits of extending the date of the termination of data collection for those missions that have exceeded their planned mission lifetime.

(b) CONSULTATION AND CONSIDERATION OF POTENTIAL BENEFITS OF INSTRUMENTS ON MISSIONS.—For those missions that have an operational component, the National Oceanic and Atmospheric Administration or any other affected agency shall be consulted and the potential benefits of instruments on missions that are beyond their planned mission lifetime taken into account.

**CHAPTER 307—INTERNATIONAL COOPERATION AND COMPETITION**

Sec.

30701. Competitiveness and international cooperation.

30702. Foreign contract limitation.

30703. Foreign launch vehicles.

30704. Offshore performance of contracts for the procurement of goods and services.

**§ 30701. Competitiveness and international cooperation**

(a) LIMITATION.—

(1) SOLICITATION OF COMMENT.—As part of the evaluation of the costs and benefits of entering into an obligation to conduct a space mission in which a foreign entity will participate as a supplier of the spacecraft, spacecraft system, or launch system, the Administrator shall solicit comment on the potential impact of such participation through notice published in Commerce Business Daily at least 45 days before entering into such an obligation.

(2) AGREEMENTS WITH PEOPLE'S REPUBLIC OF CHINA.—The Administrator shall certify to Congress at least 15 days in advance of any cooperative agreement with the People's Republic of China, or any company owned by the People's Republic of China or incorporated under the laws of the People's Republic of China, involving spacecraft, spacecraft systems, launch systems, or scientific or technical information, that—

(A) the agreement is not detrimental to the United States space launch industry; and

(B) the agreement, including any indirect technical benefit that could be derived from the agreement, will not improve the missile or space launch capabilities of the People's Republic of China.

(3) ANNUAL AUDIT.—The Inspector General of the Administration, in consultation with appropriate agencies, shall conduct an annual audit of the policies and procedures of the Administration with respect to the export of technologies and the transfer of scientific and technical information, to assess the extent to which the Administration is carrying out its activities in compliance with Federal export control laws and with paragraph (2).

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## (b) NATIONAL INTERESTS.—

## (1) DEFINITION OF UNITED STATES COMMERCIAL PROVIDER.—

In this subsection, the term “United States commercial provider” means a commercial provider (as defined in section 30308(a) of this title), organized under the laws of the United States or of a State (as defined in section 30308(a) of this title), which is—

(A) more than 50 percent owned by United States nationals; or

(B) a subsidiary of a foreign company and the Secretary of Commerce finds that—

(i) such subsidiary has in the past evidenced a substantial commitment to the United States market through—

(I) investments in the United States in long-term research, development, and manufacturing (including the manufacture of major components and subassemblies); and

(II) significant contributions to employment in the United States; and

(ii) the country or countries in which such foreign company is incorporated or organized, and, if appropriate, in which it principally conducts its business, affords reciprocal treatment to companies described in subparagraph (A) comparable to that afforded to such foreign company’s subsidiary in the United States, as evidenced by—

(I) providing comparable opportunities for companies described in subparagraph (A) to participate in Government sponsored research and development similar to that authorized under this section, section 30307, 30308, 30309, or 30702 of this title, or the National Aeronautics and Space Administration Authorization Act of 2000 (Public Law 106-391, 114 Stat. 1577);

(II) providing no barriers to companies described in subparagraph (A) with respect to local investment opportunities that are not provided to foreign companies in the United States; and

(III) providing adequate and effective protection for the intellectual property rights of companies described in subparagraph (A).

(2) IN GENERAL.—Before entering into an obligation described in subsection (a), the Administrator shall consider the national interests of the United States described in paragraph (3) of this subsection.

(3) DESCRIPTION OF NATIONAL INTERESTS.—International cooperation in space exploration and science activities most effectively serves the United States national interest when it—

(A)(i) reduces the cost of undertaking missions the United States Government would pursue unilaterally;

(ii) enables the United States to pursue missions that it could not otherwise afford to pursue unilaterally; or

(iii) enhances United States capabilities to use and develop space for the benefit of United States citizens;

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(B) is undertaken in a manner that is sensitive to the desire of United States commercial providers to develop or explore space commercially;

(C) is consistent with the need for Federal agencies to use space to complete their missions; and

(D) is carried out in a manner consistent with United States export control laws.

#### **§ 30702. Foreign contract limitation**

The Administration shall not enter into any agreement or contract with a foreign government that grants the foreign government the right to recover profit in the event that the agreement or contract is terminated.

#### **§ 30703. Foreign launch vehicles**

(a) ACCORD WITH SPACE TRANSPORTATION POLICY.—The Administration shall not launch a payload on a foreign launch vehicle except in accordance with the Space Transportation Policy announced by the President on December 21, 2004. This subsection shall not be construed to prevent the President from waiving the Space Transportation Policy.

(b) INTERAGENCY COORDINATION.—The Administration shall not launch a payload on a foreign launch vehicle unless the Administration commenced the interagency coordination required by the Space Transportation Policy announced by the President on December 21, 2004, at least 90 days before entering into a development contract for the payload.

(c) APPLICATION.—This section shall not apply to any payload for which development has begun prior to December 30, 2005, including the James Webb Space Telescope.

#### **§ 30704. Offshore performance of contracts for the procurement of goods and services**

The Administrator shall submit to Congress, not later than 120 days after the end of each fiscal year, a report on the contracts and subcontracts performed overseas and the amount of purchases directly or indirectly by the Administration from foreign entities in that fiscal year. The report shall separately indicate—

(1) the contracts and subcontracts and their dollar values for which the Administrator determines that essential goods or services under the contract are available only from a source outside the United States; and

(2) the items and their dollar values for which the Buy American Act (41 U.S.C. 10a et seq.) was waived pursuant to obligations of the United States under international agreements.

### **CHAPTER 309—AWARDS**

Sec.

30901. Congressional Space Medal of Honor.

30902. Charles “Pete” Conrad Astronomy Awards.

#### **§ 30901. Congressional Space Medal of Honor**

(a) AUTHORITY TO AWARD.—The President may award, and present in the name of Congress, a medal of appropriate design, which shall be known as the Congressional Space Medal of Honor,

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to any astronaut who in the performance of the astronaut's duties has distinguished himself or herself by exceptionally meritorious efforts and contributions to the welfare of the Nation and of humankind.

(b) APPROPRIATIONS.—There is authorized to be appropriated from time to time such sums of money as may be necessary to carry out the purposes of this section.

### § 30902. Charles “Pete” Conrad Astronomy Awards

(a) SHORT TITLE.—This section may be cited as the “Charles ‘Pete’ Conrad Astronomy Awards Act”.

(b) DEFINITIONS.—In this section:

(1) AMATEUR ASTRONOMER.—The term “amateur astronomer” means an individual whose employer does not provide any funding, payment, or compensation to the individual for the observation of asteroids and other celestial bodies, and does not include any individual employed as a professional astronomer.

(2) MINOR PLANET CENTER.—The term “Minor Planet Center” means the Minor Planet Center of the Smithsonian Astrophysical Observatory.

(3) NEAR-EARTH ASTEROID.—The term “near-Earth asteroid” means an asteroid with a perihelion distance of less than 1.3 Astronomical Units from the Sun.

(4) PROGRAM.—The term “Program” means the Charles “Pete” Conrad Astronomy Awards Program established under subsection (c).

(c) CHARLES “PETE” CONRAD ASTRONOMY AWARDS PROGRAM.—

(1) IN GENERAL.—The Administrator shall establish the Charles “Pete” Conrad Astronomy Awards Program.

(2) AWARDS.—The Administrator shall make awards under the Program based on the recommendations of the Minor Planet Center.

(3) AWARD CATEGORIES.—The Administrator shall make one annual award, unless there are no eligible discoveries or contributions, for each of the following categories:

(A) DISCOVERY OF BRIGHTEST NEAR-EARTH ASTEROID.—The amateur astronomer or group of amateur astronomers who in the preceding calendar year discovered the intrinsically brightest near-Earth asteroid among the near-Earth asteroids that were discovered during that year by amateur astronomers or groups of amateur astronomers.

(B) GREATEST CONTRIBUTION TO CATALOGUING NEAR-EARTH ASTEROIDS.—The amateur astronomer or group of amateur astronomers who made the greatest contribution to the Minor Planet Center's mission of cataloguing near-Earth asteroids during the preceding year.

(4) AWARD AMOUNT.—An award under the Program shall be in the amount of \$3,000.

(5) GUIDELINES.—

(A) CITIZEN OR PERMANENT RESIDENT.—No individual who is not a citizen or permanent resident of the United States at the time of the individual's discovery or contribution may receive an award under this section.

(B) FINALITY.—The decisions of the Administrator in making awards under this section are final.

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**CHAPTER 311—SAFETY**

Sec.

31101. Aerospace Safety Advisory Panel.

31102. Drug and alcohol testing.

**§ 31101. Aerospace Safety Advisory Panel**

(a) **ESTABLISHMENT AND MEMBERS.**—There is established an Aerospace Safety Advisory Panel consisting of a maximum of 9 members who shall be appointed by the Administrator for terms of 6 years each. Not more than 4 such members shall be chosen from among the officers and employees of the Administration.

(b) **CHAIRMAN.**—One member shall be designated by the Panel as its Chairman.

(c) **DUTIES.**—The Panel shall—

(1) review safety studies and operations plans referred to it, including evaluating the Administration's compliance with the return-to-flight and continue-to-fly recommendations of the Columbia Accident Investigation Board, and make reports thereon;

(2) advise the Administrator and Congress with respect to—  
(A) the hazards of proposed or existing facilities and proposed operations;

(B) the adequacy of proposed or existing safety standards;  
and

(C) management and culture related to safety; and

(3) perform such other duties as the Administrator may request.

(d) **COMPENSATION AND EXPENSES.**—

(1) **COMPENSATION.**—

(A) **FEDERAL OFFICERS AND EMPLOYEES.**—A member of the Panel who is an officer or employee of the Federal Government shall receive no compensation for the member's services as such.

(B) **MEMBERS APPOINTED FROM OUTSIDE THE FEDERAL GOVERNMENT.**—A member of the Panel appointed from outside the Federal Government shall receive compensation, at a rate not to exceed the per diem rate equivalent to the maximum rate payable under section 5376 of title 5, for each day the member is engaged in the actual performance of duties vested in the Panel.

(2) **EXPENSES.**—A member of the Panel shall be allowed necessary travel expenses (or in the alternative, mileage for use of a privately owned vehicle and a per diem in lieu of subsistence not to exceed the rate and amount prescribed in sections 5702 and 5704 of title 5), and other necessary expenses incurred by the member in the performance of duties vested in the Panel, without regard to the provisions of subchapter I of chapter 57 of title 5, the Standardized Government Travel Regulations, or section 5731 of title 5.

(e) **ANNUAL REPORT.**—The Panel shall submit an annual report to the Administrator and to Congress. In the first annual report submitted after December 30, 2005, the Panel shall include an evaluation of the Administration's management and culture related to safety. Each annual report shall include an evaluation of the Administration's compliance with the recommendations of the Columbia Accident Investigation Board through retirement of the space shuttle.

**§ 31102. Drug and alcohol testing**

(a) **DEFINITION OF CONTROLLED SUBSTANCE.**—In this section, the term “controlled substance” means any substance under section 102(6) of the Controlled Substances Act (21 U.S.C. 802(6)) specified by the Administrator.

(b) **TESTING PROGRAM.**—

(1) **EMPLOYEES OF ADMINISTRATION.**—The Administrator shall establish a program applicable to employees of the Administration whose duties include responsibility for safety-sensitive, security, or national security functions. Such program shall provide for preemployment, reasonable suspicion, random, and post-accident testing for use, in violation of applicable law or Federal regulation, of alcohol or a controlled substance. The Administrator may also prescribe regulations, as the Administrator considers appropriate in the interest of safety, security, and national security, for the conduct of periodic recurring testing of such employees for such use in violation of applicable law or Federal regulation.

(2) **EMPLOYEES OF CONTRACTORS.**—The Administrator shall, in the interest of safety, security, and national security, prescribe regulations. Such regulations shall establish a program that requires Administration contractors to conduct preemployment, reasonable suspicion, random, and post-accident testing of contractor employees responsible for safety-sensitive, security, or national security functions (as determined by the Administrator) for use, in violation of applicable law or Federal regulation, of alcohol or a controlled substance. The Administrator may also prescribe regulations, as the Administrator considers appropriate in the interest of safety, security, and national security, for the conduct of periodic recurring testing of such employees for such use in violation of applicable law or Federal regulation.

(3) **SUSPENSION, DISQUALIFICATION, OR DISMISSAL.**—In prescribing regulations under the programs required by this subsection, the Administrator shall require, as the Administrator considers appropriate, the suspension, disqualification, or dismissal of any employee to which paragraph (1) or (2) applies, in accordance with the provisions of this section, in any instance where a test conducted and confirmed under this section indicates that such employee has used, in violation of applicable law or Federal regulation, alcohol or a controlled substance.

(c) **PROHIBITION ON SERVICE.**—

(1) **PROHIBITION UNLESS PROGRAM OF REHABILITATION COMPLETED.**—No individual who is determined by the Administrator under this section to have used, in violation of applicable law or Federal regulation, alcohol or a controlled substance after December 9, 1991, shall serve as an Administration employee with responsibility for safety-sensitive, security, or national security functions (as determined by the Administrator), or as an Administration contractor employee with such responsibility, unless such individual has completed a program of rehabilitation described in subsection (d).

(2) **UNCONDITIONAL PROHIBITION.**—Any such individual determined by the Administrator under this section to have used, in violation of applicable law or Federal regulation, alcohol or a controlled substance after December 9, 1991, shall not

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be permitted to perform the duties that the individual performed prior to the date of the determination, if the individual—

- (A) engaged in such use while on duty;
- (B) prior to such use had undertaken or completed a rehabilitation program described in subsection (d);
- (C) following such determination refuses to undertake such a rehabilitation program; or
- (D) following such determination fails to complete such a rehabilitation program.

(d) PROGRAM FOR REHABILITATION.—

(1) REGULATIONS AND AVAILABILITY OF PROGRAM FOR CONTRACTOR EMPLOYEES.—The Administrator shall prescribe regulations setting forth requirements for rehabilitation programs which at a minimum provide for the identification and opportunity for treatment of employees referred to in subsection (b) in need of assistance in resolving problems with the use, in violation of applicable law or Federal regulation, of alcohol or a controlled substance. Each contractor is encouraged to make such a program available to all of its employees in addition to those employees referred to in subsection (b)(2). The Administrator shall determine the circumstances under which such employees shall be required to participate in such a program. Nothing in this subsection shall preclude any Administration contractor from establishing a program under this subsection in cooperation with any other such contractor.

(2) ESTABLISHMENT AND MAINTENANCE OF PROGRAM FOR ADMINISTRATION EMPLOYEES.—The Administrator shall establish and maintain a rehabilitation program which at a minimum provides for the identification and opportunity for treatment of those employees of the Administration whose duties include responsibility for safety-sensitive, security, or national security functions who are in need of assistance in resolving problems with the use of alcohol or controlled substances.

(e) PROCEDURES FOR TESTING.—In establishing the programs required under subsection (b), the Administrator shall develop requirements which shall—

(1) promote, to the maximum extent practicable, individual privacy in the collection of specimen samples;

(2) with respect to laboratories and testing procedures for controlled substances, incorporate the Department of Health and Human Services scientific and technical guidelines dated April 11, 1988, and any subsequent amendments thereto, including mandatory guidelines which—

(A) establish comprehensive standards for all aspects of laboratory controlled substances testing and laboratory procedures to be applied in carrying out this section, including standards which require the use of the best available technology for ensuring the full reliability and accuracy of controlled substances tests and strict procedures governing the chain of custody of specimen samples collected for controlled substances testing;

(B) establish the minimum list of controlled substances for which individuals may be tested; and

(C) establish appropriate standards and procedures for periodic review of laboratories and criteria for certification and revocation of certification of laboratories to perform controlled substances testing in carrying out this section;

(3) require that all laboratories involved in the controlled substances testing of any individual under this section shall have the capability and facility, at such laboratory, of performing screening and confirmation tests;

(4) provide that all tests which indicate the use, in violation of applicable law or Federal regulation, of alcohol or a controlled substance by any individual shall be confirmed by a scientifically recognized method of testing capable of providing quantitative data regarding alcohol or a controlled substance;

(5) provide that each specimen sample be subdivided, secured, and labelled in the presence of the tested individual and that a portion thereof be retained in a secure manner to prevent the possibility of tampering, so that in the event the individual's confirmation test results are positive the individual has an opportunity to have the retained portion assayed by a confirmation test done independently at a second certified laboratory if the individual requests the independent test within 3 days after being advised of the results of the initial confirmation test;

(6) ensure appropriate safeguards for testing to detect and quantify alcohol in breath and body fluid samples, including urine and blood, through the development of regulations as may be necessary and in consultation with the Department of Health and Human Services;

(7) provide for the confidentiality of test results and medical information of employees; and

(8) ensure that employees are selected for tests by nondiscriminatory and impartial methods, so that no employee is harassed by being treated differently from other employees in similar circumstances.

(f) EFFECT ON OTHER LAWS AND REGULATIONS.—

(1) CONSISTENCY WITH FEDERAL REGULATION.—No State or local government shall adopt or have in effect any law, rule, regulation, ordinance, standard, or order that is inconsistent with the regulations promulgated under this section.

(2) CONTINUANCE OF REGULATIONS ISSUED BEFORE DECEMBER 9, 1991.—Nothing in this section shall be construed to restrict the discretion of the Administrator to continue in force, amend, or further supplement any regulations issued before December 9, 1991, that govern the use of alcohol and controlled substances by Administration employees with responsibility for safety-sensitive, security, and national security functions (as determined by the Administrator), or by Administration contractor employees with such responsibility.

## CHAPTER 313—HEALTHCARE

Sec.

31301. Healthcare program.

31302. Astronaut healthcare survey.

### § 31301. Healthcare program

The Administrator shall develop a plan to better understand the longitudinal health effects of space flight on humans. In the development of the plan, the Administrator shall consider the need

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for the establishment of a lifetime healthcare program for Administration astronauts and their families or other methods to obtain needed health data from astronauts and retired astronauts.

**§ 31302. Astronaut healthcare survey**

(a) SURVEY.—The Administrator shall administer an anonymous survey of astronauts and flight surgeons to evaluate communication, relationships, and the effectiveness of policies. The survey questions and the analysis of results shall be evaluated by experts independent of the Administration. The survey shall be administered on at least a biennial basis.

(b) REPORT.—The Administrator shall transmit a report of the results of the survey to Congress not later than 90 days following completion of the survey.

**CHAPTER 315—MISCELLANEOUS**

Sec.

31501. Orbital debris.

31502. Maintenance of facilities.

31503. Laboratory productivity.

31504. Cooperative unmanned aerial vehicle activities.

31505. Development of enhanced-use lease policy.

**§ 31501. Orbital debris**

The Administrator, in conjunction with the heads of other Federal agencies, shall take steps to develop or acquire technologies that will enable the Administration to decrease the risks associated with orbital debris.

**§ 31502. Maintenance of facilities**

In order to sustain healthy Centers that are capable of carrying out the Administration's missions, the Administrator shall ensure that adequate maintenance and upgrading of those Center facilities is performed on a regular basis.

**§ 31503. Laboratory productivity**

The Administration's laboratories are a critical component of the Administration's research capabilities, and the Administrator shall ensure that those laboratories remain productive.

**§ 31504. Cooperative unmanned aerial vehicle activities**

The Administrator, in cooperation with the Administrator of the National Oceanic and Atmospheric Administration and in coordination with other agencies that have existing civil capabilities, shall continue to utilize the capabilities of unmanned aerial vehicles as appropriate in support of Administration and interagency cooperative missions. The Administrator may enter into cooperative agreements with universities with unmanned aerial vehicle programs and related assets to conduct collaborative research and development activities, including development of appropriate applications of small unmanned aerial vehicle technologies and systems in remote areas.

**§ 31505. Development of enhanced-use lease policy**

(a) IN GENERAL.—The Administrator shall develop an agency-wide enhanced-use lease policy that—

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(1) is based upon sound business practices and lessons learned from the demonstration centers; and

(2) establishes controls and procedures to ensure accountability and protect the interests of the Government.

(b) CONTENTS.—The policy required by subsection (a) shall include the following:

(1) CRITERIA FOR DETERMINING ECONOMIC VALUE.—Criteria for determining whether enhanced-use lease provides better economic value to the Government than other options, such as—

(A) Federal financing through appropriations; or

(B) sale of the property.

(2) SECURITY AND ACCESS.—Requirement for the identification of proposed physical and procedural changes needed to ensure security and restrict access to specified areas, coordination of proposed changes with existing site tenants, and development of estimated costs of such changes.

(3) MEASURES OF EFFECTIVENESS.—Measures of effectiveness for the enhanced-use lease program.

(4) ACCOUNTING CONTROLS.—Accounting controls and procedures to ensure accountability, such as an audit trail and documentation to readily support financial transactions.

## Subtitle IV—Aeronautics and Space Research and Education

### CHAPTER 401—AERONAUTICS

#### SUBCHAPTER I—GENERAL

Sec.

40101. Definition of institution of higher education.

40102. Governmental interest in aeronautics research and development.

40103. Cooperation with other agencies on aeronautics activities.

40104. Cooperation among Mission Directorates.

#### SUBCHAPTER II—HIGH PRIORITY AERONAUTICS RESEARCH AND DEVELOPMENT PROGRAMS

40111. Fundamental research program.

40112. Research and technology programs.

40113. Airspace systems research.

40114. Aviation safety and security research.

40115. Aviation weather research.

40116. University-based Centers for Research on Aviation Training.

#### SUBCHAPTER III—SCHOLARSHIPS

40131. Aeronautics scholarships.

#### SUBCHAPTER IV—DATA REQUESTS

40141. Aviation data requests.

#### SUBCHAPTER I—GENERAL

### § 40101. Definition of institution of higher education

In this chapter, the term “institution of higher education” has the meaning given the term by section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

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**§ 40102. Governmental interest in aeronautics research and development**

Congress reaffirms the national commitment to aeronautics research made in chapter 201 of this title. Aeronautics research and development remains a core mission of the Administration. The Administration is the lead agency for civil aeronautics research. Further, the government of the United States shall promote aeronautics research and development that will expand the capacity, ensure the safety, and increase the efficiency of the Nation's air transportation system, promote the security of the Nation, protect the environment, and retain the leadership of the United States in global aviation.

**§ 40103. Cooperation with other agencies on aeronautics activities**

The Administrator shall coordinate, as appropriate, the Administration's aeronautics activities with relevant programs in the Department of Transportation, the Department of Defense, the Department of Commerce, and the Department of Homeland Security, including the activities of the Next Generation Air Transportation System Joint Planning and Development Office established under section 709 of the Vision 100—Century of Aviation Reauthorization Act (Public Law 108-176, 49 U.S.C. 40101 note).

**§ 40104. Cooperation among Mission Directorates**

Research and development activities performed by the Aeronautics Research Mission Directorate with the primary objective of assisting in the development of a flight project in another Mission Directorate shall be funded by the Mission Directorate seeking assistance.

**SUBCHAPTER II—HIGH PRIORITY AERONAUTICS RESEARCH AND DEVELOPMENT PROGRAMS****§ 40111. Fundamental research program**

(a) OBJECTIVE.—In order to ensure that the Nation maintains needed capabilities in fundamental areas of aeronautics research, the Administrator shall establish a program of long-term fundamental research in aeronautical sciences and technologies that is not tied to specific development projects.

(b) OPERATION.—The Administrator shall conduct the program under this section, in part by awarding grants to institutions of higher education. The Administrator shall encourage the participation of institutions of higher education located in States that participate in the Experimental Program to Stimulate Competitive Research. All grants to institutions of higher education under this section shall be awarded through merit review.

**§ 40112. Research and technology programs**

(a) SUPERSONIC TRANSPORT RESEARCH AND DEVELOPMENT.—The Administrator may establish an initiative with the objective of developing and demonstrating, in a relevant environment, airframe and propulsion technologies to enable efficient, economical overland flight of supersonic civil transport aircraft with no significant impact on the environment.

(b) ROTORCRAFT AND OTHER RUNWAY-INDEPENDENT AIR VEHICLES.—The Administrator may establish a rotorcraft and other

runway-independent air vehicles initiative with the objective of developing and demonstrating improved safety, noise, and environmental impact in a relevant environment.

(c) **HYPERSONICS RESEARCH.**—The Administrator may establish a hypersonics research program with the objective of exploring the science and technology of hypersonic flight using air-breathing propulsion concepts, through a mix of theoretical work, basic and applied research, and development of flight research demonstration vehicles. The program may also include the transition to the hypersonic range of Mach 3 to Mach 5.

(d) **REVOLUTIONARY AERONAUTICAL CONCEPTS.**—The Administrator may establish a research program which covers a unique range of subsonic, fixed wing vehicles and propulsion concepts. This research is intended to push technology barriers beyond current subsonic technology. Propulsion concepts include advanced materials, morphing engines, hybrid engines, and fuel cells.

(e) **FUEL CELL-POWERED AIRCRAFT RESEARCH.**—

(1) **OBJECTIVE.**—The Administrator may establish a fuel cell-powered aircraft research program whose objective shall be to develop and test concepts to enable a hydrogen fuel cell-powered aircraft that would have no hydrocarbon or nitrogen oxide emissions into the environment.

(2) **APPROACH.**—The Administrator may establish a program of competitively awarded grants available to teams of researchers that may include the participation of individuals from universities, industry, and government for the conduct of this research.

(f) **MARS AIRCRAFT RESEARCH.**—

(1) **OBJECTIVE.**—The Administrator may establish a Mars Aircraft project whose objective shall be to develop and test concepts for an uncrewed aircraft that could operate for sustained periods in the atmosphere of Mars.

(2) **APPROACH.**—The Administrator may establish a program of competitively awarded grants available to teams of researchers that may include the participation of individuals from universities, industry, and government for the conduct of this research.

### **§ 40113. Airspace systems research**

(a) **OBJECTIVE.**—The Airspace Systems Research program shall pursue research and development to enable revolutionary improvements to and modernization of the National Airspace System, as well as to enable the introduction of new systems for vehicles that can take advantage of an improved, modern air transportation system.

(b) **ALIGNMENT.**—Not later than 1 year after December 30, 2005, the Administrator shall align the projects of the Airspace Systems Research program so that they directly support the objectives of the Joint Planning and Development Office's Next Generation Air Transportation System Integrated Plan.

### **§ 40114. Aviation safety and security research**

(a) **OBJECTIVE.**—The Aviation Safety and Security Research program shall pursue research and development activities that directly address the safety and security needs of the National Airspace System and the aircraft that fly in it. The program shall develop

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prevention, intervention, and mitigation technologies aimed at causal, contributory, or circumstantial factors of aviation accidents.

(b) **ALIGNMENT.**—Not later than 1 year after December 30, 2005, the Administrator shall align the projects of the Aviation Safety and Security Research program so that they directly support the objectives of the Joint Planning and Development Office's Next Generation Air Transportation System Integrated Plan.

#### **§ 40115. Aviation weather research**

The Administrator may carry out a program of collaborative research with the National Oceanic and Atmospheric Administration on convective weather events, with the goal of significantly improving the reliability of 2-hour to 6-hour aviation weather forecasts.

#### **§ 40116. University-based Centers for Research on Aviation Training**

(a) **IN GENERAL.**—The Administrator shall award grants to institutions of higher education (or consortia thereof) to establish one or more Centers for Research on Aviation Training under cooperative agreements with appropriate Administration Centers.

(b) **PURPOSE.**—The purpose of the Centers for Research on Aviation Training shall be to investigate the impact of new technologies and procedures, particularly those related to the aircraft flight deck and to the air traffic management functions, on training requirements for pilots and air traffic controllers.

(c) **APPLICATION.**—An institution of higher education (or a consortium of such institutions) seeking funding under this section shall submit an application to the Administrator at such time, in such manner, and containing such information as the Administrator may require, including, at a minimum, a 5-year research plan.

(d) **AWARD DURATION.**—An award made by the Administrator under this section shall be for a period of 5 years and may be renewed on the basis of—

(1) satisfactory performance in meeting the goals of the research plan proposed in the application submitted under subsection (c); and

(2) other requirements as specified by the Administrator.

### **SUBCHAPTER III—SCHOLARSHIPS**

#### **§ 40131. Aeronautics scholarships**

(a) **ESTABLISHMENT.**—The Administrator shall establish a program of scholarships for full-time graduate students who are United States citizens and are enrolled in, or have been accepted by and have indicated their intention to enroll in, accredited Masters degree programs in aeronautical engineering or equivalent programs at institutions of higher education. Each such scholarship shall cover the costs of room, board, tuition, and fees, and may be provided for a maximum of 2 years.

(b) **IMPLEMENTATION.**—Not later than 180 days after December 30, 2005, the Administrator shall publish regulations governing the scholarship program under this section.

(c) **COOPERATIVE TRAINING OPPORTUNITIES.**—Students who have been awarded a scholarship under this section shall have the opportunity for paid employment at one of the Administration Centers engaged in aeronautics research and development during the

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summer prior to the first year of the student's Masters program, and between the first and second year, if applicable.

#### SUBCHAPTER IV—DATA REQUESTS

##### § 40141. Aviation data requests

The Administrator shall make available upon request satellite imagery and aerial photography of remote terrain that the Administration owns at the time of the request to the Administrator of the Federal Aviation Administration or the Director of the Five Star Medallion Program, to assist and train pilots in navigating challenging topographical features of such terrain.

#### CHAPTER 403—NATIONAL SPACE GRANT COLLEGE AND FELLOWSHIP PROGRAM

Sec.

- 40301. Purposes.
- 40302. Definitions.
- 40303. National space grant college and fellowship program.
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##### § 40301. Purposes

The purposes of this chapter are to—

- (1) increase the understanding, assessment, development, and utilization of space resources by promoting a strong educational base, responsive research and training activities, and broad and prompt dissemination of knowledge and techniques;
- (2) utilize the abilities and talents of the universities of the Nation to support and contribute to the exploration and development of the resources and opportunities afforded by the space environment;
- (3) encourage and support, within the university community of the Nation, the existence of interdisciplinary and multidisciplinary programs of space research that—
  - (A) engage in integrated activities of training, research, and public service;
  - (B) have cooperative programs with industry; and
  - (C) are coordinated with the overall program of the Administration;
- (4) encourage and support the existence of consortia, made up of university and industry members, in order to advance the exploration and development of space resources in cases in which national objectives can be better fulfilled through such consortia than through the programs of single universities;
- (5) encourage and support Federal funding for graduate fellowships in fields related to space; and
- (6) support activities in colleges and universities generally for the purpose of creating and operating a network of institutional programs that will enhance achievements resulting from efforts under this chapter.

**§ 40302. Definitions**

In this chapter:

(1) **AERONAUTICAL AND SPACE ACTIVITIES.**—The term “aeronautical and space activities” has the meaning given the term in section 20103 of this title.

(2) **FIELD RELATED TO SPACE.**—The term “field related to space” means any academic discipline or field of study (including the physical, natural, and biological sciences, and engineering, space technology, education, economics, sociology, communications, planning, law, international affairs, and public administration) which is concerned with or likely to improve the understanding, assessment, development, and utilization of space.

(3) **PANEL.**—The term “panel” means the space grant review panel established pursuant to section 40308 of this title.

(4) **PERSON.**—The term “person” means any individual, any public or private corporation, partnership, or other association or entity (including any space grant college, space grant regional consortium, institution of higher education, institute, or laboratory), or any State, political subdivision of a State, or agency or officer of a State or political subdivision of a State.

(5) **SPACE ENVIRONMENT.**—The term “space environment” means the environment beyond the sensible atmosphere of the Earth.

(6) **SPACE GRANT COLLEGE.**—The term “space grant college” means any public or private institution of higher education which is designated as such by the Administrator pursuant to section 40306 of this title.

(7) **SPACE GRANT PROGRAM.**—The term “space grant program” means any program that—

(A) is administered by any space grant college, space grant regional consortium, institution of higher education, institute, laboratory, or State or local agency; and

(B) includes 2 or more projects involving education and one or more of the following activities in the fields related to space:

(i) Research.

(ii) Training.

(iii) Advisory services.

(8) **SPACE GRANT REGIONAL CONSORTIUM.**—The term “space grant regional consortium” means any association or other alliance that is designated as a space grant regional consortium by the Administrator pursuant to section 40306 of this title.

(9) **SPACE RESOURCE.**—The term “space resource” means any tangible or intangible benefit which can be realized only from—

(A) aeronautical and space activities; or

(B) advancements in any field related to space.

(10) **STATE.**—The term “State” means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or any other territory or possession of the United States.

**§ 40303. National space grant college and fellowship program**

(a) **ESTABLISHMENT.**—The Administrator shall establish and maintain, within the Administration, a program to be known as

the national space grant college and fellowship program. The national space grant college and fellowship program shall consist of the financial assistance and other activities provided for in this chapter. The Administrator shall establish long-range planning guidelines and priorities, and adequately evaluate the program.

(b) FUNCTIONS.—Within the Administration, the program shall—

(1) apply the long-range planning guidelines and the priorities established by the Administrator under subsection (a);

(2) advise the Administrator with respect to the expertise and capabilities which are available through the national space grant college and fellowship program, and make such expertise available to the Administration as directed by the Administrator;

(3) evaluate activities conducted under grants and contracts awarded pursuant to sections 40304 and 40305 of this title to ensure that the purposes set forth in section 40301 of this title are implemented;

(4) encourage other Federal departments, agencies, and instrumentalities to use and take advantage of the expertise and capabilities which are available through the national space grant college and fellowship program, on a cooperative or other basis;

(5) encourage cooperation and coordination with other Federal programs concerned with the development of space resources and fields related to space;

(6) advise the Administrator on the designation of recipients supported by the national space grant college and fellowship program and, in appropriate cases, on the termination or suspension of any such designation; and

(7) encourage the formation and growth of space grant and fellowship programs.

(c) GENERAL AUTHORITIES.—To carry out the provisions of this chapter, the Administrator may—

(1) accept conditional or unconditional gifts or donations of services, money, or property, real, personal or mixed, tangible or intangible;

(2) accept and use funds from other Federal departments, agencies, and instrumentalities to pay for fellowships, grants, contracts, and other transactions; and

(3) issue such rules and regulations as may be necessary and appropriate.

#### § 40304. Grants or contracts

(a) AUTHORITY OF ADMINISTRATOR.—The Administrator may make grants and enter into contracts or other transactions under this subsection to assist any space grant and fellowship program or project if the Administrator finds that the program or project will carry out the purposes set forth in section 40301 of this title. The total amount paid pursuant to a grant or contract may equal not more than 66 percent of the total cost of the space grant and fellowship program or project involved, except in the case of grants or contracts paid for with funds accepted by the Administrator pursuant to section 40303(c)(2) of this title.

(b) SPECIAL GRANTS.—The Administrator may make special grants under this subsection to carry out the purposes set forth in section 40301 of this title. The amount of a special grant may equal up to 100 percent of the total cost of the project involved.

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A special grant may be made under this subsection only if the Administrator finds that—

(1) no reasonable means is available through which the applicant can meet the matching requirement for a grant under subsection (a);

(2) the probable benefit of the project outweighs the public interest in the matching requirement; and

(3) the same or equivalent benefit cannot be obtained through the award of a contract or grant under subsection (a) or section 40305 of this title.

(c) APPLICATION.—Any person may apply to the Administrator for a grant or contract under this section. Application shall be made in such form and manner, and with such content and other submissions, as the Administrator shall by regulation prescribe.

(d) TERMS AND CONDITIONS.—

(1) IN GENERAL.—Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in paragraphs (2) and (3) and to such other terms, conditions, and requirements as the Administrator considers necessary or appropriate.

(2) LIMITATIONS.—No payment under any grant or contract under this section may be applied to—

(A) the purchase of any land;

(B) the purchase, construction, preservation, or repair of any building; or

(C) the purchase or construction of any launch facility or launch vehicle.

(3) LEASES.—Notwithstanding paragraph (2), the items in subparagraphs (A), (B), and (C) of such paragraph may be leased upon written approval of the Administrator.

(4) RECORDS.—Any person that receives or utilizes any proceeds of any grant or contract under this section shall keep such records as the Administrator shall by regulation prescribe as being necessary and appropriate to facilitate effective audit and evaluation, including records which fully disclose the amount and disposition by such recipient of such proceeds, the total cost of the program or project in connection with which such proceeds were used, and the amount, if any, of such cost which was provided through other sources. Such records shall be maintained for 3 years after the completion of such a program or project. The Administrator and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access, for the purpose of audit and evaluation, to any books, documents, papers, and records of receipts which, in the opinion of the Administrator or the Comptroller General, may be related or pertinent to such grants and contracts.

#### § 40305. Specific national needs

(a) IDENTIFICATION OF SPECIFIC NEEDS AND GRANT-MAKING AND CONTRACTING AUTHORITY.—The Administrator shall identify specific national needs and problems relating to space. The Administrator may make grants or enter into contracts under this section with respect to such needs or problems. The amount of any such grant or contract may equal up to 100 percent of the total cost of the project involved.

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(b) APPLICATIONS FOR GRANTS OR CONTRACTS.—Any person may apply to the Administrator for a grant or contract under this section. In addition, the Administrator may invite applications with respect to specific national needs or problems identified under subsection (a). Application shall be made in such form and manner, and with such content and other submissions, as the Administrator shall by regulation prescribe. Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in paragraphs (2) and (4) of section 40304(d) of this title and to such other terms, conditions, and requirements as the Administrator considers necessary or appropriate.

**§ 40306. Space grant college and space grant regional consortium**

(a) DESIGNATION AND QUALIFICATIONS.—

(1) AUTHORITY TO DESIGNATE.—The Administrator may designate—

(A) any institution of higher education as a space grant college; and

(B) any association or other alliance of 2 or more persons, other than individuals, as a space grant regional consortium.

(2) SPACE GRANT COLLEGE REQUIREMENTS.—No institution of higher education may be designated as a space grant college unless the Administrator finds that such institution—

(A) is maintaining a balanced program of research, education, training, and advisory services in fields related to space;

(B) will act in accordance with such guidelines as are prescribed under subsection (b)(2); and

(C) meets such other qualifications as the Administrator considers necessary or appropriate.

(3) SPACE GRANT REGIONAL CONSORTIUM REQUIREMENTS.—No association or other alliance of 2 or more persons may be designated as a space grant regional consortium unless the Administrator finds that such association or alliance—

(A) is established for the purpose of sharing expertise, research, educational facilities or training facilities, and other capabilities in order to facilitate research, education, training, and advisory services in any field related to space;

(B) will encourage and follow a regional approach to solving problems or meeting needs relating to space, in cooperation with appropriate space grant colleges, space grant programs, and other persons in the region;

(C) will act in accordance with such guidelines as are prescribed under subsection (b)(2); and

(D) meets such other qualifications as the Administrator considers necessary or appropriate.

(b) QUALIFICATIONS AND GUIDELINES.—The Administrator shall by regulation prescribe—

(1) the qualifications required to be met under paragraphs (2)(C) and (3)(D) of subsection (a); and

(2) guidelines relating to the activities and responsibilities of space grant colleges and space grant regional consortia.

(c) SUSPENSION OR TERMINATION OF DESIGNATION.—The Administrator may, for cause and after an opportunity for hearing, suspend or terminate any designation under subsection (a).

**§ 40307. Space grant fellowship program**

(a) AWARD OF FELLOWSHIPS.—The Administrator shall support a space grant fellowship program to provide educational and training assistance to qualified individuals at the graduate level of education in fields related to space. Such fellowships shall be awarded pursuant to guidelines established by the Administrator. Space grant fellowships shall be awarded to individuals at space grant colleges, space grant regional consortia, other colleges and institutions of higher education, professional associations, and institutes in such a manner as to ensure wide geographic and institutional diversity in the pursuit of research under the fellowship program.

(b) LIMITATION ON AMOUNT PROVIDED.—The total amount which may be provided for grants under the space grant fellowship program during any fiscal year shall not exceed an amount equal to 50 percent of the total funds appropriated for such year pursuant to this chapter.

(c) AUTHORITY TO SPONSOR OTHER RESEARCH FELLOWSHIP PROGRAMS UNAFFECTED.—Nothing in this section shall be construed to prohibit the Administrator from sponsoring any research fellowship program, including any special emphasis program, which is established under an authority other than this chapter.

**§ 40308. Space grant review panel**

(a) ESTABLISHMENT.—The Administrator shall establish an independent committee known as the space grant review panel, which shall not be subject to the provisions of the Federal Advisory Committee Act (5 App. U.S.C.).

(b) DUTIES.—The panel shall take such steps as may be necessary to review, and shall advise the Administrator with respect to—

(1) applications or proposals for, and performance under, grants and contracts awarded pursuant to sections 40304 and 40305 of this title;

(2) the space grant fellowship program;

(3) the designation and operation of space grant colleges and space grant regional consortia, and the operation of space grant and fellowship programs;

(4) the formulation and application of the planning guidelines and priorities pursuant to subsections (a) and (b)(1) of section 40303 of this title; and

(5) such other matters as the Administrator refers to the panel for review and advice.

(c) PERSONNEL AND ADMINISTRATIVE SERVICES.—The Administrator shall make available to the panel any information, personnel, and administrative services and assistance which is reasonable to carry out the duties of the panel.

(d) MEMBERS.—

(1) APPOINTMENT.—The Administrator shall appoint the voting members of the panel. A majority of the voting members shall be individuals who, by reason of knowledge, experience, or training, are especially qualified in one or more of the disciplines and fields related to space. The other voting members shall be individuals who, by reason of knowledge, experience, or training, are especially qualified in, or representative of, education, extension services, State government, industry, economics, planning, or any other activity related to efforts to enhance the understanding, assessment, development, or

utilization of space resources. The Administrator shall consider the potential conflict of interest of any individual in making appointments to the panel.

(2) **CHAIRMAN AND VICE CHAIRMAN.**—The Administrator shall select one voting member to serve as the Chairman and another voting member to serve as the Vice Chairman. The Vice Chairman shall act as Chairman in the absence or incapacity of the Chairman.

(3) **REIMBURSEMENT FOR EXPENSES.**—Voting members of the panel who are not Federal employees shall be reimbursed for actual and reasonable expenses incurred in the performance of such duties.

(4) **MEETINGS.**—The panel shall meet on a biannual basis and, at any other time, at the call of the Chairman or upon the request of a majority of the voting members or of the Administrator.

(5) **POWERS.**—The panel may exercise such powers as are reasonably necessary in order to carry out the duties enumerated in subsection (b).

#### **§ 40309. Availability of other Federal personnel and data**

Each department, agency, or other instrumentality of the Federal Government that is engaged in or concerned with, or that has authority over, matters relating to space—

(1) may, upon a written request from the Administrator, make available, on a reimbursable basis or otherwise, any personnel (with their consent and without prejudice to their position and rating), service, or facility which the Administrator considers necessary to carry out any provision of this chapter;

(2) may, upon a written request from the Administrator, furnish any available data or other information which the Administrator considers necessary to carry out any provision of this chapter; and

(3) may cooperate with the Administration.

#### **§ 40310. Designation or award to be on competitive basis**

The Administrator shall not under this chapter designate any space grant college or space grant regional consortium or award any fellowship, grant, or contract unless such designation or award is made in accordance with the competitive, merit-based review process employed by the Administration on October 30, 1987.

#### **§ 40311. Continuing emphasis**

The Administration shall continue its emphasis on the importance of education to expand opportunities for Americans to understand and participate in the Administration's aeronautics and space projects by supporting and enhancing science and engineering education, research, and public outreach efforts.

### **CHAPTER 405—BIOMEDICAL RESEARCH IN SPACE**

Sec.

40501. Biomedical research joint working group.

40502. Biomedical research grants.

40503. Biomedical research fellowships.

40504. Establishment of electronic data archive.

40505. Establishment of emergency medical service telemedicine capability.

**§ 40501. Biomedical research joint working group**

(a) **ESTABLISHMENT.**—The Administrator and the Director of the National Institutes of Health shall jointly establish a working group to coordinate biomedical research activities in areas where a microgravity environment may contribute to significant progress in the understanding and treatment of diseases and other medical conditions. The joint working group shall formulate joint and complementary programs in such areas of research.

(b) **MEMBERSHIP.**—The joint working group shall include equal representation from the Administration and the National Institutes of Health, and shall include representation from National Institutes of Health councils, as selected by the Director of the National Institutes of Health, and from the National Aeronautics and Space Administration Advisory Council.

(c) **ANNUAL BIOMEDICAL RESEARCH SYMPOSIA.**—The joint working group shall organize annual symposia on biomedical research described in subsection (a) under the joint sponsorship of the Administration and the National Institutes of Health.

(d) **ANNUAL REPORTING REQUIREMENT.**—The joint working group shall report annually to Congress on its progress in carrying out this section.

**§ 40502. Biomedical research grants**

(a) **ESTABLISHMENT OF PROGRAM.**—The Administrator and the Director of the National Institutes of Health shall establish a joint program of biomedical research grants in areas described in section 40501(a) of this title, where such research requires access to a microgravity environment. Such program shall be consistent with actions taken by the joint working group under section 40501 of this title.

(b) **RESEARCH OPPORTUNITY ANNOUNCEMENTS.**—The grants program established under subsection (a) shall annually issue joint research opportunity announcements under the sponsorship of the National Institutes of Health and the Administration. Responses to the announcements shall be evaluated by a peer review committee whose members shall be selected by the Director of the National Institutes of Health and the Administrator, and shall include individuals not employed by the Administration or the National Institutes of Health.

**§ 40503. Biomedical research fellowships**

The Administrator and the Director of the National Institutes of Health shall create a joint program of graduate research fellowships in biomedical research described in section 40501(a) of this title. Fellowships under such program may provide for participation in approved research conferences and symposia.

**§ 40504. Establishment of electronic data archive**

The Administrator shall create and maintain a national electronic data archive for biomedical research data obtained from space-based experiments.

**§ 40505. Establishment of emergency medical service telemedicine capability**

The Administrator, the Administrator of the Federal Emergency Management Agency, the Director of the Office of Foreign Disaster Assistance, and the Surgeon General of the United States shall

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jointly create and maintain an international telemedicine satellite consultation capability to support emergency medical services in disaster-stricken areas.

### **CHAPTER 407—ENVIRONMENTALLY FRIENDLY AIRCRAFT**

Sec.

- 40701. Research and development initiative.
- 40702. Additional research and development initiative.
- 40703. Research alignment.
- 40704. Research program on perceived impact of sonic booms.

#### **§ 40701. Research and development initiative**

The Administrator may establish an initiative with the objective of developing, and demonstrating in a relevant environment, technologies to enable the following commercial aircraft performance characteristics:

- (1) **NOISE LEVELS.**—Noise levels on takeoff and on airport approach and landing that do not exceed ambient noise levels in the absence of flight operations in the vicinity of airports from which such commercial aircraft would normally operate.
- (2) **ENERGY CONSUMPTION.**—Twenty-five percent reduction in the energy required for medium- to long-range flights, compared to aircraft in commercial service as of December 30, 2005.
- (3) **EMISSIONS.**—Nitrogen oxides on take-off and landing that are significantly reduced, without adversely affecting hydrocarbons and smoke, relative to aircraft in commercial service as of December 30, 2005.

#### **§ 40702. Additional research and development initiative**

The Administrator shall establish an initiative involving the Administration, universities, industry, and other research organizations as appropriate, of research, development, and demonstration, in a relevant environment, of technologies to enable the following commercial aircraft performance characteristics:

- (1) **NOISE LEVELS.**—Noise levels on takeoff and on airport approach and landing that do not exceed ambient noise levels in the absence of flight operations in the vicinity of airports from which such commercial aircraft would normally operate, without increasing energy consumption or nitrogen oxide emissions compared to aircraft in commercial service as of October 15, 2008.
- (2) **GREENHOUSE GAS EMISSIONS.**—Significant reductions in greenhouse gas emissions compared to aircraft in commercial services as of October 15, 2008.

#### **§ 40703. Research alignment**

In addition to pursuing the research and development initiative described in section 40702 of this title, the Administrator shall, to the maximum extent practicable within available funding, align the fundamental aeronautics research program to address high priority technology challenges of the National Academies' Decadal Survey of Civil Aeronautics, and shall work to increase the degree of involvement of external organizations, and especially of universities, in the fundamental aeronautics research program.

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**§ 40704. Research program on perceived impact of sonic booms**

(a) **ESTABLISHMENT.**—The Administrator shall establish a cooperative research program with industry, including the conduct of flight demonstrations in a relevant environment, to collect data on the perceived impact of sonic booms. The data could enable the promulgation of appropriate standards for overland commercial supersonic flight operations.

(b) **COORDINATION.**—The Administrator shall ensure that sonic boom research is coordinated as appropriate with the Administrator of the Federal Aviation Administration, and as appropriate make use of the expertise of the Partnership for Air Transportation Noise and Emissions Reduction Center of Excellence sponsored by the Administration and the Federal Aviation Administration.

**CHAPTER 409—MISCELLANEOUS**

Sec.

- 40901. Science, Space, and Technology Education Trust Fund.
- 40902. National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund.
- 40903. Experimental Program to Stimulate Competitive Research—merit grant competition requirements.
- 40904. Microgravity research.
- 40905. Program to expand distance learning in rural underserved areas.
- 40906. Equal access to the Administration's education programs.
- 40907. Museums.
- 40908. Continuation of certain education programs.
- 40909. Compliance with title IX of Education Amendments of 1972.

**§ 40901. Science, Space, and Technology Education Trust Fund**

There is appropriated, by transfer from funds appropriated in the Department of Housing and Urban Development—Independent Agencies Appropriations Act, 1989 (Public Law 100-404, 102 Stat. 1014), for “Construction of facilities”, the sum of \$15,000,000 to the “Science, Space, and Technology Education Trust Fund”, which is hereby established in the Treasury of the United States. The Secretary of the Treasury shall invest these funds in the United States Treasury special issue securities, and interest shall be credited to the Trust Fund on a quarterly basis. Such interest shall be available for the purpose of making grants for programs directed at improving science, space, and technology education in the United States. The Administrator, after consultation with the Director of the National Science Foundation, shall review applications made for such grants and determine the distribution of available funds on a competitive basis. Grants shall be made available to any awardee only to the extent that the awardee provides matching funds from non-Federal sources to carry out the program for which grants from this Trust Fund are made. Of the funds made available by this Trust Fund, \$250,000 shall be disbursed each calendar quarter to the Challenger Center for Space Science Education. The Administrator shall submit to Congress an annual report on the grants made pursuant to this section.

**§ 40902. National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund**

(a) **ESTABLISHMENT.**—There is established in the Treasury of the United States, in tribute to the dedicated crew of the Space

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Shuttle Challenger, a trust fund to be known as the National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund (hereafter in this section referred to as the “Trust Fund”). The Trust Fund shall consist of amounts which may from time to time, at the discretion of the Administrator, be transferred from the National Aeronautics and Space Administration Gifts and Donations Trust Fund.

(b) INVESTMENT OF TRUST FUND.—The Administrator shall direct the Secretary of the Treasury to invest and reinvest funds in the Trust Fund in public debt securities with maturities suitable for the needs of the Trust Fund, and bearing interest at rates determined by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States of comparable maturities. Interest earned shall be credited to the Trust Fund.

(c) PURPOSE.—Income accruing from the Trust Fund principal shall be used to create the National Aeronautics and Space Administration Endeavor Teacher Fellowship Program, to the extent provided in advance in appropriation Acts. The Administrator is authorized to use such funds to award fellowships to selected United States nationals who are undergraduate students pursuing a course of study leading to certified teaching degrees in elementary education or in secondary education in mathematics, science, or technology disciplines. Awards shall be made pursuant to standards established for the fellowship program by the Administrator.

**§ 40903. Experimental Program to Stimulate Competitive Research—merit grant competition requirements**

(a) DEFINITION OF ELIGIBLE STATE.—In this section, the term “eligible State” means a State designated by the Administrator as eligible to compete in the National Science Foundation’s Experimental Program to Stimulate Competitive Research.

(b) COMPETITION.—Making use of the existing infrastructure established in eligible States by the National Science Foundation, the Administrator shall conduct a merit grant competition among the eligible States in areas of research important to the mission of the Administration. With respect to a grant application by an eligible State, the Administrator shall consider—

(1) the application’s merit and relevance to the mission of the Administration;

(2) the potential for the grant to serve as a catalyst to enhance the ability of researchers in the State to become more competitive for regular Administration funding;

(3) the potential for the grant to improve the environment for science, mathematics, and engineering education in the State; and

(4) the need to ensure the maximum distribution of grants among eligible States, consistent with merit.

(c) SUPPLEMENTAL GRANTS.—The Administrator shall endeavor, where appropriate, to supplement grants made under subsection (b) with such grants for fellowships, traineeships, equipment, or instrumentation as are available.

(d) INFORMATION IN ANNUAL BUDGET SUBMISSION.—In order to ensure that research expertise and talent throughout the Nation is developed and engaged in Administration research and education activities, the Administration shall, as part of its annual budget submission, detail additional steps that can be taken to further

integrate the participating eligible States in both existing and new or emerging Administration research programs and center activities.

**§ 40904. Microgravity research**

The Administrator shall—

- (1) ensure the capacity to support ground-based research leading to space-based basic and applied scientific research in a variety of disciplines with potential direct national benefits and applications that can be advanced significantly from the uniqueness of microgravity and the space environment; and
- (2) carry out, to the maximum extent practicable, basic, applied, and commercial International Space Station research in fields such as molecular crystal growth, animal research, basic fluid physics, combustion research, cellular biotechnology, low-temperature physics, and cellular research at a level that will sustain the existing United States scientific expertise and research capability in microgravity research.

**§ 40905. Program to expand distance learning in rural underserved areas**

(a) **IN GENERAL.**—The Administrator shall develop or expand programs to extend science and space educational outreach to rural communities and schools through video conferencing, interpretive exhibits, teacher education, classroom presentations, and student field trips.

(b) **PRIORITIES.**—In carrying out subsection (a), the Administrator shall give priority to existing programs, including Challenger Learning Centers—

- (1) that utilize community-based partnerships in the field;
- (2) that build and maintain video conference and exhibit capacity;
- (3) that travel directly to rural communities and serve low-income populations; and
- (4) with a special emphasis on increasing the number of women and minorities in the science and engineering professions.

**§ 40906. Equal access to the Administration's education programs**

(a) **IN GENERAL.**—The Administrator shall strive to ensure equal access for minority and economically disadvantaged students to the Administration's education programs.

(b) **REPORT.**—Every 2 years, the Administrator shall submit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the efforts by the Administrator to ensure equal access for minority and economically disadvantaged students under this section and the results of such efforts. As part of the report, the Administrator shall provide—

- (1) data on minority participation in the Administration's education programs, at a minimum in the categories of—
  - (A) elementary and secondary education;
  - (B) undergraduate education; and
  - (C) graduate education; and
- (2) the total value of grants the Administration made to Historically Black Colleges and Universities and to Hispanic

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Serving Institutions through education programs during the period covered by the report.

(c) PROGRAM.—The Administrator shall establish the Dr. Mae C. Jemison Grant Program to work with Minority Serving Institutions to bring more women of color into the field of space and aeronautics.

**§ 40907. Museums**

The Administrator may provide grants to, and enter into cooperative agreements with, museums and planetariums to enable them to enhance programs related to space exploration, aeronautics, space science, Earth science, or microgravity.

**§ 40908. Continuation of certain education programs**

From amounts appropriated to the Administration for education programs, the Administrator shall ensure the continuation of the Space Grant Program, the Experimental Program to Stimulate Competitive Research, and, consistent with the results of the review under section 614 of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155, 119 Stat. 2933), the Administration Explorer School program, to motivate and develop the next generation of explorers.

**§ 40909. Compliance with title IX of Education Amendments of 1972**

To comply with title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.), the Administrator shall conduct compliance reviews of at least 2 grantees annually.

## **Subtitle V—Programs Targeting Commercial Opportunities**

### **CHAPTER 501—SPACE COMMERCE**

#### SUBCHAPTER I—GENERAL

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50101. Definitions.

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#### SUBCHAPTER I—GENERAL

**§ 50101. Definitions**

In this chapter:

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(1) **COMMERCIAL PROVIDER.**—The term “commercial provider” means any person providing space transportation services or other space-related activities, primary control of which is held by persons other than Federal, State, local, and foreign governments.

(2) **PAYLOAD.**—The term “payload” means anything that a person undertakes to transport to, from, or within outer space, or in suborbital trajectory, by means of a space transportation vehicle, but does not include the space transportation vehicle itself except for its components which are specifically designed or adapted for that payload.

(3) **SPACE-RELATED ACTIVITIES.**—The term “space-related activities” includes research and development, manufacturing, processing, service, and other associated and support activities.

(4) **SPACE TRANSPORTATION SERVICES.**—The term “space transportation services” means the preparation of a space transportation vehicle and its payloads for transportation to, from, or within outer space, or in suborbital trajectory, and the conduct of transporting a payload to, from, or within outer space, or in suborbital trajectory.

(5) **SPACE TRANSPORTATION VEHICLE.**—The term “space transportation vehicle” means any vehicle constructed for the purpose of operating in, or transporting a payload to, from, or within, outer space, or in suborbital trajectory, and includes any component of such vehicle not specifically designed or adapted for a payload.

(6) **STATE.**—The term “State” means each of the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.

(7) **UNITED STATES COMMERCIAL PROVIDER.**—The term “United States commercial provider” means a commercial provider, organized under the laws of the United States or of a State, that is—

(A) more than 50 percent owned by United States nationals; or

(B) a subsidiary of a foreign company and the Secretary of Transportation finds that—

(i) such subsidiary has in the past evidenced a substantial commitment to the United States market through—

(I) investments in the United States in long-term research, development, and manufacturing (including the manufacture of major components and subassemblies); and

(II) significant contributions to employment in the United States; and

(ii) the country or countries in which such foreign company is incorporated or organized, and, if appropriate, in which it principally conducts its business, affords reciprocal treatment to companies described in subparagraph (A) comparable to that afforded to such foreign company’s subsidiary in the United States, as evidenced by—

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(I) providing comparable opportunities for companies described in subparagraph (A) to participate in Government-sponsored research and development similar to that authorized under this chapter;

(II) providing no barriers, to companies described in subparagraph (A) with respect to local investment opportunities, that are not provided to foreign companies in the United States; and

(III) providing adequate and effective protection for the intellectual property rights of companies described in subparagraph (A).

#### SUBCHAPTER II—PROMOTION OF COMMERCIAL SPACE OPPORTUNITIES

##### § 50111. Commercialization of Space Station

(a) POLICY.—Congress declares that a priority goal of constructing the International Space Station is the economic development of Earth orbital space. Congress further declares that free and competitive markets create the most efficient conditions for promoting economic development, and should therefore govern the economic development of Earth orbital space. Congress further declares that the use of free market principles in operating, servicing, allocating the use of, and adding capabilities to the Space Station, and the resulting fullest possible engagement of commercial providers and participation of commercial users, will reduce Space Station operational costs for all partners and the Federal Government's share of the United States burden to fund operations.

(b) USE OF UNITED STATES COMMERCIALLY PROVIDED SERVICES.—

(1) IN GENERAL.—In order to stimulate commercial use of space, help maximize the utility and productivity of the International Space Station, and enable a commercial means of providing crew transfer and crew rescue services for the International Space Station, the Administration shall—

(A) make use of United States commercially provided International Space Station crew transfer and crew rescue services to the maximum extent practicable, if those commercial services have demonstrated the capability to meet Administration-specified ascent, entry, and International Space Station proximity operations safety requirements;

(B) limit, to the maximum extent practicable, the use of the Crew Exploration Vehicle to missions carrying astronauts beyond low Earth orbit once commercial crew transfer and crew rescue services that meet safety requirements become operational;

(C) facilitate, to the maximum extent practicable, the transfer of Administration-developed technologies to potential United States commercial crew transfer and rescue service providers, consistent with United States law; and

(D) issue a notice of intent, not later than 180 days after October 15, 2008, to enter into a funded, competitively awarded Space Act Agreement with 2 or more commercial entities for a Phase 1 Commercial Orbital Transportation Services crewed vehicle demonstration program.

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(2) CONGRESSIONAL INTENT.—It is the intent of Congress that funding for the program described in paragraph (1)(D) shall not come at the expense of full funding of the amounts authorized under section 101(3)(A) of the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110-422, 122 Stat. 4783), and for future fiscal years, for Orion Crew Exploration Vehicle development, Ares I Crew Launch Vehicle development, or International Space Station cargo delivery.

(3) ADDITIONAL TECHNOLOGIES.—The Administration shall make International Space Station-compatible docking adaptors and other relevant technologies available to the commercial crew providers selected to service the International Space Station.

(4) CREW TRANSFER AND CREW RESCUE SERVICES CONTRACT.—If a commercial provider demonstrates the capability to provide International Space Station crew transfer and crew rescue services and to satisfy Administration ascent, entry, and International Space Station proximity operations safety requirements, the Administration shall enter into an International Space Station crew transfer and crew rescue services contract with that commercial provider for a portion of the Administration's anticipated International Space Station crew transfer and crew rescue requirements from the time the commercial provider commences operations under contract with the Administration through calendar year 2016, with an option to extend the period of performance through calendar year 2020.

#### **§ 50112. Promotion of United States Global Positioning System standards**

In order to support and sustain the Global Positioning System in a manner that will most effectively contribute to the national security, public safety, scientific, and economic interests of the United States, Congress encourages the President to—

(1) ensure the operation of the Global Positioning System on a continuous worldwide basis free of direct user fees;

(2) enter into international agreements that promote cooperation with foreign governments and international organizations to—

(A) establish the Global Positioning System and its augmentations as an acceptable international standard; and

(B) eliminate any foreign barriers to applications of the Global Positioning System worldwide; and

(3) provide clear direction and adequate resources to the Assistant Secretary of Commerce for Communications and Information so that on an international basis the Assistant Secretary can—

(A) achieve and sustain efficient management of the electromagnetic spectrum used by the Global Positioning System; and

(B) protect that spectrum from disruption and interference.

#### **§ 50113. Acquisition of space science data**

(a) DEFINITION OF SPACE SCIENCE DATA.—In this section, the term “space science data” includes scientific data concerning—

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- (1) the elemental and mineralogical resources of the moon, asteroids, planets and their moons, and comets;
- (2) microgravity acceleration; and
- (3) solar storm monitoring.

(b) **ACQUISITION FROM COMMERCIAL PROVIDERS.**—The Administrator shall, to the extent possible and while satisfying the scientific or educational requirements of the Administration, and where appropriate, of other Federal agencies and scientific researchers, acquire, where cost effective, space science data from a commercial provider.

(c) **TREATMENT OF SPACE SCIENCE DATA AS COMMERCIAL ITEM UNDER ACQUISITION LAWS.**—Acquisitions of space science data by the Administrator shall be carried out in accordance with applicable acquisition laws and regulations (including chapters 137 and 140 of title 10). For purposes of such law and regulations, space science data shall be considered to be a commercial item. Nothing in this subsection shall be construed to preclude the United States from acquiring, through contracts with commercial providers, sufficient rights in data to meet the needs of the scientific and educational community or the needs of other government activities.

(d) **SAFETY STANDARDS.**—Nothing in this section shall be construed to prohibit the Federal Government from requiring compliance with applicable safety standards.

(e) **LIMITATION.**—This section does not authorize the Administration to provide financial assistance for the development of commercial systems for the collection of space science data.

#### **§ 50114. Administration of commercial space centers**

The Administrator shall administer the Commercial Space Center program in a coordinated manner from Administration headquarters in Washington, D.C.

#### **§ 50115. Sources of Earth science data**

(a) **ACQUISITION.**—The Administrator shall, to the extent possible and while satisfying the scientific or educational requirements of the Administration, and where appropriate, of other Federal agencies and scientific researchers, acquire, where cost-effective, space-based and airborne Earth remote sensing data, services, distribution, and applications from a commercial provider.

(b) **TREATMENT AS COMMERCIAL ITEM UNDER ACQUISITION LAWS.**—Acquisitions by the Administrator of the data, services, distribution, and applications referred to in subsection (a) shall be carried out in accordance with applicable acquisition laws and regulations (including chapters 137 and 140 of title 10). For purposes of such law and regulations, such data, services, distribution, and applications shall be considered to be a commercial item. Nothing in this subsection shall be construed to preclude the United States from acquiring, through contracts with commercial providers, sufficient rights in data to meet the needs of the scientific and educational community or the needs of other government activities.

(c) **SAFETY STANDARDS.**—Nothing in this section shall be construed to prohibit the Federal Government from requiring compliance with applicable safety standards.

(d) **ADMINISTRATION AND EXECUTION.**—This section shall be carried out as part of the Commercial Remote Sensing Program at the Stennis Space Center.

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**§ 50116. Commercial technology transfer program**

(a) **IN GENERAL.**—The Administrator shall execute a commercial technology transfer program with the goal of facilitating the exchange of services, products, and intellectual property between the Administration and the private sector. This program shall place at least as much emphasis on encouraging the transfer of Administration technology to the private sector (“spinning out”) as on encouraging use of private sector technology by the Administration. This program shall be maintained in a manner that provides clear benefits for the Administration, the domestic economy, and the research community.

(b) **PROGRAM STRUCTURE.**—In carrying out the program described in subsection (a), the Administrator shall provide program participants with at least 45 days notice of any proposed changes to the structure of the Administration’s technology transfer and commercialization organizations that is in effect as of December 30, 2005.

**SUBCHAPTER III—FEDERAL ACQUISITION OF SPACE  
TRANSPORTATION SERVICES****§ 50131. Requirement to procure commercial space transportation services**

(a) **IN GENERAL.**—Except as otherwise provided in this section, the Federal Government shall acquire space transportation services from United States commercial providers whenever such services are required in the course of its activities. To the maximum extent practicable, the Federal Government shall plan missions to accommodate the space transportation services capabilities of United States commercial providers.

(b) **EXCEPTIONS.**—The Federal Government shall not be required to acquire space transportation services under subsection (a) if, on a case-by-case basis, the Administrator or, in the case of a national security issue, the Secretary of the Air Force, determines that—

(1) a payload requires the unique capabilities of the space shuttle;

(2) cost effective space transportation services that meet specific mission requirements would not be reasonably available from United States commercial providers when required;

(3) the use of space transportation services from United States commercial providers poses an unacceptable risk of loss of a unique scientific opportunity;

(4) the use of space transportation services from United States commercial providers is inconsistent with national security objectives;

(5) the use of space transportation services from United States commercial providers is inconsistent with international agreements for international collaborative efforts relating to science and technology;

(6) 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; or

(7) a payload can make use of the available cargo space on a space shuttle mission as a secondary payload, and such payload is consistent with the requirements of research,

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development, demonstration, scientific, commercial, and educational programs authorized by the Administrator.

(c) **AGREEMENTS WITH FOREIGN ENTITIES.**—Nothing in this section shall prevent the Administrator from planning or negotiating agreements with foreign entities for the launch of Federal Government payloads for international collaborative efforts relating to science and technology.

(d) **DELAYED EFFECT.**—Subsection (a) shall not apply to space transportation services and space transportation vehicles acquired or owned by the Federal Government before October 28, 1998, or with respect to which a contract for such acquisition or ownership has been entered into before October 28, 1998.

(e) **HISTORICAL PURPOSES.**—This section shall not be construed to prohibit the Federal Government from acquiring, owning, or maintaining space transportation vehicles solely for historical display purposes.

**§ 50132. Acquisition of commercial space transportation services**

(a) **TREATMENT OF COMMERCIAL SPACE TRANSPORTATION SERVICES AS COMMERCIAL ITEM UNDER ACQUISITION LAWS.**—Acquisitions of space transportation services by the Federal Government shall be carried out in accordance with applicable acquisition laws and regulations (including chapters 137 and 140 of title 10). For purposes of such law and regulations, space transportation services shall be considered to be a commercial item.

(b) **SAFETY STANDARDS.**—Nothing in this section shall be construed to prohibit the Federal Government from requiring compliance with applicable safety standards.

**§ 50133. Shuttle privatization**

The Administrator shall prepare for an orderly transition from the Federal operation, or Federal management of contracted operation, of space transportation systems to the Federal purchase of commercial space transportation services for all nonemergency space transportation requirements for transportation to and from Earth orbit, including human, cargo, and mixed payloads. In those preparations, the Administrator shall take into account the need for short-term economies, as well as the goal of restoring the Administration's research focus and its mandate to promote the fullest possible commercial use of space. As part of those preparations, the Administrator shall plan for the potential privatization of the space shuttle program. Such plan shall keep safety and cost effectiveness as high priorities. Nothing in this section shall prohibit the Administration from studying, designing, developing, or funding upgrades or modifications essential to the safe and economical operation of the space shuttle fleet.

**§ 50134. Use of excess intercontinental ballistic missiles**

(a) **IN GENERAL.**—The Federal Government shall not—

(1) convert any missile described in subsection (c) to a space transportation vehicle configuration; or

(2) transfer ownership of any such missile to another person, except as provided in subsection (b).

(b) **AUTHORIZED FEDERAL USES.**—

(1) **IN GENERAL.**—A missile described in subsection (c) may be converted for use as a space transportation vehicle by the

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Federal Government if, except as provided in paragraph (2) and at least 30 days before such conversion, the agency seeking to use the missile as a space transportation vehicle transmits to the Committee on Armed Services and the Committee on Science and Technology of the House of Representatives, and to the Committee on Armed Services and the Committee on Commerce, Science, and Transportation of the Senate, a certification that the use of such missile—

(A) would result in cost savings to the Federal Government when compared to the cost of acquiring space transportation services from United States commercial providers;

(B) meets all mission requirements of the agency, including performance, schedule, and risk requirements;

(C) is consistent with international obligations of the United States; and

(D) is approved by the Secretary of Defense or the designee of the Secretary of Defense.

(2) EXCEPTION TO REQUIREMENT THAT CERTIFICATION BE TRANSMITTED 30 DAYS BEFORE CONVERSION.—The requirement under paragraph (1) that the certification described in that paragraph must be transmitted at least 30 days before conversion of the missile shall not apply if the Secretary of Defense determines that compliance with that requirement would be inconsistent with meeting immediate national security requirements.

(c) MISSILES REFERRED TO.—The missiles referred to in this section are missiles owned by the United States that—

(1) were formerly used by the Department of Defense for national defense purposes as intercontinental ballistic missiles; and

(2) have been declared excess to United States national defense needs and are in compliance with international obligations of the United States.

## CHAPTER 503—COMMERCIAL REUSABLE IN-SPACE TRANSPORTATION

Sec.

50301. Definitions.

50302. Loan guarantees for production of commercial reusable in-space transportation.

### § 50301. Definitions

In this chapter:

(1) COMMERCIAL PROVIDER.—The term “commercial provider” means any person or entity providing commercial reusable in-orbit space transportation services or systems, primary control of which is held by persons other than the Federal Government, a State or local government, or a foreign government.

(2) IN-SPACE TRANSPORTATION SERVICES.—The term “in-space transportation services” means operations and activities involved in the direct transportation or attempted transportation of a payload or object from one orbit to another by means of an in-space transportation vehicle.

(3) IN-SPACE TRANSPORTATION SYSTEM.—The term “in-space transportation system” means the space and ground elements,

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including in-space transportation vehicles and support space systems, and ground administration and control facilities and associated equipment, necessary for the provision of in-space transportation services.

(4) **IN-SPACE TRANSPORTATION VEHICLE.**—The term “in-space transportation vehicle” means a vehicle designed—

(A) to be based and operated in space;

(B) to transport various payloads or objects from one orbit to another orbit; and

(C) to be reusable and refueled in space.

(5) **SECRETARY.**—The term “Secretary” means the Secretary of Defense.

(6) **UNITED STATES COMMERCIAL PROVIDER.**—The term “United States commercial provider” means any commercial provider organized under the laws of the United States that is more than 50 percent owned by United States nationals.

**§ 50302. Loan guarantees for production of commercial reusable in-space transportation**

(a) **AUTHORITY TO MAKE LOAN GUARANTEES.**—The Secretary may guarantee loans made to eligible United States commercial providers for purposes of producing commercial reusable in-space transportation services or systems.

(b) **ELIGIBLE UNITED STATES COMMERCIAL PROVIDERS.**—The Secretary shall prescribe requirements for the eligibility of United States commercial providers for loan guarantees under this section. Such requirements shall ensure that eligible providers are financially capable of undertaking a loan guaranteed under this section.

(c) **LIMITATION ON LOANS GUARANTEED.**—The Secretary may not guarantee a loan for a United States commercial provider under this section unless the Secretary determines that credit would not otherwise be reasonably available at the time of the guarantee for the commercial reusable in-space transportation service or system to be produced utilizing the proceeds of the loan.

(d) **CREDIT SUBSIDY.**—

(1) **COLLECTION REQUIRED.**—The Secretary shall collect from each United States commercial provider receiving a loan guarantee under this section an amount equal to the amount, as determined by the Secretary, to cover the cost, as defined in section 502(5) of the Federal Credit Reform Act of 1990 (2 U.S.C. 661a(5)), of the loan guarantee.

(2) **PERIODIC DISBURSEMENTS.**—In the case of a loan guarantee in which proceeds of the loan are disbursed over time, the Secretary shall collect the amount required under this subsection on a pro rata basis, as determined by the Secretary, at the time of each disbursement.

(e) **OTHER TERMS AND CONDITIONS.**—

(1) **PROHIBITION ON SUBORDINATION.**—A loan guaranteed under this section may not be subordinated to another debt contracted by the United States commercial provider concerned, or to any other claims against such provider.

(2) **RESTRICTION ON INCOME.**—A loan guaranteed under this section may not—

(A) provide income which is excluded from gross income for purposes of chapter 1 of the Internal Revenue Code of 1986 (26 U.S.C. 1 et seq.); or

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(B) provide significant collateral or security, as determined by the Secretary, for other obligations the income from which is so excluded.

(3) TREATMENT OF GUARANTEE.—The guarantee of a loan under this section shall be conclusive evidence of the following:

(A) That the guarantee has been properly obtained.

(B) That the loan qualifies for the guarantee.

(C) That, but for fraud or material misrepresentation by the holder of the loan, the guarantee is valid, legal, and enforceable.

(4) OTHER TERMS AND CONDITIONS.—The Secretary may establish any other terms and conditions for a guarantee of a loan under this section as the Secretary considers appropriate to protect the financial interests of the United States.

(f) ENFORCEMENT OF RIGHTS.—

(1) IN GENERAL.—The Attorney General may take any action the Attorney General considers appropriate to enforce any right accruing to the United States under a loan guarantee under this section.

(2) FORBEARANCE.—The Attorney General may, with the approval of the parties concerned, forbear from enforcing any right of the United States under a loan guaranteed under this section for the benefit of a United States commercial provider if such forbearance will not result in any cost, as defined in section 502(5) of the Federal Credit Reform Act of 1990 (2 U.S.C. 661a(5)), to the United States.

(3) UTILIZATION OF PROPERTY.—Notwithstanding any other provision of law and subject to the terms of a loan guaranteed under this section, upon the default of a United States commercial provider under the loan, the Secretary may, at the election of the Secretary—

(A) assume control of the physical asset financed by the loan; and

(B) complete, recondition, reconstruct, renovate, repair, maintain, operate, or sell the physical asset.

(g) CREDIT INSTRUMENTS.—

(1) AUTHORITY TO ISSUE INSTRUMENTS.—Notwithstanding any other provision of law, the Secretary may, subject to such terms and conditions as the Secretary considers appropriate, issue credit instruments to United States commercial providers of in-space transportation services or systems, with the aggregate cost (as determined under the provisions of the Federal Credit Reform Act of 1990 (2 U.S.C. 661 et seq.)) of such instruments not to exceed \$1,500,000,000, but only to the extent that new budget authority to cover such costs is provided in subsequent appropriations Acts or authority is otherwise provided in subsequent appropriations Acts.

(2) CREDIT SUBSIDY.—The Secretary shall provide a credit subsidy for any credit instrument issued under this subsection in accordance with the provisions of the Federal Credit Reform Act of 1990 (2 U.S.C. 661 et seq.).

(3) CONSTRUCTION.—The eligibility of a United States commercial provider of in-space transportation services or systems for a credit instrument under this subsection is in addition to any eligibility of such provider for a loan guarantee under other provisions of this section.

**CHAPTER 505—COMMERCIAL SPACE COMPETITIVENESS**

Sec.	
50501.	Definitions.
50502.	Launch voucher demonstration program.
50503.	Anchor tenancy and termination liability.
50504.	Use of Government facilities.
50505.	Test facilities.
50506.	Commercial Space Achievement Award.

**§ 50501. Definitions**

In this chapter:

(1) **AGENCY.**—The term “agency” means an executive agency as defined in section 105 of title 5.

(2) **ANCHOR TENANCY.**—The term “anchor tenancy” means an arrangement in which the United States Government agrees to procure sufficient quantities of a commercial space product or service needed to meet Government mission requirements so that a commercial venture is made viable.

(3) **COMMERCIAL.**—The term “commercial” means having—  
 (A) private capital at risk; and  
 (B) primary financial and management responsibility for the activity reside with the private sector.

(4) **COST EFFECTIVE.**—The term “cost effective” means costing no more than the available alternatives, determined by a comparison of all related direct and indirect costs including, in the case of Government costs, applicable Government labor and overhead costs as well as contractor charges, and taking into account the ability of each alternative to accommodate mission requirements as well as the related factors of risk, reliability, schedule, and technical performance.

(5) **LAUNCH.**—The term “launch” means to place, or attempt to place, a launch vehicle and its payload, if any, in a suborbital trajectory, in Earth orbit in outer space, or otherwise in outer space.

(6) **LAUNCH SERVICES.**—The term “launch services” means activities involved in the preparation of a launch vehicle and its payload for launch and the conduct of a launch.

(7) **LAUNCH SUPPORT FACILITIES.**—The term “launch support facilities” means facilities located at launch sites or launch ranges that are required to support launch activities, including launch vehicle assembly, launch vehicle operations and control, communications, flight safety functions, and payload operations, control, and processing.

(8) **LAUNCH VEHICLE.**—The term “launch vehicle” means any vehicle constructed for the purpose of operating in or placing a payload in outer space or in suborbital trajectories, and includes components of that vehicle.

(9) **PAYLOAD.**—The term “payload” means an object which a person undertakes to launch, and includes subcomponents of the launch vehicle specifically designed or adapted for that object.

(10) **PAYLOAD INTEGRATION SERVICES.**—The term “payload integration services” means activities involved in integrating multiple payloads into a single payload for launch or integrating a payload with a launch vehicle.

(11) **SPACE RECOVERY SUPPORT FACILITIES.**—The term “space recovery support facilities” means facilities required to support activities related to the recovery of payloads returned from

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space to a space recovery site, including operations and control, communications, flight safety functions, and payload processing.

(12) **SPACE TRANSPORTATION INFRASTRUCTURE.**—The term “space transportation infrastructure” means facilities, associated equipment, and real property (including launch sites, launch support facilities, space recovery sites, and space recovery support facilities) required to perform launch or space recovery activities.

(13) **STATE.**—The term “State” means the several States, the District of Columbia, Puerto Rico, American Samoa, the United States Virgin Islands, Guam, the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.

(14) **UNITED STATES.**—The term “United States” means the States, collectively.

### **§ 50502. Launch voucher demonstration program**

(a) **REQUIREMENT TO ESTABLISH PROGRAM.**—The Administrator shall establish a demonstration program to award vouchers for the payment of commercial launch services and payload integration services for the purpose of launching payloads funded by the Administration.

(b) **AWARD OF VOUCHERS.**—The Administrator shall award vouchers under subsection (a) to appropriate individuals as a part of grants administered by the Administration for the launch of—

- (1) payloads to be placed in suborbital trajectories; and
- (2) small payloads to be placed in orbit.

(c) **ASSISTANCE.**—The Administrator may provide voucher award recipients with such assistance (including contract formulation and technical support during the proposal evaluation) as may be necessary to ensure the purchase of cost effective and reasonably reliable commercial launch services and payload integration services.

### **§ 50503. Anchor tenancy and termination liability**

(a) **ANCHOR TENANCY CONTRACTS.**—Subject to appropriations, the Administrator or the Administrator of the National Oceanic and Atmospheric Administration may enter into multiyear anchor tenancy contracts for the purchase of a good or service if the appropriate Administrator determines that—

- (1) the good or service meets the mission requirements of the Administration or the National Oceanic and Atmospheric Administration, as appropriate;
- (2) the commercially procured good or service is cost effective;
- (3) the good or service is procured through a competitive process;
- (4) existing or potential customers for the good or service other than the United States Government have been specifically identified;
- (5) the long-term viability of the venture is not dependent upon a continued Government market or other nonreimbursable Government support; and
- (6) private capital is at risk in the venture.

(b) **TERMINATION LIABILITY.**—

- (1) **IN GENERAL.**—Contracts entered into under subsection (a) may provide for the payment of termination liability in

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the event that the Government terminates such contracts for its convenience.

(2) **FIXED SCHEDULE OF PAYMENTS AND LIMITATION ON LIABILITY.**—Contracts that provide for the payment of termination liability, as described in paragraph (1), shall include a fixed schedule of such termination liability payments. Liability under such contracts shall not exceed the total payments which the Government would have made after the date of termination to purchase the good or service if the contract were not terminated.

(3) **USE OF FUNDS.**—Subject to appropriations, funds available for such termination liability payments may be used for purchase of the good or service upon successful delivery of the good or service pursuant to the contract. In such case, sufficient funds shall remain available to cover any remaining termination liability.

(c) **LIMITATIONS.**—

(1) **DURATION.**—Contracts entered into under this section shall not exceed 10 years in duration.

(2) **FIXED PRICE.**—Such contracts shall provide for delivery of the good or service on a firm, fixed price basis.

(3) **PERFORMANCE SPECIFICATIONS.**—To the extent practicable, reasonable performance specifications shall be used to define technical requirements in such contracts.

(4) **FAILURE TO PERFORM.**—In any such contract, the appropriate Administrator shall reserve the right to completely or partially terminate the contract without payment of such termination liability because of the contractor's actual or anticipated failure to perform its contractual obligations.

**§ 50504. Use of Government facilities**

(a) **AUTHORITY.**—

(1) **IN GENERAL.**—Federal agencies, including the Administration and the Department of Defense, may allow non-Federal entities to use their space-related facilities on a reimbursable basis if the Administrator, the Secretary of Defense, or the appropriate agency head determines that—

(A) the facilities will be used to support commercial space activities;

(B) such use can be supported by existing or planned Federal resources;

(C) such use is compatible with Federal activities;

(D) equivalent commercial services are not available on reasonable terms; and

(E) such use is consistent with public safety, national security, and international treaty obligations.

(2) **CONSULTATION.**—In carrying out paragraph (1)(E), each agency head shall consult with appropriate Federal officials.

(b) **REIMBURSEMENT PAYMENT.**—

(1) **AMOUNT.**—The reimbursement referred to in subsection (a) may be an amount equal to the direct costs (including salaries of United States civilian and contractor personnel) incurred by the United States as a result of the use of such facilities by the private sector. For the purposes of this paragraph, the term “direct costs” means the actual costs that can be unambiguously associated with such use, and would

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not be borne by the United States Government in the absence of such use.

(2) CREDIT TO APPROPRIATION.—The amount of any payment received by the United States for use of facilities under this subsection shall be credited to the appropriation from which the cost of providing such facilities was paid.

#### § 50505. Test facilities

(a) CHARGES.—The Administrator shall establish a policy of charging users of the Administration's test facilities for the costs associated with their tests at a level that is competitive with alternative test facilities. The Administrator shall not implement a policy of seeking full cost recovery for a facility until at least 30 days after transmitting a notice to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(b) FUNDING ACCOUNT.—In planning and budgeting, the Administrator shall establish a funding account that shall be used for all test facilities. The account shall be sufficient to maintain the viability of test facilities during periods of low utilization.

#### § 50506. Commercial Space Achievement Award

(a) ESTABLISHMENT.—There is established a Commercial Space Achievement Award. The award shall consist of a medal, which shall be of such design and materials and bear such inscriptions as determined by the Secretary of Commerce. A cash prize may also be awarded if funding for the prize is available under subsection (d).

(b) CRITERIA FOR AWARD.—The Secretary of Commerce shall periodically make awards under this section to individuals, corporations, corporate divisions, or corporate subsidiaries substantially engaged in commercial space activities that in the opinion of the Secretary of Commerce best meet the following criteria:

(1) NON-GOVERNMENTAL REVENUE.—For corporate entities, at least half of the revenues from the space-related activities of the corporation, division, or subsidiary is derived from sources other than the United States Government.

(2) SUBSTANTIAL CONTRIBUTION.—The activities and achievements of the individual, corporation, division, or subsidiary have substantially contributed to the United States gross national product and the stature of United States industry in international markets, with due consideration for both the economic magnitude and the technical quality of the activities and achievements.

(3) SUBSTANTIAL ADVANCEMENT OF TECHNOLOGY.—The individual, corporation, division, or subsidiary has substantially advanced space technology and space applications directly related to commercial space activities.

(c) LIMITATIONS.—No individual or corporate entity may receive an award under this section more than once every 5 years.

(d) FUNDING FOR AWARD.—The Secretary of Commerce may seek and accept gifts of money from public and private sources for the purpose of making cash prize awards under this section. Such money may be used only for that purpose, and only such money may be used for that purpose. The Secretary of Commerce shall make publicly available an itemized list of the sources of such funding.

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**CHAPTER 507—OFFICE OF SPACE COMMERCIALIZATION**

Sec.

50701. Definition of Office.

50702. Establishment.

50703. Annual report.

**§ 50701. Definition of Office**

In this chapter, the term “Office” means the Office of Space Commercialization established in section 50702 of this title.

**§ 50702. Establishment**

(a) **IN GENERAL.**—There is established within the Department of Commerce an Office of Space Commercialization.

(b) **DIRECTOR.**—The Office shall be headed by a Director, who shall be a senior executive and shall be compensated at a level in the Senior Executive Service under section 5382 of title 5 as determined by the Secretary of Commerce.

(c) **FUNCTIONS OF OFFICE.**—The Office shall be the principal unit for the coordination of space-related issues, programs, and initiatives within the Department of Commerce.

(d) **DUTIES OF DIRECTOR.**—The primary responsibilities of the Director in carrying out the functions of the Office shall include—

(1) promoting commercial provider investment in space activities by collecting, analyzing, and disseminating information on space markets, and conducting workshops and seminars to increase awareness of commercial space opportunities;

(2) assisting United States commercial providers in the efforts of those providers to conduct business with the United States Government;

(3) acting as an industry advocate within the executive branch of the Federal Government to ensure that the Federal Government meets the space-related requirements of the Federal Government, to the fullest extent feasible, using commercially available space goods and services;

(4) ensuring that the United States Government does not compete with United States commercial providers in the provision of space hardware and services otherwise available from United States commercial providers;

(5) promoting the export of space-related goods and services;

(6) representing the Department of Commerce in the development of United States policies and in negotiations with foreign countries to ensure free and fair trade internationally in the area of space commerce; and

(7) seeking the removal of legal, policy, and institutional impediments to space commerce.

**§ 50703. Annual report**

The Secretary of Commerce shall submit an annual report on the activities of the Office, including planned programs and expenditures, to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology of the House of Representatives.

**Subtitle VI—Earth Observations**

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**CHAPTER 601—LAND REMOTE SENSING POLICY**

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## SUBCHAPTER I—GENERAL

**§ 60101. Definitions**

In this chapter:

(1) **COST OF FULFILLING USER REQUESTS.**—The term “cost of fulfilling user requests” means the incremental costs associated with providing product generation, reproduction, and distribution of unenhanced data in response to user requests and shall not include any acquisition, amortization, or depreciation of capital assets originally paid for by the United States Government or other costs not specifically attributable to fulfilling user requests.

(2) **DATA CONTINUITY.**—The term “data continuity” means the continued acquisition and availability of unenhanced data which are, from the point of view of the user—

(A) sufficiently consistent (in terms of acquisition geometry, coverage characteristics, and spectral characteristics) with previous Landsat data to allow comparisons for global and regional change detection and characterization; and

(B) compatible with such data and with methods used to receive and process such data.

(3) **DATA PREPROCESSING.**—The term “data preprocessing”—

(A) may include—

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- (i) rectification of system and sensor distortions in land remote sensing data as it is received directly from the satellite in preparation for delivery to a user;
  - (ii) registration of such data with respect to features of the Earth; and
  - (iii) calibration of spectral response with respect to such data; but
- (B) does not include conclusions, manipulations, or calculations derived from such data, or a combination of such data with other data.
- (4) **LAND REMOTE SENSING.**—The term “land remote sensing” means the collection of data which can be processed into imagery of surface features of the Earth from an unclassified satellite or satellites, other than an operational United States Government weather satellite.
- (5) **LANDSAT PROGRAM MANAGEMENT.**—The term “Landsat Program Management” means the integrated program management structure—
- (A) established by, and responsible to, the Administrator and the Secretary of Defense pursuant to section 60111(a) of this title; and
  - (B) consisting of appropriate officers and employees of the Administration, the Department of Defense, and any other United States Government agencies the President designates as responsible for the Landsat program.
- (6) **LANDSAT SYSTEM.**—The term “Landsat system” means Landsats 1, 2, 3, 4, 5, and 6, and any follow-on land remote sensing system operated and owned by the United States Government, along with any related ground equipment, systems, and facilities owned by the United States Government.
- (7) **LANDSAT 6 CONTRACTOR.**—The term “Landsat 6 contractor” means the private sector entity which was awarded the contract for spacecraft construction, operations, and data marketing rights for the Landsat 6 spacecraft.
- (8) **LANDSAT 7.**—The term “Landsat 7” means the follow-on satellite to Landsat 6.
- (9) **NATIONAL SATELLITE LAND REMOTE SENSING DATA ARCHIVE.**—The term “National Satellite Land Remote Sensing Data Archive” means the archive established by the Secretary of the Interior pursuant to the archival responsibilities defined in section 60142 of this title.
- (10) **NONCOMMERCIAL PURPOSES.**—The term “noncommercial purposes” means activities undertaken by individuals or entities on the condition, upon receipt of unenhanced data, that—
- (A) such data shall not be used in connection with any bid for a commercial contract, development of a commercial product, or any other non-United States Government activity that is expected, or has the potential, to be profit-making;
  - (B) the results of such activities are disclosed in a timely and complete fashion in the open technical literature or other method of public release, except when such disclosure by the United States Government or its contractors would adversely affect the national security or foreign policy of the United States or violate a provision of law or regulation; and

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(C) such data shall not be distributed in competition with unenhanced data provided by the Landsat 6 contractor.

(11) SECRETARY.—The term “Secretary” means the Secretary of Commerce.

(12) UNENHANCED DATA.—The term “unenhanced data” means land remote sensing signals or imagery products that are unprocessed or subject only to data preprocessing.

(13) UNITED STATES GOVERNMENT AND ITS AFFILIATED USERS.—The term “United States Government and its affiliated users” means—

(A) United States Government agencies;

(B) researchers involved with the United States Global Change Research Program and its international counterpart programs; and

(C) other researchers and international entities that have signed with the United States Government a cooperative agreement involving the use of Landsat data for non-commercial purposes.

## SUBCHAPTER II—LANDSAT

### § 60111. Landsat Program Management

(a) ESTABLISHMENT.—The Administrator and the Secretary of Defense shall be responsible for management of the Landsat program. Such responsibility shall be carried out by establishing an integrated program management structure for the Landsat system.

(b) MANAGEMENT PLAN.—The Administrator, the Secretary of Defense, and any other United States Government official the President designates as responsible for part of the Landsat program shall establish, through a management plan, the roles, responsibilities, and funding expectations for the Landsat program of the appropriate United States Government agencies. The management plan shall—

(1) specify that the fundamental goal of the Landsat Program Management is the continuity of unenhanced Landsat data through the acquisition and operation of a Landsat 7 satellite as quickly as practicable which is, at a minimum, functionally equivalent to the Landsat 6 satellite, with the addition of a tracking and data relay satellite communications capability;

(2) include a baseline funding profile that—

(A) is mutually acceptable to the Administration and the Department of Defense for the period covering the development and operation of Landsat 7; and

(B) provides for total funding responsibility of the Administration and the Department of Defense, respectively, to be approximately equal to the funding responsibility of the other as spread across the development and operational life of Landsat 7;

(3) specify that any improvements over the Landsat 6 functional equivalent capability for Landsat 7 will be funded by a specific sponsoring agency or agencies, in a manner agreed to by the Landsat Program Management, if the required funding exceeds the baseline funding profile required by paragraph (2), and that additional improvements will be sought only if the improvements will not jeopardize data continuity; and

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(4) provide for a technology demonstration program whose objective shall be the demonstration of advanced land remote sensing technologies that may potentially yield a system which is less expensive to build and operate, and more responsive to data users, than is the current Landsat system.

(c) RESPONSIBILITIES.—The Landsat Program Management shall be responsible for—

(1) Landsat 7 procurement, launch, and operations;

(2) ensuring that the operation of the Landsat system is responsive to the broad interests of the civilian, national security, commercial, and foreign users of the Landsat system;

(3) ensuring that all unenhanced Landsat data remain unclassified and that, except as provided in subsections (a) and (b) of section 60146 of this title, no restrictions are placed on the availability of unenhanced data;

(4) ensuring that land remote sensing data of high priority locations will be acquired by the Landsat 7 system as required to meet the needs of the United States Global Change Research Program, as established in the Global Change Research Act of 1990 (15 U.S.C. 2921 et seq.), and to meet the needs of national security users;

(5) Landsat data responsibilities pursuant to this chapter;

(6) oversight of Landsat contracts entered into under sections 102 and 103 of the Land Remote Sensing Policy Act of 1992 (Public Law 102-555, 106 Stat. 4168);

(7) coordination of a technology demonstration program pursuant to section 60133 of this title; and

(8) ensuring that copies of data acquired by the Landsat system are provided to the National Satellite Land Remote Sensing Data Archive.

(d) AUTHORITY TO CONTRACT.—The Landsat Program Management may, subject to appropriations and only under the existing contract authority of the United States Government agencies that compose the Landsat Program Management, enter into contracts with the private sector for services such as satellite operations and data preprocessing.

(e) LANDSAT ADVISORY PROCESS.—

(1) ADVICE AND COMMENTS.—The Landsat Program Management shall seek impartial advice and comments regarding the status, effectiveness, and operation of the Landsat system, using existing advisory committees and other appropriate mechanisms. Such advice shall be sought from individuals who represent—

(A) a broad range of perspectives on basic and applied science and operational needs with respect to land remote sensing data;

(B) the full spectrum of users of Landsat data, including representatives from United States Government agencies, State and local government agencies, academic institutions, nonprofit organizations, value-added companies, the agricultural, mineral extraction, and other user industries, and the public; and

(C) a broad diversity of age groups, sexes, and races.

(2) REPORTS.—The Landsat Program Management shall prepare and submit biennially a report to Congress which—

(A) reports the public comments received pursuant to paragraph (1); and

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(B) includes—

- (i) a response to the public comments received pursuant to paragraph (1);
- (ii) information on the volume of use, by category, of data from the Landsat system; and
- (iii) any recommendations for policy or programmatic changes to improve the utility and operation of the Landsat system.

**§ 60112. Transfer of Landsat 6 program responsibilities**

The responsibilities of the Secretary with respect to Landsat 6 shall be transferred to the Landsat Program Management, as agreed to between the Secretary and the Landsat Program Management, pursuant to section 60111 of this title.

**§ 60113. Data policy for Landsat 7**

(a) LANDSAT 7 DATA POLICY.—The Landsat Program Management, in consultation with other appropriate United States Government agencies, shall develop a data policy for Landsat 7 which should—

- (1) ensure that unenhanced data are available to all users at the cost of fulfilling user requests;
- (2) ensure timely and dependable delivery of unenhanced data to the full spectrum of civilian, national security, commercial, and foreign users and the National Satellite Land Remote Sensing Data Archive;
- (3) ensure that the United States retains ownership of all unenhanced data generated by Landsat 7;
- (4) support the development of the commercial market for remote sensing data;
- (5) ensure that the provision of commercial value-added services based on remote sensing data remains exclusively the function of the private sector; and
- (6) to the extent possible, ensure that the data distribution system for Landsat 7 is compatible with the Earth Observing System Data and Information System.

(b) ADDITIONAL DATA POLICY CONSIDERATIONS.—In addition, the data policy for Landsat 7 may provide for—

- (1) United States private sector entities to operate ground receiving stations in the United States for Landsat 7 data;
- (2) other means for direct access by private sector entities to unenhanced data from Landsat 7; and
- (3) the United States Government to charge a per image fee, license fee, or other such fee to entities operating ground receiving stations or distributing Landsat 7 data.

SUBCHAPTER III—LICENSING OF PRIVATE REMOTE  
SENSING SPACE SYSTEMS

**§ 60121. General licensing authority**

(a) LICENSING AUTHORITY OF SECRETARY.—

- (1) IN GENERAL.—In consultation with other appropriate United States Government agencies, the Secretary is authorized to license private sector parties to operate private remote sensing space systems for such period as the Secretary may specify and in accordance with the provisions of this subchapter.

(2) LIMITATION WITH RESPECT TO SYSTEM USED FOR OTHER PURPOSES.—In the case of a private space system that is used for remote sensing and other purposes, the authority of the Secretary under this subchapter shall be limited only to the remote sensing operations of such space system.

(b) COMPLIANCE WITH LAW, REGULATIONS, INTERNATIONAL OBLIGATIONS, AND NATIONAL SECURITY.—

(1) IN GENERAL.—No license shall be granted by the Secretary unless the Secretary determines in writing that the applicant will comply with the requirements of this chapter, any regulations issued pursuant to this chapter, and any applicable international obligations and national security concerns of the United States.

(2) LIST OF REQUIREMENTS FOR COMPLETE APPLICATION.—The Secretary shall publish in the Federal Register a complete and specific list of all information required to comprise a complete application for a license under this subchapter. An application shall be considered complete when the applicant has provided all information required by the list most recently published in the Federal Register before the date the application was first submitted. Unless the Secretary has, within 30 days after receipt of an application, notified the applicant of information necessary to complete an application, the Secretary may not deny the application on the basis of the absence of any such information.

(c) DEADLINE FOR ACTION ON APPLICATION.—The Secretary shall review any application and make a determination thereon within 120 days of the receipt of such application. If final action has not occurred within such time, the Secretary shall inform the applicant of any pending issues and of actions required to resolve them.

(d) IMPROPER BASIS FOR DENIAL.—The Secretary shall not deny such license in order to protect any existing licensee from competition.

(e) REQUIREMENT TO PROVIDE UNENHANCED DATA.—

(1) DESIGNATION OF DATA.—The Secretary, in consultation with other appropriate United States Government agencies and pursuant to paragraph (2), shall designate in a license issued pursuant to this subchapter any unenhanced data required to be provided by the licensee under section 60122(b)(3) of this title.

(2) PRELIMINARY DETERMINATION.—The Secretary shall make a designation under paragraph (1) after determining that—

(A) such data are generated by a system for which all or a substantial part of the development, fabrication, launch, or operations costs have been or will be directly funded by the United States Government; or

(B) it is in the interest of the United States to require such data to be provided by the licensee consistent with section 60122(b)(3) of this title, after considering the impact on the licensee and the importance of promoting widespread access to remote sensing data from United States and foreign systems.

(3) CONSISTENCY WITH CONTRACT OR OTHER ARRANGEMENT.—A designation made by the Secretary under paragraph (1) shall not be inconsistent with any contract or other arrangement

entered into between a United States Government agency and the licensee.

**§ 60122. Conditions for operation**

(a) LICENSE REQUIRED FOR OPERATION.—No person that is subject to the jurisdiction or control of the United States may, directly or through any subsidiary or affiliate, operate any private remote sensing space system without a license pursuant to section 60121 of this title.

(b) LICENSING REQUIREMENTS.—Any license issued pursuant to this subchapter shall specify that the licensee shall comply with all of the requirements of this chapter and shall—

(1) operate the system in such manner as to preserve the national security of the United States and to observe the international obligations of the United States in accordance with section 60146 of this title;

(2) make available to the government of any country (including the United States) unenhanced data collected by the system concerning the territory under the jurisdiction of such government as soon as such data are available and on reasonable terms and conditions;

(3) make unenhanced data designated by the Secretary in the license pursuant to section 60121(e) of this title available in accordance with section 60141 of this title;

(4) upon termination of operations under the license, make disposition of any satellites in space in a manner satisfactory to the President;

(5) furnish the Secretary with complete orbit and data collection characteristics of the system, and inform the Secretary immediately of any deviation; and

(6) notify the Secretary of any significant or substantial agreement the licensee intends to enter with a foreign nation, entity, or consortium involving foreign nations or entities.

(c) ADDITIONAL LICENSING REQUIREMENTS FOR LANDSAT 6 CONTRACTOR.—In addition to the requirements of subsection (b), any license issued pursuant to this subchapter to the Landsat 6 contractor shall specify that the Landsat 6 contractor shall—

(1) notify the Secretary of any value added activities (as defined by the Secretary by regulation) that will be conducted by the Landsat 6 contractor or by a subsidiary or affiliate; and

(2) if such activities are to be conducted, provide the Secretary with a plan for compliance with section 60141 of this title.

**§ 60123. Administrative authority of Secretary**

(a) FUNCTIONS.—In order to carry out the responsibilities specified in this subchapter, the Secretary may—

(1) grant, condition, or transfer licenses under this chapter;

(2) seek an order of injunction or similar judicial determination from a district court of the United States with personal jurisdiction over the licensee to terminate, modify, or suspend licenses under this subchapter and to terminate licensed operations on an immediate basis, if the Secretary determines that the licensee has substantially failed to comply with any provisions of this chapter, with any terms, conditions, or restrictions of such license, or with any international obligations or national security concerns of the United States;

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(3) provide penalties for noncompliance with the requirements of licenses or regulations issued under this subchapter, including civil penalties not to exceed \$10,000 (each day of operation in violation of such licenses or regulations constituting a separate violation);

(4) compromise, modify, or remit any such civil penalty;

(5) issue subpoenas for any materials, documents, or records, or for the attendance and testimony of witnesses for the purpose of conducting a hearing under this section;

(6) seize any object, record, or report pursuant to a warrant from a magistrate based on a showing of probable cause to believe that such object, record, or report was used, is being used, or is likely to be used in violation of this chapter or the requirements of a license or regulation issued thereunder; and

(7) make investigations and inquiries and administer to or take from any person an oath, affirmation, or affidavit concerning any matter relating to the enforcement of this chapter.

(b) REVIEW OF AGENCY ACTION.—Any applicant or licensee that makes a timely request for review of an adverse action pursuant to paragraph (1), (3), (5), or (6) of subsection (a) shall be entitled to adjudication by the Secretary on the record after an opportunity for any agency hearing with respect to such adverse action. Any final action by the Secretary under this subsection shall be subject to judicial review under chapter 7 of title 5.

#### § 60124. Regulatory authority of Secretary

The Secretary may issue regulations to carry out this subchapter. Such regulations shall be promulgated only after public notice and comment in accordance with the provisions of section 553 of title 5.

#### § 60125. Agency activities

(a) LICENSE APPLICATION AND ISSUANCE.—A private sector party may apply for a license to operate a private remote sensing space system which utilizes, on a space-available basis, a civilian United States Government satellite or vehicle as a platform for such system. The Secretary, pursuant to this subchapter, may license such system if it meets all conditions of this subchapter and—

(1) the system operator agrees to reimburse the Government in a timely manner for all related costs incurred with respect to such utilization, including a reasonable and proportionate share of fixed, platform, data transmission, and launch costs; and

(2) such utilization would not interfere with or otherwise compromise intended civilian Government missions, as determined by the agency responsible for such civilian platform.

(b) ASSISTANCE.—The Secretary may offer assistance to private sector parties in finding appropriate opportunities for such utilization.

(c) AGREEMENTS.—To the extent provided in advance by appropriation Acts, any United States Government agency may enter into agreements for such utilization if such agreements are consistent with such agency's mission and statutory authority, and if such remote sensing space system is licensed by the Secretary before commencing operation.

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(d) **APPLICABILITY.**—This section does not apply to activities carried out under subchapter IV.

(e) **EFFECT ON FCC AUTHORITY.**—Nothing in this subchapter shall affect the authority of the Federal Communications Commission pursuant to the Communications Act of 1934 (47 U.S.C. 151 et seq.).

#### SUBCHAPTER IV—RESEARCH, DEVELOPMENT, AND DEMONSTRATION

##### § 60131. Continued Federal research and development

(a) **ROLES OF ADMINISTRATION AND DEPARTMENT OF DEFENSE.**—

(1) **IN GENERAL.**—The Administrator and the Secretary of Defense are directed to continue and to enhance programs of remote sensing research and development.

(2) **ADMINISTRATION ACTIVITIES AUTHORIZED AND ENCOURAGED.**—The Administrator is authorized and encouraged to—

(A) conduct experimental space remote sensing programs (including applications demonstration programs and basic research at universities);

(B) develop remote sensing technologies and techniques, including those needed for monitoring the Earth and its environment; and

(C) conduct such research and development in cooperation with other United States Government agencies and with public and private research entities (including private industry, universities, non-profit organizations, State and local governments, foreign governments, and international organizations) and to enter into arrangements (including joint ventures) which will foster such cooperation.

(b) **ROLES OF DEPARTMENT OF AGRICULTURE AND DEPARTMENT OF THE INTERIOR.**—

(1) **IN GENERAL.**—In order to enhance the ability of the United States to manage and utilize its renewable and nonrenewable resources, the Secretary of Agriculture and the Secretary of the Interior are authorized and encouraged to conduct programs of research and development in the applications of remote sensing using funds appropriated for such purposes.

(2) **ACTIVITIES THAT MAY BE INCLUDED.**—Such programs may include basic research at universities, demonstrations of applications, and cooperative activities involving other Government agencies, private sector parties, and foreign and international organizations.

(c) **ROLE OF OTHER FEDERAL AGENCIES.**—Other United States Government agencies are authorized and encouraged to conduct research and development on the use of remote sensing in the fulfillment of their authorized missions, using funds appropriated for such purposes.

##### § 60132. Availability of federally gathered unenhanced data

(a) **IN GENERAL.**—All unenhanced land remote sensing data gathered and owned by the United States Government, including unenhanced data gathered under the technology demonstration program carried out pursuant to section 60133 of this title, shall be made available to users in a timely fashion.

(b) **PROTECTION FOR COMMERCIAL DATA DISTRIBUTOR.**—The President shall seek to ensure that unenhanced data gathered under

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the technology demonstration program carried out pursuant to section 60133 of this title shall, to the extent practicable, be made available on terms that would not adversely affect the commercial market for unenhanced data gathered by the Landsat 6 spacecraft.

**§ 60133. Technology demonstration program**

(a) ESTABLISHMENT.—As a fundamental component of a national land remote sensing strategy, the President shall establish, through appropriate United States Government agencies, a technology demonstration program. The goals of the program shall be to—

(1) seek to launch advanced land remote sensing system components within 5 years after October 28, 1992;

(2) demonstrate within such 5-year period advanced sensor capabilities suitable for use in the anticipated land remote sensing program; and

(3) demonstrate within such 5-year period an advanced land remote sensing system design that could be less expensive to procure and operate than the Landsat system projected to be in operation through the year 2000, and that therefore holds greater potential for private sector investment and control.

(b) EXECUTION OF PROGRAM.—In executing the technology demonstration program, the President shall seek to apply technologies associated with United States National Technical Means of intelligence gathering, to the extent that such technologies are appropriate for the technology demonstration and can be declassified for such purposes without causing adverse harm to United States national security interests.

(c) BROAD APPLICATION.—To the greatest extent practicable, the technology demonstration program established under subsection (a) shall be designed to be responsive to the broad civilian, national security, commercial, and foreign policy needs of the United States.

(d) PRIVATE SECTOR FUNDING.—The technology demonstration program under this section may be carried out in part with private sector funding.

(e) LANDSAT PROGRAM MANAGEMENT COORDINATION.—The Landsat Program Management shall have a coordinating role in the technology demonstration program carried out under this section.

**§ 60134. Preference for private sector land remote sensing system**

(a) IN GENERAL.—If a successor land remote sensing system to Landsat 7 can be funded and managed by the private sector while still achieving the goals stated in subsection (b) without jeopardizing the domestic, national security, and foreign policy interests of the United States, preference should be given to the development of such a system by the private sector without competition from the United States Government.

(b) GOALS.—The goals referred to in subsection (a) are—

(1) to encourage the development, launch, and operation of a land remote sensing system that adequately serves the civilian, national security, commercial, and foreign policy interests of the United States;

(2) to encourage the development, launch, and operation of a land remote sensing system that maintains data continuity with the Landsat system; and

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(3) to incorporate system enhancements, including any such enhancements developed under the technology demonstration program under section 60133 of this title, which may potentially yield a system that is less expensive to build and operate, and more responsive to data users, than is the Landsat system otherwise projected to be in operation in the future.

## SUBCHAPTER V—GENERAL PROVISIONS

**§ 60141. Nondiscriminatory data availability**

(a) IN GENERAL.—Except as provided in subsection (b), any unenhanced data generated by the Landsat system or any other land remote sensing system funded and owned by the United States Government shall be made available to all users without preference, bias, or any other special arrangement (except on the basis of national security concerns pursuant to section 60146 of this title) regarding delivery, format, pricing, or technical considerations which would favor one customer or class of customers over another.

(b) EXCEPTIONS.—Unenhanced data generated by the Landsat system or any other land remote sensing system funded and owned by the United States Government may be made available to the United States Government and its affiliated users at reduced prices, in accordance with this chapter, on the condition that such unenhanced data are used solely for noncommercial purposes.

**§ 60142. Archiving of data**

(a) PUBLIC INTEREST.—It is in the public interest for the United States Government to—

(1) maintain an archive of land remote sensing data for historical, scientific, and technical purposes, including long-term global environmental monitoring;

(2) control the content and scope of the archive; and

(3) ensure the quality, integrity, and continuity of the archive.

(b) ARCHIVING PRACTICES.—The Secretary of the Interior, in consultation with the Landsat Program Management, shall provide for long-term storage, maintenance, and upgrading of a basic, global, land remote sensing data set (hereafter in this section referred to as the “basic data set”) and shall follow reasonable archival practices to ensure proper storage and preservation of the basic data set and timely access for parties requesting data.

(c) DETERMINATION OF CONTENT OF BASIC DATA SET.—In determining the initial content of, or in upgrading, the basic data set, the Secretary of the Interior shall—

(1) use as a baseline the data archived on October 28, 1992;

(2) take into account future technical and scientific developments and needs, paying particular attention to the anticipated data requirements of global environmental change research;

(3) consult with and seek the advice of users and producers of remote sensing data and data products;

(4) consider the need for data which may be duplicative in terms of geographical coverage but which differ in terms of season, spectral bands, resolution, or other relevant factors;

(5) include, as the Secretary of the Interior considers appropriate, unenhanced data generated either by the Landsat system, pursuant to subchapter II, or by licensees under subchapter III;

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(6) include, as the Secretary of the Interior considers appropriate, data collected by foreign ground stations or by foreign remote sensing space systems; and

(7) ensure that the content of the archive is developed in accordance with section 60146 of this title.

(d) PUBLIC DOMAIN.—After the expiration of any exclusive right to sell, or after relinquishment of such right, the data provided to the National Satellite Land Remote Sensing Data Archive shall be in the public domain and shall be made available to requesting parties by the Secretary of the Interior at the cost of fulfilling user requests.

#### **§ 60143. Nonreproduction**

Unenhanced data distributed by any licensee under subchapter III may be sold on the condition that such data will not be reproduced or disseminated by the purchaser for commercial purposes.

#### **§ 60144. Reimbursement for assistance**

The Administrator, the Secretary of Defense, and the heads of other United States Government agencies may provide assistance to land remote sensing system operators under the provisions of this chapter. Substantial assistance shall be reimbursed by the operator, except as otherwise provided by law.

#### **§ 60145. Acquisition of equipment**

The Landsat Program Management may, by means of a competitive process, allow a licensee under subchapter III or any other private party to buy, lease, or otherwise acquire the use of equipment from the Landsat system, when such equipment is no longer needed for the operation of such system or for the sale of data from such system. Officials of other United States Government civilian agencies are authorized and encouraged to cooperate with the Secretary in carrying out this section.

#### **§ 60146. Radio frequency allocation**

(a) APPLICATION TO FEDERAL COMMUNICATIONS COMMISSION.—To the extent required by the Communications Act of 1934 (47 U.S.C. 151 et seq.), an application shall be filed with the Federal Communications Commission for any radio facilities involved with commercial remote sensing space systems licensed under subchapter III.

(b) DEADLINE FOR FCC ACTION.—It is the intent of Congress that the Federal Communications Commission complete the radio licensing process under the Communications Act of 1934 (47 U.S.C. 151 et seq.), upon the application of any private sector party or consortium operator of any commercial land remote sensing space system subject to this chapter, within 120 days of the receipt of an application for such licensing. If final action has not occurred within 120 days of the receipt of such an application, the Federal Communications Commission shall inform the applicant of any pending issues and of actions required to resolve them.

(c) DEVELOPMENT AND CONSTRUCTION OF UNITED STATES SYSTEMS.—Authority shall not be required from the Federal Communications Commission for the development and construction of any United States land remote sensing space system (or component

thereof), other than radio transmitting facilities or components, while any licensing determination is being made.

(d) **CONSISTENCY WITH INTERNATIONAL OBLIGATIONS AND PUBLIC INTEREST.**—Frequency allocations made pursuant to this section by the Federal Communications Commission shall be consistent with international obligations and with the public interest.

#### **§ 60147. Consultation**

(a) **CONSULTATION WITH SECRETARY OF DEFENSE.**—The Secretary and the Landsat Program Management shall consult with the Secretary of Defense on all matters under this chapter affecting national security. The Secretary of Defense shall be responsible for determining those conditions, consistent with this chapter, necessary to meet national security concerns of the United States and for notifying the Secretary and the Landsat Program Management promptly of such conditions.

(b) **CONSULTATION WITH SECRETARY OF STATE.**—

(1) **IN GENERAL.**—The Secretary and the Landsat Program Management shall consult with the Secretary of State on all matters under this chapter affecting international obligations. The Secretary of State shall be responsible for determining those conditions, consistent with this chapter, necessary to meet international obligations and policies of the United States and for notifying promptly the Secretary and the Landsat Program Management of such conditions.

(2) **INTERNATIONAL AID.**—Appropriate United States Government agencies are authorized and encouraged to provide remote sensing data, technology, and training to developing nations as a component of programs of international aid.

(3) **REPORTING DISCRIMINATORY DISTRIBUTION.**—The Secretary of State shall promptly report to the Secretary and Landsat Program Management any instances outside the United States of discriminatory distribution of Landsat data.

(c) **STATUS REPORT.**—The Landsat Program Management shall, as often as necessary, provide to Congress complete and updated information about the status of ongoing operations of the Landsat system, including timely notification of decisions made with respect to the Landsat system in order to meet national security concerns and international obligations and policies of the United States Government.

(d) **REIMBURSEMENTS.**—If, as a result of technical modifications imposed on a licensee under subchapter III on the basis of national security concerns, the Secretary, in consultation with the Secretary of Defense or with other Federal agencies, determines that additional costs will be incurred by the licensee, or that past development costs (including the cost of capital) will not be recovered by the licensee, the Secretary may require the agency or agencies requesting such technical modifications to reimburse the licensee for such additional or development costs, but not for anticipated profits. Reimbursements may cover costs associated with required changes in system performance, but not costs ordinarily associated with doing business abroad.

#### **§ 60148. Enforcement**

(a) **IN GENERAL.**—In order to ensure that unenhanced data from the Landsat system received solely for noncommercial purposes are not used for any commercial purpose, the Secretary (in

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collaboration with private sector entities responsible for the marketing and distribution of unenhanced data generated by the Landsat system) shall develop and implement a system for enforcing this prohibition, in the event that unenhanced data from the Landsat system are made available for noncommercial purposes at a different price than such data are made available for other purposes.

(b) **AUTHORITY OF SECRETARY.**—Subject to subsection (d), the Secretary may impose any of the enforcement mechanisms described in subsection (c) against a person that—

(1) receives unenhanced data from the Landsat system under this chapter solely for noncommercial purposes (and at a different price than the price at which such data are made available for other purposes); and

(2) uses such data for other than noncommercial purposes.

(c) **ENFORCEMENT MECHANISMS.**—Enforcement mechanisms referred to in subsection (b) may include civil penalties of not more than \$10,000 (per day per violation), denial of further unenhanced data purchasing privileges, and any other penalties or restrictions the Secretary considers necessary to ensure, to the greatest extent practicable, that unenhanced data provided for noncommercial purposes are not used to unfairly compete in the commercial market against private sector entities not eligible for data at the cost of fulfilling user requests.

(d) **PROCEDURES AND REGULATIONS.**—The Secretary shall issue any regulations necessary to carry out this section and shall establish standards and procedures governing the imposition of enforcement mechanisms under subsection (b). The standards and procedures shall include a procedure for potentially aggrieved parties to file formal protests with the Secretary alleging instances where such unenhanced data have been, or are being, used for commercial purposes in violation of the terms of receipt of such data. The Secretary shall promptly act to investigate any such protest, and shall report annually to Congress on instances of such violations.

#### SUBCHAPTER VI—PROHIBITION OF COMMERCIALIZATION OF WEATHER SATELLITES

##### § 60161. Prohibition

Neither the President nor any other official of the Government shall make any effort to lease, sell, or transfer to the private sector, or commercialize, any portion of the weather satellite systems operated by the Department of Commerce or any successor agency.

##### § 60162. Future considerations

Regardless of any change in circumstances subsequent to October 28, 1992, even if such change makes it appear to be in the national interest to commercialize weather satellites, neither the President nor any official shall take any action prohibited by section 60161 of this title unless this subchapter has first been repealed.

#### CHAPTER 603—REMOTE SENSING

Sec.

60301. Definitions.

60302. General responsibilities.

- 60303. Pilot projects to encourage public sector applications.
- 60304. Program evaluation.
- 60305. Data availability.
- 60306. Education.

### § 60301. Definitions

In this chapter:

- (1) **GEOSPATIAL INFORMATION.**—The term “geospatial information” means knowledge of the nature and distribution of physical and cultural features on the landscape based on analysis of data from airborne or spaceborne platforms or other types and sources of data.
- (2) **HIGH RESOLUTION.**—The term “high resolution” means resolution better than five meters.
- (3) **INSTITUTION OF HIGHER EDUCATION.**—The term “institution of higher education” has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

### § 60302. General responsibilities

The Administrator shall—

- (1) develop a sustained relationship with the United States commercial remote sensing industry and, consistent with applicable policies and law, to the maximum practicable, rely on their services; and
- (2) in conjunction with United States industry and universities, research, develop, and demonstrate prototype Earth science applications to enhance Federal, State, local, and tribal governments’ use of government and commercial remote sensing data, technologies, and other sources of geospatial information for improved decision support to address their needs.

### § 60303. Pilot projects to encourage public sector applications

(a) **IN GENERAL.**—The Administrator shall establish a program of grants for competitively awarded pilot projects to explore the integrated use of sources of remote sensing and other geospatial information to address State, local, regional, and tribal agency needs.

(b) **PREFERRED PROJECTS.**—In awarding grants under this section, the Administrator shall give preference to projects that—

- (1) make use of commercial data sets, including high resolution commercial satellite imagery and derived satellite data products, existing public data sets where commercial data sets are not available or applicable, or the fusion of such data sets;
- (2) integrate multiple sources of geospatial information, such as geographic information system data, satellite-provided positioning data, and remotely sensed data, in innovative ways;
- (3) include funds or in-kind contributions from non-Federal sources;
- (4) involve the participation of commercial entities that process raw or lightly processed data, often merging that data with other geospatial information, to create data products that have significant value added to the original data; and
- (5) taken together demonstrate as diverse a set of public sector applications as possible.

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(c) OPPORTUNITIES.—In carrying out this section, the Administrator shall seek opportunities to assist—

(1) in the development of commercial applications potentially available from the remote sensing industry; and

(2) State, local, regional, and tribal agencies in applying remote sensing and other geospatial information technologies for growth management.

(d) DURATION.—Assistance for a pilot project under subsection (a) shall be provided for a period not to exceed 3 years.

(e) REPORT.—Each recipient of a grant under subsection (a) shall transmit a report to the Administrator on the results of the pilot project within 180 days of the completion of that project.

(f) WORKSHOP.—Each recipient of a grant under subsection (a) shall, not later than 180 days after the completion of the pilot project, conduct at least one workshop for potential users to disseminate the lessons learned from the pilot project as widely as feasible.

(g) REGULATIONS.—The Administrator shall issue regulations establishing application, selection, and implementation procedures for pilot projects, and guidelines for reports and workshops required by this section.

#### **§ 60304. Program evaluation**

(a) ADVISORY COMMITTEE.—The Administrator shall establish an advisory committee, consisting of individuals with appropriate expertise in State, local, regional, and tribal agencies, the university research community, and the remote sensing and other geospatial information industries, to monitor the program established under section 60303 of this title. The advisory committee shall consult with the Federal Geographic Data Committee and other appropriate industry representatives and organizations. Notwithstanding section 14 of the Federal Advisory Committee Act (5 App. U.S.C.), the advisory committee established under this subsection shall remain in effect until the termination of the program under section 60303 of this title.

(b) EFFECTIVENESS EVALUATION.—Not later than December 31, 2009, the Administrator shall transmit to Congress an evaluation of the effectiveness of the program established under section 60303 of this title in exploring and promoting the integrated use of sources of remote sensing and other geospatial information to address State, local, regional, and tribal agency needs. Such evaluation shall have been conducted by an independent entity.

#### **§ 60305. Data availability**

The Administrator shall ensure that the results of each of the pilot projects completed under section 60303 of this title shall be retrievable through an electronic, internet-accessible database.

#### **§ 60306. Education**

The Administrator shall establish an educational outreach program to increase awareness at institutions of higher education and State, local, regional, and tribal agencies of the potential applications of remote sensing and other geospatial information and awareness of the need for geospatial workforce development.

**CHAPTER 605—EARTH SCIENCE**

Sec.

60501. Goal.

60502. Transitioning experimental research into operational services.

60503. Reauthorization of Glory Mission.

60504. Tornadoes and other severe storms.

60505. Coordination with the National Oceanic and Atmospheric Administration.

60506. Sharing of climate related data.

**§ 60501. Goal**

The goal for the Administration's Earth Science program shall be to pursue a program of Earth observations, research, and applications activities to better understand the Earth, how it supports life, and how human activities affect its ability to do so in the future. In pursuit of this goal, the Administration's Earth Science program shall ensure that securing practical benefits for society will be an important measure of its success in addition to securing new knowledge about the Earth system and climate change. In further pursuit of this goal, the Administration shall, together with the National Oceanic and Atmospheric Administration and other relevant agencies, provide United States leadership in developing and carrying out a cooperative international Earth observations-based research program.

**§ 60502. Transitioning experimental research into operational services**

(a) INTERAGENCY PROCESS.—The Director of the Office of Science and Technology Policy, in consultation with the Administrator, the Administrator of the National Oceanic and Atmospheric Administration, and other relevant stakeholders, shall develop a process to transition, when appropriate, Administration Earth science and space weather missions or sensors into operational status. The process shall include coordination of annual agency budget requests as required to execute the transitions.

(b) RESPONSIBLE AGENCY OFFICIAL.—The Administrator and the Administrator of the National Oceanic and Atmospheric Administration shall each designate an agency official who shall have the responsibility for and authority to lead the Administration's and the National Oceanic and Atmospheric Administration's transition activities and interagency coordination.

(c) PLAN.—For each mission or sensor that is determined to be appropriate for transition under subsection (a), the Administration and the National Oceanic and Atmospheric Administration shall transmit to Congress a joint plan for conducting the transition. The plan shall include the strategy, milestones, and budget required to execute the transition. The transition plan shall be transmitted to Congress no later than 60 days after the successful completion of the mission or sensor critical design review.

**§ 60503. Reauthorization of Glory Mission**

Congress reauthorizes the Administration to continue with development of the Glory Mission, which will examine how aerosols and solar energy affect the Earth's climate.

**§ 60504. Tornadoes and other severe storms**

The Administrator shall ensure that the Administration gives high priority to those parts of its existing cooperative activities with the National Oceanic and Atmospheric Administration that

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are related to the study of tornadoes and other severe storms, tornado-force winds, and other factors determined to influence the development of tornadoes and other severe storms, with the goal of improving the Nation's ability to predict tornados and other severe storms. Further, the Administrator shall examine whether there are additional cooperative activities with the National Oceanic and Atmospheric Administration that should be undertaken in the area of tornado and severe storm research.

**§ 60505. Coordination with the National Oceanic and Atmospheric Administration**

(a) JOINT WORKING GROUP.—The Administrator and the Administrator of the National Oceanic and Atmospheric Administration shall appoint a Joint Working Group, which shall review and monitor missions of the two agencies to ensure maximum coordination in the design, operation, and transition of missions where appropriate. The Joint Working Group shall also prepare the plans required by subsection (c).

(b) COORDINATION REPORT.—Not later than February 15 of each year, the Administrator and the Administrator of the National Oceanic and Atmospheric Administration shall jointly transmit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on how the Earth science programs of the Administration and the National Oceanic and Atmospheric Administration will be coordinated during the fiscal year following the fiscal year in which the report is transmitted.

(c) COORDINATION OF TRANSITION PLANNING AND REPORTING.—The Administrator, in conjunction with the Administrator of the National Oceanic and Atmospheric Administration and in consultation with other relevant agencies, shall evaluate relevant Administration science missions for their potential operational capabilities and shall prepare transition plans for the existing and future Earth observing systems found to have potential operational capabilities.

(d) LIMITATION.—The Administrator shall not transfer any Administration Earth science mission or Earth observing system to the National Oceanic and Atmospheric Administration until the plan required under subsection (c) has been approved by the Administrator and the Administrator of the National Oceanic and Atmospheric Administration and until financial resources have been identified to support the transition or transfer in the President's budget request for the National Oceanic and Atmospheric Administration.

**§ 60506. Sharing of climate related data**

The Administrator shall work to ensure that the Administration's policies on the sharing of climate related data respond to the recommendations of the Government Accountability Office's report on climate change research and data-sharing policies and to the recommendations on the processing, distribution, and archiving of data by the National Academies Earth Science Decadal Survey, "Earth Science and Applications from Space", and other relevant National Academies reports, to enhance and facilitate their availability and widest possible use to ensure public access to accurate and current data on global warming.

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**Subtitle VII—Access to Space****CHAPTER 701—USE OF SPACE SHUTTLE OR ALTERNATIVES**

Sec.

70101. Recovery of fair value of placing Department of Defense payloads in orbit with space shuttle.

70102. Space shuttle use policy.

70103. Commercial payloads on space shuttle.

**§ 70101. Recovery of fair value of placing Department of Defense payloads in orbit with space shuttle**

Notwithstanding any other provision of law, or any interagency agreement, the Administrator shall charge such prices as are necessary to recover the fair value of placing Department of Defense payloads into orbit by means of the space shuttle.

**§ 70102. Space shuttle use policy**

(a) USE POLICY.—

(1) IN GENERAL.—

(A) POLICY.—It shall be the policy of the United States to use the space shuttle—

- (i) for purposes that require a human presence;
- (ii) for purposes that require the unique capabilities of the space shuttle; or
- (iii) when other compelling circumstances exist.

(B) DEFINITION OF COMPELLING CIRCUMSTANCES.—In this paragraph, the term “compelling circumstances” includes, but is not limited to, occasions when the Administrator determines, in consultation with the Secretary of Defense and the Secretary of State, that important national security or foreign policy interests would be served by a shuttle launch.

(2) USING AVAILABLE CARGO SPACE FOR SECONDARY PAYLOADS.—The policy stated in paragraph (1) shall not preclude the use of available cargo space, on a space shuttle mission otherwise consistent with the policy described in paragraph (1), for the purpose of carrying secondary payloads (as defined by the Administrator) that do not require a human presence if such payloads are consistent with the requirements of research, development, demonstration, scientific, commercial, and educational programs authorized by the Administrator.

(b) ANNUAL REPORT.—At least annually, the Administrator shall submit to Congress a report certifying that the payloads scheduled to be launched on the space shuttle for the next 4 years are consistent with the policy set forth in subsection (a)(1). For each payload scheduled to be launched from the space shuttle that does not require a human presence, the Administrator shall, in the certified report to Congress, state the specific circumstances that justified the use of the space shuttle. If, during the period between scheduled reports to Congress, any additions are made to the list of certified payloads intended to be launched from the shuttle, the Administrator shall inform Congress of the additions and the reasons therefor within 45 days of the change.

(c) ADMINISTRATION PAYLOADS.—The report described in subsection (b) shall also include those Administration payloads

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designed solely to fly on the space shuttle which have begun the phase C/D of its development cycle.

**§ 70103. Commercial payloads on space shuttle**

(a) DEFINITIONS.—In this section:

(1) LAUNCH VEHICLE.—The term “launch vehicle” means any vehicle constructed for the purpose of operating in, or placing a payload in, outer space.

(2) PAYLOAD.—The term “payload” means an object which a person undertakes to place in outer space by means of a launch vehicle, and includes subcomponents of the launch vehicle specifically designed or adapted for that object.

(b) IN GENERAL.—Commercial payloads may not be accepted for launch as primary payloads on the space shuttle unless the Administrator determines that—

(1) the payload requires the unique capabilities of the space shuttle; or

(2) launching of the payload on the space shuttle is important for either national security or foreign policy purposes.

**CHAPTER 703—SHUTTLE PRICING POLICY FOR  
COMMERCIAL AND FOREIGN USERS**

Sec.

70301. Congressional findings and declarations.

70302. Purpose, policy, and goals.

70303. Definition of additive cost.

70304. Duties of Administrator.

**§ 70301. Congressional findings and declarations**

Congress finds and declares that—

(1) the Space Transportation System is a vital element of the United States space program, contributing to the United States leadership in space research, technology, and development;

(2) the Space Transportation System is the primary space launch system for both United States national security and civil government missions;

(3) the Space Transportation System contributes to the expansion of United States private sector investment and involvement in space and therefore should serve commercial users;

(4) the availability of the Space Transportation System to foreign users for peaceful purposes is an important means of promoting international cooperative activities in the national interest and in maintaining access to space for activities which enhance the security and welfare of humankind;

(5) the United States is committed to maintaining world leadership in space transportation;

(6) making the Space Transportation System fully operational and cost effective in providing routine access to space will maximize the national economic benefits of the system; and

(7) national goals and the objectives for the Space Transportation System can be furthered by a stable and fair pricing policy for the Space Transportation System.

**§ 70302. Purpose, policy, and goals**

The purpose of this chapter is to set, for commercial and foreign users, the reimbursement pricing policy for the Space Transportation System that is consistent with the findings included in section 70301 of this title, encourages the full and effective use of space, and is designed to achieve the following goals:

- (1) The preservation of the role of the United States as a leader in space research, technology, and development.
- (2) The efficient and cost effective use of the Space Transportation System.
- (3) The achievement of greatly increased commercial space activity.
- (4) The enhancement of the international competitive position of the United States.

**§ 70303. Definition of additive cost**

In this chapter, the term “additive cost” means the average direct and indirect costs to the Administration of providing additional flights of the Space Transportation System beyond the costs associated with those flights necessary to meet the space transportation needs of the United States Government.

**§ 70304. Duties of Administrator**

(a) ESTABLISHMENT AND IMPLEMENTATION OF REIMBURSEMENT RECOVERY SYSTEM.—The Administrator shall establish and implement a pricing system to recover reimbursement in accordance with the pricing policy under section 70302 of this title from each commercial or foreign user of the Space Transportation System, which, except as provided in subsections (c), (d), and (e), shall include a base price of not less than \$74,000,000 for each flight of the Space Transportation System in 1982 dollars.

(b) REPORTS TO CONGRESS.—Each year the Administrator shall submit to the President of the Senate, the Speaker of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Science and Technology of the House of Representatives a report, transmitted contemporaneously with the annual budget request of the President, which shall inform Congress how the policy goals contained in section 70302 of this title are being furthered by the shuttle price for foreign and commercial users.

(c) REDUCTION OF BASE PRICE.—

(1) AUTHORITY TO REDUCE.—If at any time the Administrator finds that the policy goals contained in section 70302 of this title are not being achieved, the Administrator shall have authority to reduce the base price established in subsection (a) after 45 days following receipt by the President of the Senate, the Speaker of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Science and Technology of the House of Representatives of a notice by the Administrator containing a description of the proposed reduction together with a full and complete statement of the facts and circumstances which necessitate such proposed reduction.

(2) MINIMUM PRICE.—In no case shall the minimum price established under paragraph (1) be less than additive cost.

(d) LOW OR NO-COST FLIGHTS.—The Administrator may set a price lower than the price determined under subsection (a) or (c),

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or provide no-cost flights, for any commercial or foreign user of the Space Transportation System that is involved in research, development, or demonstration programs with the Administration.

(e) CUSTOMER INCENTIVES.—Notwithstanding the provisions of subsection (a), the Administrator shall have the authority to offer reasonable customer incentives consistent with the policy goals in section 70302 of this title.

## CHAPTER 705—EXPLORATION INITIATIVES

Sec.

- 70501. Space shuttle follow-on.
- 70502. Exploration plan and programs.
- 70503. Ground-based analog capabilities.
- 70504. Stepping stone approach to exploration.
- 70505. Lunar outpost.
- 70506. Exploration technology research.
- 70507. Technology development.
- 70508. Robotic or human servicing of spacecraft.

### § 70501. Space shuttle follow-on

(a) POLICY STATEMENT.—It is the policy of the United States to possess the capability for human access to space on a continuous basis.

(b) ANNUAL REPORT.—The Administrator shall transmit an annual report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the progress being made toward developing the Crew Exploration Vehicle and the Crew Launch Vehicle and the estimated time before they will demonstrate crewed, orbital spaceflight.

### § 70502. Exploration plan and programs

The Administrator shall—

- (1) construct an architecture and implementation plan for the Administration's human exploration program that is not critically dependent on the achievement of milestones by fixed dates;
- (2) implement an exploration technology development program to enable lunar human and robotic operations consistent with section 20302(b) of this title, including surface power to use on the Moon and other locations;
- (3) conduct an in-situ resource utilization technology program to develop the capability to use space resources to increase independence from Earth, and sustain exploration beyond low-Earth orbit; and
- (4) pursue aggressively automated rendezvous and docking capabilities that can support the International Space Station and other mission requirements.

### § 70503. Ground-based analog capabilities

(a) IN GENERAL.—The Administrator may establish a ground-based analog capability in remote United States locations in order to assist in the development of lunar operations, life support, and in-situ resource utilization experience and capabilities.

(b) ENVIRONMENTAL CHARACTERISTICS.—The Administrator shall select locations for the activities described in subsection (a) that—

- (1) are regularly accessible;

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(2) have significant temperature extremes and range; and

(3) have access to energy and natural resources (including geothermal, permafrost, volcanic, or other potential resources).

(c) INVOLVEMENT OF LOCAL POPULATIONS AND PRIVATE SECTOR PARTNERS.—In carrying out this section, the Administrator shall involve local populations, academia, and industrial partners as much as possible to ensure that ground-based benefits and applications are encouraged and developed.

#### **§ 70504. Stepping stone approach to exploration**

In order to maximize the cost-effectiveness of the long-term exploration and utilization activities of the United States, the Administrator shall take all necessary steps, including engaging international partners, to ensure that activities in its lunar exploration program shall be designed and implemented in a manner that gives strong consideration to how those activities might also help meet the requirements of future exploration and utilization activities beyond the Moon. The timetable of the lunar phase of the long-term international exploration initiative shall be determined by the availability of funding. However, once an exploration-related project enters its development phase, the Administrator shall seek, to the maximum extent practicable, to complete that project without undue delays.

#### **§ 70505. Lunar outpost**

(a) ESTABLISHMENT.—As the Administration works toward the establishment of a lunar outpost, the Administration shall make no plans that would require a lunar outpost to be occupied to maintain its viability. Any such outpost shall be operable as a human-tended facility capable of remote or autonomous operation for extended periods.

(b) DESIGNATION.—The United States portion of the first human-tended outpost established on the surface of the Moon shall be designated the “Neil A. Armstrong Lunar Outpost”.

#### **§ 70506. Exploration technology research**

The Administrator shall carry out a program of long-term exploration-related technology research and development, including such things as in-space propulsion, power systems, life support, and advanced avionics, that is not tied to specific flight projects. The program shall have the funding goal of ensuring that the technology research and development can be completed in a timely manner in order to support the safe, successful, and sustainable exploration of the solar system. In addition, in order to ensure that the broadest range of innovative concepts and technologies are captured, the long-term technology program shall have the goal of having a significant portion of its funding available for external grants and contracts with universities, research institutions, and industry.

#### **§ 70507. Technology development**

The Administrator shall establish an intra-Directorate long-term technology development program for space and Earth science within the Science Mission Directorate for the development of new technology. The program shall be independent of the flight projects under development. The Administration shall have a goal of funding the intra-Directorate technology development program at a level of 5 percent of the total Science Mission Directorate annual budget.

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The program shall be structured to include competitively awarded grants and contracts.

**§ 70508. Robotic or human servicing of spacecraft**

The Administrator shall take all necessary steps to ensure that provision is made in the design and construction of all future observatory-class scientific spacecraft intended to be deployed in Earth orbit or at a Lagrangian point in space for robotic or human servicing and repair to the extent practicable and appropriate.

**CHAPTER 707—HUMAN SPACE FLIGHT INDEPENDENT INVESTIGATION COMMISSION**

Sec.

- 70701. Definitions.
- 70702. Establishment of Commission.
- 70703. Tasks of Commission.
- 70704. Composition of Commission.
- 70705. Powers of Commission.
- 70706. Public meetings, information, and hearings.
- 70707. Staff of Commission.
- 70708. Compensation and travel expenses.
- 70709. Security clearances for Commission members and staff.
- 70710. Reporting requirements and termination.

**§ 70701. Definitions**

In this chapter:

- (1) COMMISSION.—The term “Commission” means a Commission established under this chapter.
- (2) INCIDENT.—The term “incident” means either an accident or a deliberate act.

**§ 70702. Establishment of Commission**

(a) ESTABLISHMENT.—The President shall establish an independent, nonpartisan Commission within the executive branch to investigate any incident that results in the loss of—

- (1) a space shuttle;
- (2) the International Space Station or its operational viability;
- (3) any other United States space vehicle carrying humans that is owned by the Federal Government or that is being used pursuant to a contract with the Federal Government;
- or
- (4) a crew member or passenger of any space vehicle described in this subsection.

(b) DEADLINE FOR ESTABLISHMENT.—The President shall establish a Commission within 7 days after an incident specified in subsection (a).

**§ 70703. Tasks of Commission**

A Commission established pursuant to this chapter shall, to the extent possible, undertake the following tasks:

- (1) INVESTIGATION.—Investigate the incident.
- (2) CAUSE.—Determine the cause of the incident.
- (3) CONTRIBUTING FACTORS.—Identify all contributing factors to the cause of the incident.
- (4) RECOMMENDATIONS.—Make recommendations for corrective actions.
- (5) ADDITIONAL FINDINGS OR RECOMMENDATIONS.—Provide any additional findings or recommendations deemed by the

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Commission to be important, whether or not they are related to the specific incident under investigation.

(6) REPORT.—Prepare a report to Congress, the President, and the public.

#### § 70704. Composition of Commission

(a) NUMBER OF COMMISSIONERS.—A Commission established pursuant to this chapter shall consist of 15 members.

(b) SELECTION.—The members of a Commission shall be chosen in the following manner:

(1) APPOINTMENT BY PRESIDENT.—The President shall appoint the members, and shall designate the Chairman and Vice Chairman of the Commission from among its members.

(2) LISTS PROVIDED BY LEADERS OF CONGRESS.—The majority leader of the Senate, the minority leader of the Senate, the Speaker of the House of Representatives, and the minority leader of the House of Representatives shall each provide to the President a list of candidates for membership on the Commission. The President may select one of the candidates from each of the 4 lists for membership on the Commission.

(3) PROHIBITION REGARDING FEDERAL OFFICERS AND EMPLOYEES AND MEMBERS OF CONGRESS.—No officer or employee of the Federal Government or Member of Congress shall serve as a member of the Commission.

(4) PROHIBITION REGARDING CONTRACTORS.—No member of the Commission shall have, or have pending, a contractual relationship with the Administration.

(5) PROHIBITION REGARDING CONFLICT OF INTEREST.—The President shall not appoint any individual as a member of a Commission under this section who has a current or former relationship with the Administrator that the President determines would constitute a conflict of interest.

(6) EXPERIENCE.—To the extent practicable, the President shall ensure that the members of the Commission include some individuals with experience relative to human carrying spacecraft, as well as some individuals with investigative experience and some individuals with legal experience.

(7) DIVERSITY.—To the extent practicable, the President shall seek diversity in the membership of the Commission.

(c) DEADLINE FOR APPOINTMENT.—All members of a Commission established under this chapter shall be appointed no later than 30 days after the incident.

(d) INITIAL MEETING.—A Commission shall meet and begin operations as soon as practicable.

(e) SUBSEQUENT MEETINGS.—After its initial meeting, a Commission shall meet upon the call of the Chairman or a majority of its members.

(f) QUORUM.—Eight members of a Commission shall constitute a quorum.

(g) VACANCIES.—Any vacancy in a Commission shall not affect its powers, but shall be filled in the same manner in which the original appointment was made.

#### § 70705. Powers of Commission

(a) HEARINGS AND EVIDENCE.—A Commission or, on the authority of the Commission, any subcommittee or member thereof, may, for the purpose of carrying out this chapter—

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(1) hold such hearings and sit and act at such times and places, take such testimony, receive such evidence, administer such oaths; and

(2) require, by subpoena or otherwise, the attendance and testimony of such witnesses and the production of such books, records, correspondence, memoranda, papers, and documents, as the Commission or such designated subcommittee or member may determine advisable.

(b) CONTRACTING.—A Commission may, to such extent and in such amounts as are provided in appropriation Acts, enter into contracts to enable the Commission to discharge its duties under this chapter.

(c) INFORMATION FROM FEDERAL AGENCIES.—

(1) IN GENERAL.—A Commission may secure directly from any executive department, bureau, agency, board, commission, office, independent establishment, or instrumentality of the Government, information, suggestions, estimates, and statistics for the purposes of this chapter. Each department, bureau, agency, board, commission, office, independent establishment, or instrumentality shall, to the extent authorized by law, furnish such information, suggestions, estimates, and statistics directly to the Commission, upon request made by the Chairman, the chairman of any subcommittee created by a majority of the Commission, or any member designated by a majority of the Commission.

(2) RECEIPT, HANDLING, STORAGE, AND DISSEMINATION.—Information shall only be received, handled, stored, and disseminated by members of the Commission and its staff consistent with all applicable statutes, regulations, and Executive orders.

(d) ASSISTANCE FROM FEDERAL AGENCIES.—

(1) GENERAL SERVICES ADMINISTRATION.—The Administrator of General Services shall provide to a Commission on a reimbursable basis administrative support and other services for the performance of the Commission's tasks.

(2) OTHER DEPARTMENTS AND AGENCIES.—In addition to the assistance prescribed in paragraph (1), departments and agencies of the United States may provide to the Commission such services, funds, facilities, staff, and other support services as they may determine advisable and as may be authorized by law.

(3) ADMINISTRATION ENGINEERING AND SAFETY CENTER.—The Administration Engineering and Safety Center shall provide data and technical support as requested by the Commission.

#### § 70706. Public meetings, information, and hearings

(a) PUBLIC MEETINGS AND RELEASE OF PUBLIC VERSIONS OF REPORTS.—A Commission shall—

(1) hold public hearings and meetings to the extent appropriate; and

(2) release public versions of the reports required under this chapter.

(b) PUBLIC HEARINGS.—Any public hearings of a Commission shall be conducted in a manner consistent with the protection of information provided to or developed for or by the Commission as required by any applicable statute, regulation, or Executive order.

**§ 70707. Staff of Commission**

(a) APPOINTMENT AND COMPENSATION.—The Chairman, in consultation with the Vice Chairman, in accordance with rules agreed upon by a Commission, may appoint and fix the compensation of a staff director and such other personnel as may be necessary to enable the Commission to carry out its functions.

(b) DETAILEES.—Any Federal Government employee, except for an employee of the Administration, may be detailed to a Commission without reimbursement from the Commission, and such detailee shall retain the rights, status, and privileges of his or her regular employment without interruption.

(c) CONSULTANT SERVICES.—A Commission may procure the services of experts and consultants in accordance with section 3109 of title 5, but at rates not to exceed the daily equivalent of the annual rate of basic pay in effect for positions at level IV of the Executive Schedule under section 5315 of title 5. An expert or consultant whose services are procured under this subsection shall disclose any contract or association the expert or consultant has with the Administration or any Administration contractor.

**§ 70708. Compensation and travel expenses**

(a) COMPENSATION.—Each member of a Commission may be compensated at a rate not to exceed the daily equivalent of the annual rate of basic pay in effect for positions at level IV of the Executive Schedule under section 5315 of title 5 for each day during which that member is engaged in the actual performance of the duties of the Commission.

(b) TRAVEL EXPENSES.—While away from their homes or regular places of business in the performance of services for the Commission, members of a Commission shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5.

**§ 70709. Security clearances for Commission members and staff**

The appropriate Federal agencies or departments shall cooperate with a Commission in expeditiously providing to the Commission members and staff appropriate security clearances to the extent possible pursuant to existing procedures and requirements. No person shall be provided with access to classified information under this chapter without the appropriate security clearances.

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**§ 70710. Reporting requirements and termination**

(a) INTERIM REPORTS.—A Commission may submit to the President and Congress interim reports containing such findings, conclusions, and recommendations for corrective actions as have been agreed to by a majority of Commission members.

(b) FINAL REPORT.—A Commission shall submit to the President and Congress, and make concurrently available to the public, a final report containing such findings, conclusions, and recommendations for corrective actions as have been agreed to by a majority of Commission members. Such report shall include any minority views or opinions not reflected in the majority report.

(c) TERMINATION.—

(1) IN GENERAL.—A Commission, and all the authorities of this chapter with respect to that Commission, shall terminate 60 days after the date on which the final report is submitted under subsection (b).

(2) ADMINISTRATIVE ACTIVITIES BEFORE TERMINATION.—A Commission may use the 60-day period referred to in paragraph (1) for the purpose of concluding its activities, including providing testimony to committees of Congress concerning its reports and disseminating the final report.

**CHAPTER 709—INTERNATIONAL SPACE STATION**

Sec.

70901. Peaceful uses of space station.

70902. Allocation of International Space Station research budget.

70903. International Space Station research.

70904. International Space Station completion.

70905. National laboratory designation.

70906. International Space Station National Laboratory Advisory Committee.

70907. Maintaining use through at least 2020.

**§ 70901. Peaceful uses of space station**

No civil space station authorized under section 103(a)(1) of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1991 (Public Law 101-611, 104 Stat. 3190) may be used to carry or place in orbit any nuclear weapon or any other weapon of mass destruction, to install any such weapon on any celestial body, or to station any such weapon in space in any other manner. This civil space station may be used only for peaceful purposes.

**§ 70902. Allocation of International Space Station research budget**

The Administrator shall allocate at least 15 percent of the funds budgeted for International Space Station research to ground-based, free-flyer, and International Space Station life and microgravity science research that is not directly related to supporting the human exploration program, consistent with section 40904 of this title.

**§ 70903. International Space Station research**

The Administrator shall—

(1) carry out a program of microgravity research consistent with section 40904 of this title; and

(2) consider the need for a life sciences centrifuge and any associated holding facilities.

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**§ 70904. International Space Station completion**

(a) **POLICY.**—It is the policy of the United States to achieve diverse and growing utilization of, and benefits from, the International Space Station.

(b) **ELEMENTS, CAPABILITIES, AND CONFIGURATION CRITERIA.**—The Administrator shall ensure that the International Space Station will—

(1) be assembled and operated in a manner that fulfills international partner agreements, as long as the Administrator determines that the shuttle can safely enable the United States to do so;

(2) be used for a diverse range of microgravity research, including fundamental, applied, and commercial research, consistent with section 40904 of this title;

(3) have an ability to support a crew size of at least 6 persons, unless the Administrator transmits to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 60 days after December 30, 2005, a report explaining why such a requirement should not be met, the impact of not meeting the requirement on the International Space Station research agenda and operations and international partner agreements, and what additional funding or other steps would be required to have an ability to support a crew size of at least 6 persons;

(4) support Crew Exploration Vehicle docking and automated docking of cargo vehicles or modules launched by either heavy-lift or commercially-developed launch vehicles;

(5) support any diagnostic human research, on-orbit characterization of molecular crystal growth, cellular research, and other research that the Administration believes is necessary to conduct, but for which the Administration lacks the capacity to return the materials that need to be analyzed to Earth; and

(6) be operated at an appropriate risk level.

(c) **CONTINGENCIES.**—

(1) **POLICY.**—The Administrator shall ensure that the International Space Station can have available, if needed, sufficient logistics and on-orbit capabilities to support any potential period during which the space shuttle or its follow-on crew and cargo systems are unavailable, and can have available, if needed, sufficient surge delivery capability or prepositioning of spares and other supplies needed to accommodate any such hiatus.

(2) **PLAN.**—Before making any change in the International Space Station assembly sequence in effect on December 30, 2005, the Administrator shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a plan to carry out the policy described in paragraph (1).

**§ 70905. National laboratory designation**

(a) **DEFINITION OF UNITED STATES SEGMENT OF THE INTERNATIONAL SPACE STATION.**—In this section the term “United States segment of the International Space Station” means those elements of the International Space Station manufactured—

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(1) by the United States; or

(2) for the United States by other nations in exchange for funds or launch services.

(b) DESIGNATION.—To further the policy described in section 70501(a) of this title, the United States segment of the International Space Station is hereby designated a national laboratory.

(c) MANAGEMENT.—

(1) PARTNERSHIPS.—The Administrator shall seek to increase the utilization of the International Space Station by other Federal entities and the private sector through partnerships, cost-sharing agreements, and other arrangements that would supplement Administration funding of the International Space Station.

(2) CONTRACTING.—The Administrator may enter into a contract with a nongovernmental entity to operate the International Space Station national laboratory, subject to all applicable Federal laws and regulations.

#### **§ 70906. International Space Station National Laboratory Advisory Committee**

(a) ESTABLISHMENT.—Not later than one year after October 15, 2008, the Administrator shall establish under the Federal Advisory Committee Act a committee to be known as the “International Space Station National Laboratory Advisory Committee” (hereafter in this section referred to as the “Committee”).

(b) MEMBERSHIP.—

(1) COMPOSITION.—The Committee shall be composed of individuals representing organizations that have formal agreements with the Administration to utilize the United States portion of the International Space Station, including allocations within partner elements.

(2) CHAIR.—The Administrator shall appoint a chair from among the members of the Committee, who shall serve for a 2-year term.

(c) DUTIES OF THE COMMITTEE.—

(1) IN GENERAL.—The Committee shall monitor, assess, and make recommendations regarding effective utilization of the International Space Station as a national laboratory and platform for research.

(2) ANNUAL REPORT.—The Committee shall submit to the Administrator, on an annual basis or more frequently as considered necessary by a majority of the members of the Committee, a report containing the assessments and recommendations required by paragraph (1).

(d) DURATION.—The Committee shall exist for the life of the International Space Station.

#### **§ 70907. Maintaining use through at least 2020**

The Administrator shall take all necessary steps to ensure that the International Space Station remains a viable and productive facility capable of potential United States utilization through at least 2020 and shall take no steps that would preclude its continued operation and utilization by the United States after 2015.

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**CHAPTER 711—NEAR-EARTH OBJECTS**

Sec.

71101. Reaffirmation of policy.

71102. Requests for information.

71103. Developing policy and recommending responsible Federal agency.

71104. Planetary radar.

**§ 71101. Reaffirmation of policy**

Congress reaffirms the policy set forth in section 20102(g) of this title (relating to surveying near-Earth asteroids and comets).

**§ 71102. Requests for information**

The Administrator shall issue requests for information on—

(1) a low-cost space mission with the purpose of rendezvousing with, attaching a tracking device, and characterizing the Apophis asteroid; and

(2) a medium-sized space mission with the purpose of detecting near-Earth objects equal to or greater than 140 meters in diameter.

**§ 71103. Developing policy and recommending responsible Federal agency**

Within 2 years after October 15, 2008, the Director of the Office of Science and Technology Policy shall—

(1) develop a policy for notifying Federal agencies and relevant emergency response institutions of an impending near-Earth object threat, if near-term public safety is at risk; and

(2) recommend a Federal agency or agencies to be responsible for—

(A) protecting the United States from a near-Earth object that is expected to collide with Earth; and

(B) implementing a deflection campaign, in consultation with international bodies, should one be necessary.

**§ 71104. Planetary radar**

The Administrator shall maintain a planetary radar that is comparable to the capability provided through the Deep Space Network Goldstone facility of the Administration.

**CHAPTER 713—COOPERATION FOR SAFETY AMONG SPACEFARING NATIONS**

Sec.

71301. Common docking system standard to enable rescue.

71302. Information sharing to avoid physical or radio-frequency interference.

**§ 71301. Common docking system standard to enable rescue**

In order to maximize the ability to rescue astronauts whose space vehicles have become disabled, the Administrator shall enter into discussions with the appropriate representatives of spacefaring nations who have or plan to have crew transportation systems capable of orbital flight or flight beyond low Earth orbit for the purpose of agreeing on a common docking system standard.

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**§ 71302. Information sharing to avoid physical or radio-frequency interference**

The Administrator shall, in consultation with other agencies of the Federal Government as the Administrator considers appropriate, initiate discussions with the appropriate representatives of spacefaring nations to determine an appropriate framework under which information intended to promote safe access into outer space, operations in outer space, and return from outer space to Earth free from physical or radio-frequency interference can be shared among the nations.

**SEC. 4. CONFORMING AMENDMENTS TO OTHER LAWS.**

(a) TITLE 5.—Section 9811(a)(1)(E) of title 5, United States Code, is amended by striking “section 203(c)(2)(A) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2473(c)(2)(A))” and substituting “section 20113(b)(1) of title 51”.

(b) TITLE 31.—Section 1304(a)(3)(D) of title 31, United States Code, is amended by striking “section 203 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2473)” and substituting “section 20113 of title 51”.

(c) TITLE 35.—Section 210(a)(7) of title 35, United States Code, is amended by striking “section 305 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2457)” and substituting “section 20135 of title 51”.

(d) TRANSFER OF CHAPTERS 701 AND 703 OF TITLE 49, UNITED STATES CODE.—

(1) TITLE 49, UNITED STATES CODE.—Title 49, United States Code, is amended as follows:

(A) In the analysis for title 49, United States Code, the item related to subtitle IX is amended to read as follows:

**“IX. [TRANSFERRED]”.**

(B) The heading and analysis for subtitle IX of title 49, United States Code, are amended to read as follows:

**“Subtitle IX—[Transferred]”**

“Chapter

**“701. [Transferred]”**

**“703. [Transferred]”.**

Sec.

(2) RENUMBERING AND TRANSFER OF CHAPTERS.—Chapters 701 and 703 of title 49, United States Code, are renumbered as chapters 509 and 511, respectively, of title 51, United States Code, and transferred so as to appear after chapter 507 of title 51, United States Code, as enacted by section 3 of this Act.

(3) RENUMBERING OF SECTIONS IN CHAPTER 509 OF TITLE 51, UNITED STATES CODE.—In chapter 509 of title 51, United States Code, as renumbered by paragraph (2), and in the chapter analysis, the sections are renumbered as follows:

(A) Section 70101 is renumbered 50901.

(B) Section 70102 is renumbered 50902.

(C) Section 70103 is renumbered 50903.

(D) Section 70104 is renumbered 50904.

(E) Section 70105 is renumbered 50905.

(F) Section 70105a is renumbered 50906.

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- (G) Section 70106 is renumbered 50907.
- (H) Section 70107 is renumbered 50908.
- (I) Section 70108 is renumbered 50909.
- (J) Section 70109 is renumbered 50910.
- (K) Section 70109a is renumbered 50911.
- (L) Section 70110 is renumbered 50912.
- (M) Section 70111 is renumbered 50913.
- (N) Section 70112 is renumbered 50914.
- (O) Section 70113 is renumbered 50915.
- (P) Section 70114 is renumbered 50916.
- (Q) Section 70115 is renumbered 50917.
- (R) Section 70116 is renumbered 50918.
- (S) Section 70117 is renumbered 50919.
- (T) Section 70118 is renumbered 50920.
- (U) Section 70119 is renumbered 50921.
- (V) Section 70120 is renumbered 50922.
- (W) Section 70121 is renumbered 50923.

(4) RENUMBERING OF SECTIONS IN CHAPTER 511 OF TITLE 51, UNITED STATES CODE.—In chapter 511 of title 51, United States Code, as renumbered by paragraph (2), and in the chapter analysis, the sections are renumbered as follows:

- (A) Section 70301 is renumbered 51101.
- (B) Section 70302 is renumbered 51102.
- (C) Section 70303 is renumbered 51103.
- (D) Section 70304 is renumbered 51104.
- (E) Section 70305 is renumbered 51105.

(5) CROSS REFERENCES IN CHAPTER 509 OF TITLE 51, UNITED STATES CODE.—

(A) Section 50902(11) of title 51, United States Code, as renumbered by paragraph (3), is amended—

(i) by striking “section 70104(c)” and substituting “section 50904(c)”; and

(ii) by striking “section 70105a” and substituting “section 50906”.

(B) Section 50902(19) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70120(c)(2)” and substituting “section 50922(c)(2)”.

(C) Section 50904(a)(2) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70102(1)(A) or (B)” and substituting “section 50902(1)(A) or (B)”.

(D) Section 50904(a)(3) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70102(1)(C)” and substituting “section 50902(1)(C)”.

(E) Section 50904(a)(4) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70102(1)(C)” and substituting “section 50902(1)(C)”.

(F) Section 50905(b)(5)(A) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70112(a)(2) and (c)” and substituting “section 50914(a)(2) and (c)”.

(G) Section 50906(c) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70105(b)(2)(C)” and substituting “section 50905(b)(2)(C)”.

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(H) Section 50906(i) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “sections 70106, 70107, 70108, 70109, 70110, 70112, 70115, 70116, 70117, and 70121” and substituting “sections 50907, 50908, 50909, 50910, 50912, 50914, 50917, 50918, 50919, and 50923”.

(I) Section 50907(a) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “sections 70104(c), 70105, and 70105a” and substituting “sections 50904(c), 50905, and 50906”.

(J) Section 50908(b)(2) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70105(c)” and substituting “section 50905(c)”.

(K) Section 50908(e) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70110” and substituting “section 50912”.

(L) Section 50909(b) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70110” and substituting “section 50912”.

(M) Section 50912(a)(1) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70105(a) or 70105a” and substituting “section 50905(a) or 50906”.

(N) Section 50912(a)(2) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70104(c)” and substituting “section 50904(c)”.

(O) Section 50912(a)(3)(A) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70107(b) or (c)” and substituting “section 50908(b) or (c)”.

(P) Section 50912(a)(3)(B) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70108(a)” and substituting “section 50909(a)”.

(Q) Section 50915(a)(1)(A) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70112(a)(1)(A)” and substituting “section 50914(a)(1)(A)”.

(R) Section 50915(a)(2) of title 51, United States Code, as renumbered by paragraph (3), is amended—

(i) by striking “section 70112(a)(1)(A)” and substituting “section 50914(a)(1)(A)”; and

(ii) by striking “section 70112(a)(1)” and substituting “section 50914(a)(1)”.

(S) Section 50916 of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70106(b)” and substituting “section 50907(b)”.

(T) Section 50919(b)(2) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5601 et seq.)” and substituting “chapter 601 of this title”.

(U) Section 50922(c)(2)(B) of title 51, United States Code, as renumbered by paragraph (3), is amended by striking “section 70102” and substituting “section 50902”.

(6) CROSS REFERENCES IN CHAPTER 511 OF TITLE 51, UNITED STATES CODE.—

(A) Section 51101(1) of title 51, United States Code, as renumbered by paragraph (4), is amended by striking

“section 502 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (15 U.S.C. 5802)” and substituting “section 50501 of this title”.

(B) Section 51104(d)(1) of title 51, United States Code, as renumbered by paragraph (4), is amended by striking “section 303 of this title” and substituting “section 303 of title 49”.

(7) ANALYSIS FOR TITLE 51, UNITED STATES CODE.—The analysis for title 51, United States Code, as enacted by section 3 of this Act, is amended by adding, after the item for chapter 507, the following items:

- “509. Commercial Space Launch Activities .....50901
- “511. Space Transportation Infrastructure Matching Grants .....51101”.

(8) DEEMED REFERENCES TO TITLE 49, UNITED STATES CODE.—

49 USC 101 note.

In title 49, United States Code, references to “this title” are deemed to refer also to chapters 509 and 511 of title 51, United States Code.

(e) NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT OF 2005.—Section 304 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16654) is amended as follows:

(1) Subsection (a)(1) is redesignated as subsection (a) and amended to read as follows:

“(a) ASSESSMENT OF CERTAIN MISSIONS.—Not later than 60 days after the date of enactment of this Act, the Administrator shall carry out an assessment under section 30504 of title 51, United States Code, for at least the following missions: FAST, TIMED, Cluster, Wind, Geotail, Polar, TRACE, Ulysses, and Voyager.”

(2) Subsection (b) is amended by striking “subsection (a)(1)” and substituting “subsection (a)”.

**SEC. 5. TRANSITIONAL AND SAVINGS PROVISIONS.**

51 USC note prec. 10101.

(a) DEFINITIONS.—In this section:

(1) SOURCE PROVISION.—The term “source provision” means a provision of law that is replaced by a title 51 provision.

(2) TITLE 51 PROVISION.—The term “title 51 provision” means a provision of title 51, United States Code, that is enacted by section 3.

(b) CUTOFF DATE.—The title 51 provisions replace certain provisions of law enacted on or before July 1, 2009. If a law enacted after that date amends or repeals a source provision, that law is deemed to amend or repeal, as the case may be, the corresponding title 51 provision. If a law enacted after that date is otherwise inconsistent with a title 51 provision or a provision of this Act, that law supersedes the title 51 provision or provision of this Act to the extent of the inconsistency.

(c) ORIGINAL DATE OF ENACTMENT UNCHANGED.—For purposes of determining whether one provision of law supersedes another based on enactment later in time, a title 51 provision is deemed to have been enacted on the date of enactment of the corresponding source provision.

(d) REFERENCES TO TITLE 51 PROVISIONS.—A reference to a title 51 provision is deemed to refer to the corresponding source provision.

(e) REFERENCES TO SOURCE PROVISIONS.—A reference to a source provision, including a reference in a regulation, order, or other law, is deemed to refer to the corresponding title 51 provision.

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(f) REGULATIONS, ORDERS, AND OTHER ADMINISTRATIVE ACTIONS.—A regulation, order, or other administrative action in effect under a source provision continues in effect under the corresponding title 51 provision.

(g) ACTIONS TAKEN AND OFFENSES COMMITTED.—An action taken or an offense committed under a source provision is deemed to have been taken or committed under the corresponding title 51 provision.

51 USC note  
prec. 10101.

**SEC. 6. REPEALS.**

The following provisions of law are repealed, except with respect to rights and duties that matured, penalties that were incurred, or proceedings that were begun before the date of enactment of this Act:

## Schedule of Laws Repealed

Act	Section	United States Code
National Aeronautics and Space Act of 1958 (Public Law 85-568) .....	102 .....	42 U.S.C. 2451.
	103 .....	42 U.S.C. 2452.
	201 .....	42 U.S.C. 2471 (prior).
	202 .....	42 U.S.C. 2472.
	203 .....	42 U.S.C. 2473.
	204 .....	42 U.S.C. 2474.
	205 .....	42 U.S.C. 2475.
	206 .....	42 U.S.C. 2476.
	207 .....	42 U.S.C. 2476a.
	208 .....	42 U.S.C. 2476b.
	302 .....	42 U.S.C. 2453.
	303 .....	42 U.S.C. 2454.
	304(a) .....	42 U.S.C. 2455(a).
	304(e) .....	42 U.S.C. 2456.
	304(f) .....	42 U.S.C. 2456a.
	305 .....	42 U.S.C. 2457.
	306 .....	42 U.S.C. 2458.
	307 .....	42 U.S.C. 2458a.
	308 .....	42 U.S.C. 2458b.
	309 .....	42 U.S.C. 2458c.
	310 .....	42 U.S.C. 2459.
	311 .....	42 U.S.C. 2459b.
	312 .....	42 U.S.C. 2459c.
	313 .....	42 U.S.C. 2459f.
	314 .....	42 U.S.C. 2459f-1.
	315 .....	42 U.S.C. 2459j.
	316 .....	42 U.S.C. 2459k.
	317 .....	42 U.S.C. 2459l.
	401 .....	42 U.S.C. 2481.
	402 .....	42 U.S.C. 2482.
	403 .....	42 U.S.C. 2483.
	404 .....	42 U.S.C. 2484.
	Act of June 15, 1959 (Public Law 86-45) .....	4 .....
National Aeronautics and Space Administration Authorization Act, 1968 (Public Law 90-67) .....	6 .....	42 U.S.C. 2477.
Joint Resolution of September 29, 1969 (Public Law 91-76) ..	1, 2 .....	42 U.S.C. 2461.
National Aeronautics and Space Administration Authorization Act, 1978 (Public Law 95-76) ..	6 .....	42 U.S.C. 2463.

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## Schedule of Laws Repealed—Continued

Act	Section	United States Code
National Aeronautics and Space Administration Authorization Act, 1983 (Public Law 97-324) .....	106(a) .....	42 U.S.C. 2464.
National Aeronautics and Space Administration Authorization Act of 1986 (Public Law 99-170) .....	201 .....	42 U.S.C. 2466.
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**LEGISLATIVE HISTORY—H.R. 3237:**

HOUSE REPORTS: No. 111-325 (Comm. on the Judiciary).

CONGRESSIONAL RECORD, Vol. 156 (2010):

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Dec. 3, considered and passed Senate.





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