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Legislative Comment: The Omnibus Space Commercialization Act of 1993

Glenn Harlan Reynolds

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GLENN HARLAN REYNOLDS*

For some time, the United States has been devoted to the creation of a commercial space sector in which profit-driven private entities, rather than the government, serve as the principal suppliers of goods and services.[1] Efforts to build a commercial space sector have been reasonably successful as the industry has annual revenues of approximately five billion dollars and export earnings of over 700 million dollars,[2] making it roughly comparable in size to the domestic motion picture industry.

The importance of a commercial space sector, however, transcends its economic impact. It is important to the creation of a spacefaring, and ultimately space-dwelling, civilization — a goal endorsed both by Congress with its enactment of the National Aeronautics and Space Administration Authorization Act of 1988,[3]

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1. This effort really began with the passage of the 1984 Commercial Space Launch Act, 49 U.S.C. §§ 2601-23 (1988), and the Land Remote-Sensing Commercialization Act of 1984, Pub. L. No. 98-365, 98 Stat. 451 (1984) (codified at 15 U.S.C. § 4201 and in scattered sections of 49 U.S.C); *see also* Commercial Space Launch Act Amendments of 1988, 49 U.S.C. §§ 2603-04, 2615 (1988).

2. *See* U.S. DEP'T OF COMMERCE, U.S. INDUSTRIAL OUTLOOK 27-1, 27-2 (1993). This represents rapid growth, as overall space commerce levels were only 2.7 billion dollars as recently as 1989. *Id.*

3. Pub. L. No. 100-685, § 217, 102 Stat. 4083 (1988) (codified with some differences in language at 42 U.S.C. § 2451 (1988)). The Act explicitly endorsed

and by the Executive Branch.[4] Maintaining a commercial space sector is also vital to our well being here on Earth since market forces usually provide higher performance at lower costs than government programs. Moreover, in the aftermath of the Cold War and the inevitable reductions in defense aerospace funding, commercial forces must fuel our aerospace sectors, or they will surely wither, squandering a great deal of preciously acquired technical and human capital.

Although the United States has made significant progress in developing a truly commercial space sector, it still has a considerable distance yet to go. Decades of government-coordinated space activity produced institutional structures, bureaucratic cultures, and business methods which were poorly adapted to the commercial marketplace. In its efforts to promote the growth of commercial space industries, the U.S. government must overcome these inherent weaknesses and encourage the formation of new structures and cultures that are better suited to the realities of the commercial marketplace. The subject of this Comment, the Omnibus Space Commercialization Act of 1993,[5] recognizes the importance of a

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"the extension of life beyond Earth's atmosphere, leading ultimately to the establishment of space settlements," and provided for reports by NASA every two years regarding its efforts to promote this goal. Pub. L. No. 100-685, § 217(a), (c), 102 Stat. 4083, 4094-95 (1988).

4. This goal received bipartisan support during the 1992 Presidential election. During his campaign, President Clinton endorsed the eventual creation of a spacefaring civilization. Sean Holton, *Think-Tank Book Favors Scuttling Space Station*, ORLANDO SENTINEL TRIBUNE, Dec. 9, 1992, at A4 (describing President Clinton's desire for a functioning space station); *Phase Out Space Shuttle, Panel Says*, ST. PETERSBURG TIMES, Nov. 20, 1992, at 1A (referring to the Clinton-Gore position papers' support of space travel). President Bush, meanwhile, expressed similar sentiments in a speech he delivered on July 20, 1989. President's Remarks on the 20th Anniversary of the *Apollo 11* Moon Landing, 1989 PUB. PAPERS 990 (July 20, 1989). In addition, President Reagan has stated that "NASA has 'some very exciting ideas for the future — building a space station observatory on the far side of the moon or establishing a permanent lunar colony or sending a manned mission to the planet Mars or to one of its moons.'" Lou Cannon, *President Salutes Discovery, Bush, Shuttle Crew is called 'America's Heroes' at Rose Garden Ceremony*, WASH. POST, Oct. 15, 1988, at A4.

5. The Omnibus Space Commercialization Act of 1993, H.R. 2731, 103d Cong., 1st Sess. (1993) [hereinafter Omnibus Bill]; *see* Appendix to this Comment.

successful commercial space sector and attempts to minimize the problems which have inhibited the space industry in the past.

Commercial enterprises are not easily or magically created. As efforts to build a market economy in the former Soviet Union illustrate, there must be a conducive environment for commercial enterprises to flourish. Capital must be available, innovators should be able to expect to retain the fruits of their innovations, risks should be reasonably predictable, and profit-driven enterprises should not have to compete with taxpayer subsidized programs. Supporters of space development have traditionally backed legislative efforts to create this kind of environment for commercial space.[6] They contend that space industries, if initially provided with the right conditions, can be expected to grow mostly on their own.[7] This is not to suggest, of course, that government assistance is unnecessary. To be sure, every new high technology industry, including the railroad,[8] commercial aviation,[9] and computer industries,[10] has enjoyed some form of federal assistance in its early stages. Nevertheless, supporters of space development envision an environment where market forces, rather than government bureaucrats, determine the outcome.

Procurement reform is one way to create a suitable environment for the commercial space sector to grow. At the outset, just as in the early days of computers or aviation, the government inevitably is one of the largest — and often *the* largest — customer for space goods and services. To ensure that space industries adapt to the commercial marketplace, however, it is imperative that government procurement actually mimic the marketplace, thereby enabling

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6. Glenn H. Reynolds, *Planting the Seeds of Commercial Space*, AD ASTRA, Jan.-Feb. 1993, at 18, 18-20.

7. *Id.*

8. Glenn H. Reynolds, *Structuring Development in Outer Space: Problems of How and Why*, 19 LAW & POL'Y INT'L BUS. 433, 445-46 (1987) (book review).

9. DAVID C. MOWERY & NATHAN ROSENBERG, TECHNOLOGY AND THE PURSUIT OF ECONOMIC GROWTH 189-94 (1989) (describing government assistance to commercial aviation industry, from Kelly Air Mail Act of 1925 through post World War II military research, development and purchases).

10. KENNETH FLAMM, TARGETING THE COMPUTER: GOVERNMENT SUPPORT AND INTERNATIONAL COMPETITION 110-12 (1987).

companies to become well-adapted to commercial realities. Consequently, a number of programs and proposals intended to produce market-like behavior and to allow "bootstrapping" into commercial areas are necessary.

One such procurement reform scheme uses vouchers to provide launches for microgravity and space researchers. Currently, researchers apply for experiment space on board the Space Shuttle or on government "sounding" rockets.[11] If their proposal is accepted, they receive a "free" flight.[12] If the government resources do not meet their needs, however, the researchers must make do, because they are permitted to choose only from the services that NASA provides.

Under a reform proposal now being implemented, the government would substitute vouchers for in-kind services. In other words, those whose research qualified for a flight would receive a government voucher, which they could then use to purchase either a government flight, or a commercial flight on board commercially supplied sounding rockets or microgravity research vehicles. Funding for the vouchers would thus take the place of funding for government-supplied hardware. This approach would make government purchasing more like a free market since actual purchasing control would be in the hands of the users, instead of government bureaucrats. If this approach were applied more broadly, it would allow commercial providers to become far more competitive in international markets.

Another method for creating an environment conducive to a commercial space sector is the "anchor tenancy" approach. This approach seeks to reward entrepreneurs who develop innovative products or services by allowing them to enter into long-term contracts with the government.[13] Under generally prevalent government contracting rules, an entrepreneur who approaches the government with a new product or service runs the risk that the

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11. *Impact of Start Agreements and Other Industry Incentives on Commercial Space Markets: Hearings Before the Subcommittee on Space of the House Committee on Science, Space and Technology*, 102d Cong., 1st Sess. 58-59 (1991) [hereinafter *Hearings*] (statement of Professor Glenn H. Reynolds).

12. *Id.*

13. *Id.* at 71.

government will agree with the project, then submit the project for bids, resulting in the possibility that the entrepreneur may not only lose the work to another company, but that the intellectual property is at risk. The anchor tenancy approach not only addresses these problems, but helps innovative companies grow from a more secure base than they would otherwise be capable of through traditional government contracting, in which even multi-year "contracts" are generally subject to termination at the convenience of the government. Anchor tenancy facilitates financing and allows entrepreneurs to treat the government as a mere customer, capable of entering the type of long-term contracts routinely made between private sector companies. The Omnibus Space Commercialization Act of 1993 reflects this philosophy.[14]

In addition, private industries should not be forced to compete with federally funded programs. Similar reasoning prompted Congress to support the Launch Services Purchase Act of 1990,[15] requiring NASA to procure its launch services commercially. Moreover, it seems reasonable that private industries should not have to compete with government programs financed by *foreign* taxpayers either. This belief has caused the United States to engage in various free-trade initiatives.[16]

For space ventures to succeed, innovators must also be able to capture the value of their innovations. Intellectual property reforms in the Patents in Space Act[17] and the Commercial Space Competitiveness Act,[18] as well as provisions in the new Landsat Act of

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14. Omnibus Bill, *supra* note 5, §§ 2, 508.

15. 42 U.S.C. §§ 2451, 2465b-65f (Supp. IV 1992).

16. For a survey of such issues see GLENN H. REYNOLDS & ROBERT P. MERGES, OUTER SPACE: PROBLEMS OF LAW AND POLICY (2d ed., forthcoming Aug. 1994); COMM. ON SCIENCE, SPACE, AND TECH., 102d Cong., 2d Sess., COMMERCIAL SPACE LAUNCH SERVICES: THE U.S. COMPETITIVE POSITION 7 (Comm. Print 1991). For a history and analysis of one such effort, see Glenn H. Reynolds, *International Trade Conflict in High Technology Sectors: The Japanese Satellite Example,* 12 UCLA PAC. BAS. L.J. (forthcoming 1994).

17. 35 U.S.C. § 105(a)-(b) (Supp. IV 1992); *see also* Glenn H. Reynolds, *Legislative Comment: The Patents in Space Act,* 3 HARV. J. L. & TECH. 13 (1990) (explaining the purposes and effects of this act).

18. *See* 15 U.S.C. §§ 5801-08 (Supp. IV 1992).

1992,[19] which permit market-based pricing and freedom from government censorship, embody this principle.[20] No one will invest in space activity, however promising, unless the problem of "free riders" is minimized and it appears that market forces, not the government, will determine the eventual success of the operation.

Procurement reform, anchor tenancy, limited government competition, and intellectual property protection are some of the philosophies that have guided commercial space legislation in the past, and they are the beliefs underlying the following comments regarding the proposed Omnibus Space Commercialization Act. 2In focusing on these beliefs, the following commentary discusses those aspects of the Act most worthy of attention.

THE OMNIBUS SPACE COMMERCIALIZATION BILL

The tax incentives contained in sections 102 and 401 through 406,[21] and the data and hardware procurement reforms outlined in sections 507 and 508,[22] serve as the most important aspects of the current bill.[23] This section provides an analysis of these parts, as

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19. 15 U.S.C. §§ 5611-15 (Supp. IV 1992).

20. Previous language in the Land Remote-Sensing Commercialization Act of 1984, as well as the regulations implementing it, had allowed for extrajudicial remedies against private remote-sensing operators whose imaging was deemed to infringe national security. 15 U.S.C. § 4201 (1988); *see* 15 C.F.R. § 960.16(a) (1993). These provisions were challenged by scholars and media representatives. *See* Robert P. Merges & Glenn H. Reynolds, *News Media Satellites and the First Amendment: A Case Study in the Treatment of New Technologies,* 3 HIGH TECH. L.J. 1 (1988); U.S. CONGRESS, OFFICE OF TECH. ASSESSMENT, COMMERCIAL NEWSGATHERING FROM SPACE: A TECHNICAL MEMORANDUM 30-33 (1987). This issue was addressed in the Land Remote Sensing Policy Act of 1992, which provides that such seizures may only be made pursuant to a warrant from a magistrate based upon a showing of probable cause. 15 U.S.C. § 5623(a)(6) (Supp. IV 1992). The amended statute therefore avoids First Amendment prior restraint problems. *See, e.g.,* Bantam Books, Inc. v. Sullivan, 372 U.S. 58, 70 (1962) ("Any system of prior restraints of expression comes to this Court bearing a heavy presumption against its constitutional validity."), and a substantial chilling of investment interest in satellite newsgathering systems.

21. Omnibus Bill, *supra* note 5, §§ 102, 401-06.

22. *Id.* §§ 507-08.

23. This author has previously testified on an earlier version of the Omnibus Space Commercialization Act. *See Hearings, supra* note 11, at 47-89.

well as an explanation of the remainder of the bill in order of importance.

Tax Incentives

Almost every new technological industry has received some form of government assistance in its early stages, including the railroad,[24] aviation,[25] and computer industries.[26] This assistance comes in a variety of forms, such as outright subsidies to the railroads[27] and aviation industries[28], under the Air Mail subsidy system, large-scale purchasing in the jet aircraft industry,[29] and research and development in the case of computers under DARPA.[30]

Two justifications underlie such governmental assistance. First, new industries produce general benefits to society which are not captured by the industries' investors. This "public good" aspect is a classic reason for governmental support. Second, high risks, uncertain returns, and relatively large capital requirements — all factors that tend to result in under-investment — characterize all new industries, particularly those in high technology fields such as the space industry.

Any approach focusing on the payment of direct operational subsidies, however, should be rejected by the government as a possible means of providing assistance to space enterprises. Such mechanisms severely distort the market, rewarding inefficient players and penalizing efficient ones. Although such subsidies have been used in the past, for instance, in the per-mile payments made to the builders of the first transcontinental railroad,[31] there

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24. Reynolds, *supra* note 8, at 445-46.
25. MOWERY & ROSENBERG, *supra* note 9, at 189-91.
26. FLAMM, *supra* note 10, at 110-12.
27. *See* Reynolds, *supra* note 8, at 445-46.
28. *See* MOWERY & ROSENBERG, *supra* note 9, at 188-90.
29. *Id.*
30. FLAMM, *supra* note 10, at 51-58.
31. *See generally* CHARLES E. AMES, PIONEERING THE UNION PACIFIC, A REAPPRAISAL OF THE BUILDERS OF THE RAILROAD 15-16 (1969); Thomas C. Cochran, *The Social Impact of the Railroad, in* THE RAILROAD AND THE SPACE PROGRAM: AN EXPLANATION IN HISTORICAL ANALOGY 163, 172-73 (Bruce

exist more productive alternatives. Instead of rewarding industries simply for existing, government policy should focus on assisting space industries in their initial development by rewarding or subsidizing on the basis of performance.

Tax incentives are usually a successful method of encouraging performance because they normally only reward companies that make money. By providing tax reductions for new industries, the government recognizes that if those industries are successful the government will ultimately recoup its investment several times over through increased economic activity resulting in greater overall tax revenues. Not all tax incentives, however, are created equal. In general, tax incentives that require companies ultimately to earn a profit, such as the long-term capital gains treatment on stock,[32] provide better incentives for production than those that, for example, provide an immediate deduction for investors who purchase stock.[33] Moreover, such profit-requiring incentives have the added advantage in that they only cost the government money if they are successful; the favorable tax treatment is inconsequential if the companies make no profits. Favorable tax treatment thus attracts capital by making the rewards of success greater, while still demanding success.

An analysis of the Omnibus Bill shows that it generally meets the requirements for a well-targeted tax incentive. One of several interesting tax incentives contained in the bill is section 102, which makes virtually all space-related activities and space transportation services, as defined in the Act, exempt from federal corporate taxes

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Mazlish ed. 1965); ARTHUR M. JOHNSON & BARRY E. SUPPLE, BOSTON CAPITALISTS AND WESTERN RAILROADS, A STUDY IN THE NINETEENTH-CENTURY RAILROAD INVESTMENT PROCESS 196-98 (1967).

32. *See* 26 U.S.C. §§ 1(h), 1221(1), 1221(3) (1988 & Supp. IV 1992).

33. A potential problem with Section 402 of the Omnibus Space Commercialization bill is that it makes purchases of "commercial space center" stock deductible. Omnibus Bill, *supra* note 5, § 402. While this approach certainly would attract capital to commercial space centers, it might (depending on details of implementation and fit with other tax provisions) lead to the creation of commercial space centers whose primary purpose is tax shelters. Although the use of this deduction as a tax shelter is unlikely, in light of the many changes since the 1986 tax act, it is not impossible, and the general point that tax incentives should focus on profits as opposed to stock purchases remains valid regardless of the likelihood of tax sheltering.

and federal excises, imposts, and other taxes, as long as they are conducted within (or when off-Earth, connected with) a commercial space center.[34] This incentive would certainly succeed in attracting more capital to the field, which is its obvious purpose. It would seem more logical, however, to place this section in Title IV, as that is where other issues pertaining to commercial space centers are addressed.[35] To avoid problems of excessive delegation of legislative authority, section 102, or the accompanying legislative history, should provide some guidance to the Secretary regarding criteria to be used in designating Commercial Space Centers.

Sections 401 through 406, meanwhile, create a number of special tax incentives for commercial space activities. Section 402 makes stock in commercial space centers deductible, subject to certain dollar and eligibility limitations and recapture provisions.[36] Section 403 makes gains on the sale of stock in "space corporations" (defined, roughly, as those receiving at least 75% of gross receipts from space-related activities) excludable from gross income, subject to a $100,000 per taxpayer limitation and a requirement that the gain be long-term capital gain.[37] Section 404 allows states to issue tax-exempt "exempt facility bonds" in support of space launch and space launch support facilities.[38] Section 405 makes income from space manufacturing excludable from gross income, and products of such manufacturing exempt from all federal excises and taxes.[39] Finally, section 406 encourages states to offer tax and other incentives in support of commercial space activities.[40]

Taken together, these provisions constitute a powerful collection of incentives, which would encourage the flow of investment capital into the industry at relatively low cost to the U.S. Treasury. Sections 404 and 405 appear eminently logical and uncontroversial.

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34. Omnibus Bill, *supra* note 5, § 102(b)(1)-(2).
35. *Id.* § 402.
36. *Id.* § 402(a).
37. *Id.* § 403(a).
38. *Id.* § 404(a), (e).
39. *Id.* § 405(a).
40. *Id.* § 406.

Section 404 adds space facilities to the collection of other infrastructure (such as airports, wharfs, etc.) that have traditionally been considered appropriate for tax-free financing. Adding spaceports and similar facilities to this collection is consistent with the policy behind exempt facility bonds.[41] Although section 404 would certainly help the industry, it seems unlikely that enough such facilities will be constructed to issue the number of tax-free bonds needed to have much revenue impact. Section 405, which makes income from space manufacturing tax exempt, would provide a mild stimulus to space manufacturing, but is also unlikely to have any major revenue impact. There is simply too little space manufacturing activity at present, and its dollar value is unlikely to be large enough to have much revenue impact in the near future.

Sections 102, 402, and 403 are likely to be somewhat more controversial. Depending on the criteria for designating "commercial space centers" and "space corporations," these provisions could result in a substantial influx of capital. This is both good and bad. Since capital shortage is a key problem for space industries, the influx of capital is beneficial, at least to the extent that the industry can absorb the capital in promising enterprises. On the other hand, the favorable tax treatment could be unfavorable because it is much more likely to cause political controversy. Opponents will argue that these provisions will result in the creation of commercial space centers and space corporations whose investors are primarily interested in tax benefits. The possibility of shelters is likely to create problems with the Ways and Means Committee, the Office of Management and Budget, and other governmental and political entities. Nevertheless, tax incentives are the best way of encouraging space industries because they require companies to produce worthwhile products and services, and if they fail to make a profit, the tax benefits (except for stock deductibility) are largely worthless. Thus, the politicians have little to worry about because

41. *See* I.R.C. § 142 (1994); *see also* 4 U.S. TAX REP. (Research Inst. Am.) § 1420 (1993) (exempt facility bonds create a tax exemption for tax qualified interest income from private activity bonds used to finance government owned facilities).

to the extent that companies fail to make a profit, the tax benefits cost the government very little.

The Omnibus Bill's tax incentives also meet the criteria that the Clinton Administration has set out for subjects of preferential capital gains treatment.[42] The Administration has supported *targeted* tax incentives, rather than the full-scale capital gains tax reduction advocated by the Bush Administration.[43] The guidelines suggested by the Clinton Administration involve the following: (1) incentives for *new* businesses and new investments rather than existing ones, (2) support for strategic industries, and (3) support for ventures involving new technologies.[44] All of these guidelines argue for applying special tax incentives to commercial space ventures.

There is yet further precedent for granting tax incentives to the commercial space industry. The United States has traditionally provided tax incentives to businesses that locate in underdeveloped areas, for example, providing special tax treatment for investments in Puerto Rico, U.S. possessions, and certain Caribbean Basin nations.[45] Similarly, outer space is an underdeveloped area, one that is short on infrastructure yet high in risk. It is prudent, therefore, to provide special tax incentives to encourage entrepreneurs to invest in the development of space, a prospect that many investors may otherwise find too risky. The United States also has a history of encouraging strategic industries through tax incentives as a means of promoting its international competitiveness in high-technology areas, as illustrated by the research and development tax credit and other tax incentives for high-technology industries.[46] The incentives proposed for the commercial space sector merely continue this tradition.

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42. *See generally* John Lee, *President Clinton's Capital Gains Proposals*, 59 TAX NOTES 1399 (1993) (discussing President Clinton's capital gains proposals in detail).

43. *Id.* at 1411.

44. *Id.* at 1415 n.77.

45. 26 U.S.C. § 936 (1988).

46. *See, e.g.*, I.R.C. §§ 28-29, 41 (1988) (providing tax credits for increasing research activity for certain drugs, for clinical testing expenses for rare diseases, and for producing fuel from a non-conventional source, respectively).

Unfortunately, some legislators appear headed in the exact opposite direction on the issue of tax incentives. For instance, several members of the Senate are proposing special taxes on companies in the Global Positioning System (GPS) industry.[47] An illustration of the early success of this fledgling commercial space industry is the military's reliance on commercial GPS handsets during the Gulf War.[48] It is counterproductive to target such an industry with additional taxes just as it begins to experience success. Hopefully, more enlightened legislators will prevent such efforts from taking effect.

Procurement Reform

Section 508 is designed to promote the commercial procurement of space goods and services by establishing an experimental program for innovative procurements utilizing advanced technology. The existing procurement environment adversely affects companies in several ways. First, they are unable to transact with the government and their commercial customers on the same terms and conditions.[49] Second, if companies adapt to the unique environment of government contracting, they are less likely to become competitive in the commercial arena. Allowing a program to fall behind schedule for one year, while typical in a government

47. *See, e.g.*, Letter from Paul T. Sakai, Director of Tax, Trimble Navigation to Fred T. Goldberg, Jr., Assistant Director of Tax Policy, Department of the Treasury, 92 TAX NOTES TODAY, July 16, 1992, at 145-47 (estimating the passage of proposed taxes on GPS would increase costs to American companies by 12-20%). The GPS is a network of U.S. "radio navigation satellites that allows an object on earth to precisely locate and accurately time-lag itself 24 hours a day in all weather conditions." *Id.*

48. *See, e.g.*, James R. Asker, *Space Key to U.S. Defense*, AVIATION WK. & SPACE TECH., May 3, 1993, at 57.

49. For instance, if a commercial company approaches NASA and convinces the responsible officials that its approach addresses a problem, current law and practice will likely require that the new approach be put out for bids. *See generally* 48 C.F.R. §§ 1814, 1815 (1993) (NASA's bidding procedure). Current practice both undermines the company's intellectual property, and reduces incentives for such companies to approach the government in the first place. This will not occur in the private sector.

contracting environment,[50] often proves fatal in a commercial one. Finally, companies often lack trust for the government officials with whom they deal because these officials cannot make promises without the risk — indeed the likelihood — that Congress will later alter the rules.[51]

The examples above are problems endemic to the government procurement system, a system based on an enormous unwillingness to grant government contracting officials the same discretion commonly granted to procurement personnel in the private sector. Although the lack of discretion has the salutary effect of limiting corruption, it produces enormous costs in return.[52] Since reforming the entire government procurement system would be a colossal task, many people have urged that the government experiment with streamlined systems in particular areas.[53] Given its enormous importance, the existing national commitment to its success, and its relatively small size when compared to other sectors such as health or defense, the commercial space sector would be an excellent laboratory for procurement reform experiments.

Ideally, the government would act exactly like a commercial customer, thereby enabling commercial space companies to become well adapted to competitive markets. If commercial space companies are to become well adapted to serving commercial customers, the government, often the first and largest customers of

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50. *See* Jerry Mashaw, *The Fear of Discretion in Government Procurement*, 8 YALE J. ON REG. 511, 517 (1991) (book review).

51. Spacehab seems to have faced this problem. *See NASA's Commercial Space Programs: Hearings Before the Subcomm. on Space of the House Comm. on Science, Space, and Technology*, 103d Cong., 1st Sess. 17-20 (1993) (statement of Gregory Reck, Acting Associate Administrator, NASA's Office of Advanced Concepts & Technology).

52. *See generally* STEVEN KELMAN, PROCUREMENT AND PUBLIC MANAGEMENT: THE FEAR OF DISCRETION AND THE QUALITY OF GOVERNMENT PERFORMANCE (1990). Professor Kelman, of the Kennedy School of Government, argues that the detailed rules imposed on government contracts in the hopes of preventing waste and abuse have the paradoxical effect of wasting large amounts of government money and rendering government contractors less competitive than in the private sector. *Id.* at 88-90. The author concurs with Professor Kelman, for this phenomenon certainly exists in the space field.

53. *See, e.g.*, Mashaw, *supra* note 50, at 519 (discussing Professor Kelman's argument for experiments in procurement reform in selected areas).

space companies, will have to mimic those customers in its course of dealing. Although allowing the government to act like a commercial customer might require significant changes in existing procurement laws and practices (or at least exceptions to them), such changes would be worthwhile if they helped the commercial space sector to flourish.

The voucher scheme also represents a positive start in procurement reform. The National Performance Review (NPR) team,[54] for example, thought that an expansion of voucher-type procurement in the space area would make an excellent "reinvention lab" experiment that might lead to more general procurement reform.[55] Unfortunately, the NPR team and NASA were unable to agree on an implementation plan in time for inclusion in the NPR's report, though the author understands that such efforts are to continue under the direction of NASA Administrator Goldin. Congress should expand the voucher program on its own, however, to supplement NASA's efforts.

One plausible approach for Congress to undertake would be to implement a graduated system of microgravity research vouchers, in which experimenters could logically progress from laboratory work, to drop-tower research, parabolic aircraft flights, suborbital flights, and ultimately to orbital flights, entirely under a voucher-based system. Under such a system, vouchers for most of these experiments — drop-towers and aircraft flights — would be very cheap, measured in the thousands of dollars. Vouchers for the suborbital and orbital flights would be somewhat more expensive, but less common since only the promising experimental approaches would get this far. The key to a voucher program is to keep control in the hands of the customer, the experimenter, so that companies competing for voucher business would devote their efforts to serving experimenters' needs. The advantages of this

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54. The NPR team consisted of a team of "experienced federal employees from all corners of the government." AL GORE, FROM RED TAPE TO RESULTS, CREATING A GOVERNMENT THAT WORKS BETTER & COSTS LESS, REPORT OF THE NATIONAL PERFORMANCE REVIEW i (1993) [hereinafter RED TAPE].

55. AL GORE, ACCOMPANYING REPORT OF THE NATIONAL PERFORMANCE REVIEW, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION 7-8 (1993) [hereinafter ACCOMPANYING REPORT].

approach are twofold. First, as a result of competition, experimenters would get better service for less money. More importantly, the companies that succeed in competing for voucher business will have developed the precise skills that are necessary to compete for additional commercial business. In short, such an approach will allow the commercial space industry to "grow" gradually, with government procurement providing the initial impetus for markets that will ultimately flourish on their own.

Although the procurement reform provisions of the Omnibus bill[56] are somewhat less ambitious than the approach previously described, they are consistent with it. The size of the reforms, however, could be important. While the reforms suggested by the Bill are on a small experimental scale, any "experimental" procurement reform program must be large enough and involve sufficient procurements over time to develop a meaningful experience base. Otherwise, the reform may be a waste of time because any program advertised as "experimental" may not succeed in attracting enough capital to develop a self-sustaining industrial base in the field, as investors are likely to be cautious about risking money for projects labelled experimental. Thus, perhaps the Bill should set a higher floor for the number of procurements that will be subject to the experimental system.

Purchase of Space Science Data

Section 507 of the Omnibus Bill requires that to the maximum extent possible, NASA shall purchase space science *data* from commercial vendors, rather than undertake the gathering of such data itself. This proposal deserves particular praise because it will help to promote the growth of commercial industries and is likely to allow the federal government to get more science for less money. In light of embarrassing, and expensive, failures like the Hubble Space Telescope and the Mars Observer spacecraft,[57] a

56. Omnibus Bill, *supra* note 5, § 508.

57. *See generally* William Harwood, *Hope Fades of Recouping Mars Probe, NASA Efforts to Contact Craft Fail as Critical Point in Mission Nears*, WASH. POST, Aug. 24, 1993, at A1; William Harwood, *Mars Probe Silent as Final*

data purchase approach makes eminent sense. Contractors who sell data, as opposed to hardware, have a much greater incentive to ensure that the hardware used to gather the data works long enough to gather the data that they are selling. Contractors will also demand that the hardware be as inexpensive as possible in order to increase their profits. Furthermore, NASA should be a research and development agency, not a trucking, construction, or airline company, concerned strictly with the mechanics of space travel. Instead, NASA should limit its efforts to only those enterprises that are unique, and focus its intellectual and technical resources where they are the most effective. Otherwise, it should let the private sector do as much as possible.

A data purchase approach, as opposed to a space hardware approach, provides contractors with the incentives to use effective and functional equipment with which to gather data on space missions. Contractors who sell hardware have an incentive simply to deliver the hardware whether it works or not.[58] Contractors who sell data, on the other hand, have every incentive to see that the hardware used to gather the data works long enough to deliver the data, or else they will not get paid. Furthermore, since the contractor who provides data is paid for results rather than effort, the contractor has every incentive to perform the mission as cheaply as possible and is concerned with producing those results with as little effort as possible. Although these economic gains are captured by contractors in the short run, they will benefit all space activity over the longer term by promoting greater efficiency and lower costs. In recognizing these exact factors, Vice President Gore's NPR team has recommended a data purchase approach for

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Deadline Passes, Concern Over $1 Billion Program Increases, but Efforts Continue to Locate Spacecraft, WASH. POST, Aug. 26, 1993, at A1; Kathy Sawyer, *Flight Plan Change May Have Caused Loss of Mars Probe*, WASH. POST, Jan. 10, 1994, at A1; Kathy Sawyer, *House Panel Examines NASA's 'Midlife Crisis,' Witnesses Say Oversight of Contractors is Lax*, WASH. POST, Aug. 2, 1991, at A4; *U.S. Seeks Payment for Hubble Flaw, Telescope Maker Said to Have Withheld Data*, WASH. POST, Oct. 19, 1992, at A7.

58. *See, e.g.*, Liz Tucci, *NASA Settles with Maker of Flawed Hubble Mirror*, SPACE NEWS, Oct. 11-17, 1993, at 4 (reporting that NASA has settled with Perkin-Elmer for $25 million, although cost of Hubble repairs will reach $250 million not counting the cost of the shuttle flight needed for the repair work).

NASA.[59] Given the inclusive makeup of the NPR team,[60] it is evident that this approach has widespread support.

Although the data purchase approach may be sensible, it may not be endorsed by the "business as usual" constituencies of the space community because it represents a substantial departure from the present situation. Given space contractors' recent track record, however, such a departure makes sense. After the Hubble Space Telescope and Mars Observer fiascoes,[61] and the recent LANDSAT crash,[62] the "business as usual" approach appears to be a "failure as usual" approach. Thus, at the very least, an argument for adopting the data purchase approach is that it is time to try any method different from the prior hardware procurement process.

In fact, the recent loss of LANDSAT 6 offers an excellent opportunity for the government to try a data-purchase approach. For example, a government announcement that it would purchase LANDSAT-like multi-spectral imagery to fill the gap until LANDSAT 7 is launched (and perhaps afterward) would almost certainly bring forward a number of companies interested in competing for the contract. Such an approach would very likely produce high-quality imagery long before LANDSAT 7 is operational.[63]

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59. RED TAPE, *supra* note 54, at 147. The NPR's Recommendation No. NASA01 calls for "contracting out for data instead of hardware whenever appropriate." *Id.* For the entire text of Recommendation No. NASA01, see ACCOMPANYING REPORT, *supra* note 55, at 5-9.

60. RED TAPE, *supra* note 54, at 1.

61. *See* sources cited *supra* note 57.

62. Kathy Sawyer, *Lost: $228 Million U.S. Satellite, Disappearance is Fourth Space Failure in Two Months*, WASH. POST, Oct. 9, 1993, at A1.

63. Currently, there are two remote-sensing systems: the U.S. LANDSAT system, and the French SPOT system. Both provide images incorporating various wavelengths of visible and invisible light, and are useful in, among other things, map-making, crop forecasting, mineral exploration, news gathering, forestry. *See* Kenneth Gatland, *Observing Planet Earth*, *in* THE ILLUSTRATED ENCYCLOPEDIA OF SPACE TECHNOLOGY, A COMPREHENSIVE HISTORY OF SPACE EXPLORATION 106-115 (1981). American development of a multi-spectral imagery capability would help ensure that the U.S. is not held hostage by a *de facto* monopoly on the part of the French system, SPOT.

Legal Environment

Section 503 provides that the National Space Council, together with the Office of Space Commerce, shall report on laws[64] and treaties that affect space commercialization.[65] One of the great weaknesses in the space industry is the lack of knowledge concerning the overall legal environment and its impact on actual enterprises. Although this section has little "sex appeal," except perhaps to the occasional professor of space law, it is nonetheless very important. Presently, the mass of domestic law affecting space business, ranging from tax law to intellectual property to antitrust, is not well understood. Furthermore, many issues of state law are unclear. Thus, Congress would significantly benefit space commercialization by clarifying the legal environment for space activity. Although some aspects of space activity are covered by federal law under the Commercial Space Launch Act[66] and the Land Remote Sensing Policy Act of 1992,[67] much of the law governing space activity is state law, such as security interests,[68] torts,[69] or trade secrets.[70] Yet as some cases have already illustrated, state law is often poorly suited to space activities.[71]

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64. It should be made clear that in this context the term "laws" includes administrative regulations and even informal administrative practices, which may have effects that are just as important as statutes or treaties, although perhaps less obvious.

65. Omnibus Bill, *supra* note 5, § 503.

66. 49 U.S.C. § 2601 (1988 & Supp. III 1991).

67. 15 U.S.C. § 5601 (Supp. IV 1992).

68. *See generally* REYNOLDS & MERGES, *supra* note 16; Richard D. Cunningham, *Space Commerce and Secured Financing — New Frontiers for the U.C.C.*, 40 BUS. LAW. 803, 816-19 (1985).

69. *See* REYNOLDS & MERGES, *supra* note 16, at ch. 8 (discussing tort issues).

70. Dan L. Burk, *Protection of Trade Secrets in Outer Space Activity: A Study in Federal Preemption*, 23 SETON HALL L. REV. 560, 581 (1993) (citing Glenn H. Reynolds, Review, 27 JURIMETRICS J. 431, 436 (1987) and discussing U.S. CONGRESS OFFICE OF TECH. ASSESSMENT, SPACE STATIONS AND THE LAW: SELECTED LEGAL ISSUES - BACKGROUND PAPER (1986)).

71. Some lawsuits over space activity have already been filed in state courts. *E.g.*, Appalachian Ins. Co. v. McDonnell Douglas Corp., 262 Cal. Rptr. 716 (1989); Lexington Ins. Co. v. McDonnell Douglas Corp., No. 481713 (Cal. Super. Ct., Orange Cty., May 23, 1990). Others have been filed in federal district courts, but have invoked state law. *See, e.g.*, Martin Marietta Corp. v. International

Furthermore, it is often unclear as to what state law is appropriate, or which state's law should be applied.[72] Moreover, since space activity has, at least potentially, important international ramifications, there is an additional argument against the application of state law or decisions by state courts.

Given the difficulty of addressing such matters through piecemeal state legislation, Congress should try a more comprehensive nationwide approach. It is unclear as to how the National Space Council ("NSC") will participate in this venture.[73] Although the Administration has not formally abolished the NSC (which would require legislation from Congress), there is presently no "Director of the National Space Council" who can perform this task. Thus, perhaps this provision should be amended to provide the Assistant Director for Space of the Office of Science and Technology Policy with the duty to report on the laws that affect space commercialization.

Creating a New Legal Jurisdiction

An influential Office of Technology Assessment study[74] voiced two key concerns about space law: (1) the need for an evolutionary system that would allow space law to develop as needed

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Telecommunications Satellite Org., 991 F.2d 94 (4th Cir. 1993). The Fourth Circuit's poor handling of this case is an excellent argument for clarifying the law governing space activities. For a brief and clear discussion of the problems created by the Fourth Circuit's reliance on Maryland law in this case, see J.E. Curtin, *Wave Goodbye to Cross-Waivers,* SPACE NEWS, Oct. 11-17, 1993 at, 15. Congress should correct the Fourth Circuit's reading of the Commercial Space Launch Act Amendments through appropriate legislation.

72. *See* Martin Marietta Corp. v. International Telecommunications Satellite Org., 991 F.2d 94, 97 (4th Cir. 1993); Burk, *supra* note 70, at 583.

73. The NSC was created by President Bush to advise and assist the President on national space policy and strategy. Exec. Order No. 12,675, 54 Fed. Reg. 17,691, 17,692 (1989).

74. U.S. CONGRESS, OFFICE OF TECH. ASSESSMENT, SPACE STATIONS AND THE LAW: SELECTED LEGAL ISSUES - BACKGROUND PAPER (1986) [hereinafter BACKGROUND PAPER]; *see also* Glenn H. Reynolds, Review, 27 JURIMETRICS J. 431 (1987) (discussing Office of Technology Assessment Background Paper and suggesting responses).

without the rigidity of an all-encompassing *a priori* Space Code[75], and (2) the need for space activity to be free from conflicting, inconsistent and possibly parochial state law.[76]

There is precedent for creating specialty courts to deal with the specific needs of a particular industry. For example, admiralty jurisdiction was granted to federal courts to decide matters affecting the maritime industry.[77] This special federal jurisdiction was created in response to essentially the same kinds of problems facing the space industry. The shipping industry, and maritime commerce generally, were seen as being particularly important to the nation.[78] The success of these industries was seen as depending, in part, on the existence of stable yet flexible law at a national level, free from inconsistent and possibly self-serving state laws.[79] It was thought that a special federal jurisdiction would allow the federal courts to address these concerns in the context of a national forum, so that a body of law attuned to the real needs and practices of the industry could develop without either the balkanizing effect of multiple state laws or the need for each provision to survive the delays and vagaries of the legislative process.[80] In addition, by placing maritime cases (which often have important international implications) in federal courts, the jurisdictional grant was intended to harmonize international relations since the decisions of federal courts were likely to receive greater respect from foreign nations than were those of state courts.[81]

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75. BACKGROUND PAPER, *supra* note 74, at 7.

76. *Id.* at 9-10.

77. U.S. CONST. art. III, § 2, cl. 1. The current language can be found at 28 U.S.C. § 1333 (1988).

78. Charles L. Black, Jr., *Admiralty Jurisdiction: Critique and Suggestions,* 50 COLUM. L. REV. 259, 261 (1950).

79. *Id.* at 261-62.

80. *Id.* at 262; John F. Baughman, Note, *Balancing Commerce, History, and Geography: Defining the Navigable Waters of the United States*, 90 MICH. L. REV. 1028, 1031-33 & n.37 (1992).

81. John P. Frank, *Historical Bases of the Federal Judicial System,* 13 LAW & CONTEMP. PROBS. 3, 14 (1948). For a thorough discussion of the history of admiralty jurisdiction, *see* Black, *supra* note 76, at 262-72; Frank, *supra*, at 6-7, 13-14 (suggesting special connection between maritime industry and international relations as a key justification for admiralty jurisdiction). *See generally* Harrington Putnam, *How the Federal Courts Were Given Admiralty Jurisdiction,*

Although simply transplanting the existing maritime law into the space context would not be appropriate, Congress should seriously consider an analogous grant of jurisdiction to the federal courts for the space industry.[82] Since all of the concerns listed above also exist in the space context, and since the Admiralty approach is generally regarded as having been successful,[83] a special space jurisdiction may have a significant beneficial effect on the space industry. A reasonable approach could be to vest jurisdiction in the District Court for the District of Columbia where many suits concerning space law have been filed already.[84] Appeal could be directed to the Court of Appeals for the District of Columbia, whose considerable expertise in technology related administrative law cases would ensure competence in understanding space cases. Any such jurisdictional grant, however, should be accompanied by language providing general guidance for the courts in this area. Although the issue of a special jurisdiction is not covered in the Omnibus bill, and it may not be the time to propose such legislation, the topic should certainly be considered in the study proposed in the Omnibus bill.[85]

Antitrust Protection for Joint Ventures

The Omnibus bill provides substantial antitrust protection from antitrust limitations for joint research and development ventures.[86]

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10 CORNELL L.Q. 460 (1925).

82. BACKGROUND PAPER, *supra* note 74, at 10; Cunningham, *supra* note 66, at 817; Elizabeth A. Pucciarelli, Note, *The Case for a Federal Common Law of Space,* 33 N.Y.L. SCH. L. REV. 509, 527-28 (1988).

83. Black, *supra* note 78, at 280.

84. *See, e.g.*, TGS Tech., Inc. v. United States, Dep't of Air Force, 37 Cont. Cas. Fed. (CCH) ¶ 76,259 (D.D.C. Jan. 14, 1992); New York Times Co. v. NASA, 782 F. Supp. 628 (D.D.C. 1991); Florida Coalition for Peace and Justice v. Bush, No. Civ. A. 86-2682-OG, 1990 WL 157934 (D.D.C. 1990); Atlas Contractors, Inc. v. Martin Marietta Corp., No. Civ. A. 87-1344 SSH, 1988 WL 4236 (D.D.C 1988); New York Times Co. v. NASA, 679 F. Supp. 33 (D.D.C. 1987); Boisjoly v. Morton Thiokol, Inc., No. Civ. A. 87-0194, 1987 WL 11217 (D.D.C. 1987); United States v. Morton Thiokol, Inc., 34 Cont. Cas. Fed. (CCH) ¶ 75,260 (D.D.C. Apr. 15, 1987).

85. Omnibus Bill, *supra* note 5, § 503.

86. *Id.* § 501.

Such protection is warranted because there is currently little reason to fear monopolization by American companies given foreign market control of most of the world's commercial-launch market.[87] Limiting cooperation among American companies thus would seem self-defeating, especially since some experts have identified joint ventures, in both research and production, as particularly important in high-technology fields.[88] This approach is also consistent with that of the Clinton Administration, which has promoted such joint ventures in other strategic industries, such as automobiles and jet aircraft.[89] Although some may argue that the National Cooperative Research Act of 1984[90] provides sufficient protection in this area, the author's practical experience indicates that many members of the business community are not sufficiently reassured by this Act. It is not clear, however, whether the language provided in the bill would be adequate to reach all joint ventures in the field, as antitrust protection for joint *production* ventures, thus ensuring protection beyond joint research and development, may be worthwhile as well.

Definitions in the Omnibus Bill

This section comments upon several definitions contained in the Omnibus Bill. The definition of "commercial provider"[91] should be amended to read "any person *other than a governmental entity* providing space transportation services or other space-related activities." The definition of "payload"[92] correctly includes suborbital payloads, thus bringing suborbital flights within the

87. In the space launch field one foreign competitor, Arianespace, controls more than half the market. *See The Island Race & The Island Earth*, THE ECONOMIST, Mar. 17, 1990, at 13.

88. *See, e.g.*, Thomas M. Jorde & David J. Teece, *Innovation, Cooperation, and Antitrust: Striking the Right Balance*, 4 HIGH TECH. L.J. 1, 1, 36-54 (1989). *But see* Joel Eisen, *Antitrust Reform for Joint Production Ventures*, 30 JURIMETRICS J. 253, 261 (1990) ("Antitrust laws are not a large barrier to consortia formation.").

89. *See* H.R. 1313, 103d Cong., 1st Sess. § 2(a)(2) (1993).

90. 15 U.S.C. § 4301 (1988).

91. Omnibus Bill, *supra* note 5, § 3(1).

92. *Id.* § 3(2).

purview of the new language contained in the Space Transportation Services Act.[93] The definition is appropriate because suborbital launches, being the cheapest and most numerous type of launches, offer the most fertile ground for new entrepreneurial ventures. The definitions of "space launch and launch support facilities,"[94] "space transportation services,"[95] and "space transportation vehicle"[96] likewise recognize suborbital launches. The definition of "space-related activities,"[97] however, does not clearly include activities related to suborbital missions and should be clarified to read: "the term 'space-related activities' includes research and development, manufacturing, processing, service, and other activities associated with, or in support of, orbital and suborbital launches and activities in space."

Inventory of Facilities

Section 101 calls for the Comptroller General to inventory all space launch and space launch facilities owned by the United States.[98] Each item would be categorized as either "surplus" or "non-surplus" to public or national security needs.[99] Support for such decisions would also be required.[100] This inventory would be submitted to Congress no later than twelve months after the Omnibus Bill is enacted.[101] Making surplus government facilities available to commercial entities is strongly recommended. The way in which bureaucracies work, however, suggests that few government project managers would be inclined to identify equipment in their possession as "surplus" — instead, the attitude is often "we might need it sometime." Thus, any inventory under this provision should not be carried out by survey or questionnaire,

93. 15 U.S.C.A. § 5802(9) (West Supp. 1994).
94. Omnibus Bill, *supra* note 5, § 3(5).
95. *Id.* § 3(7).
96. *Id.* § 3(8).
97. *Id.* § 3(6).
98. *Id.* § 101(a).
99. *Id.*
100. *Id.* § 101(b).
101. *Id.*

but rather by some mechanism to overcome this unreasonable phenomenon. It might also be advantageous to make the entire inventory of equipment (both surplus and non-surplus) available for public inspection, with some mechanism to identify equipment desired by a particular enterprise and to have its status as surplus or non-surplus reevaluated at their request.

Purchase of Space Transportation Services

Section 203 would amend language contained in the existing Launch Services Purchase Act of 1990,[102] to remove a number of loopholes and limitations. Most significantly, this section would now regulate all federal government payloads, including ones that do not meet strict criteria.[103] This extension is both desirable and justified, as it will help to promote the overall goal of making government act like a commercial customer.

CONCLUSION

The creation of an entirely new industry is a daunting task. Legislating for a fledgling industry is an even more difficult endeavor. There is probably only one parallel in United States history to use as a yardstick for the legal development of the commercial space industry: the history of the aviation industry in its early days. In the 1920s, 1930s, and again in the 1950s, a group of farsighted legislators and administration officials worked to create the legal and regulatory regime that established U.S. preeminence in the civil aviation field.[104] Although their work received relatively little attention at the time,[105] it laid the foun-

102. 42 U.S.C. § 2451 (Supp. III 1991).

103. Omnibus Bill, *supra* note 5, § 203.

104. MOWERY & ROSENBERG, *supra* note 9, at 190-93, 200-01.

105. At the time, the legal structure regarding aviation did not look very important because airplanes, whatever their military value or scientific interest, were not thought to be a significant part of economic activity. Now, of course, aviation is one of America's major exports and is an underpinning to many of the world's largest industries.

dation for decades of U.S. dominance in civil aviation — a dominance that in large part continues to this day.[106]

It seems likely that space will play a role in the economy of the next century, similar to aviation's role in the economy of the twentieth century. With luck and foresight, the legislative cornerstones set forth in this Bill will be part of the foundation upon which U.S. strength in space industries will be built over the next hundred years.

106. *See* MOWERY & ROSENBERG, *supra* note 9, at 193.

APPENDIX

103D CONGRESS
1ST SESSION

H. R. 2731

A BILL
To encourage the development of a commercial space industry in the United States, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES
JULY 23, 1993

MR. WALKER (for himself, MR. FAWELL, MR. SMITH of Michigan, and MR. ROHRABACHER) introduced the following bill; which was referred jointly to the Committees on Science, Space, and Technology, Ways and Means, Natural Resources, Agriculture, and the Judiciary

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the " Omnibus Space Commercialization Act of 1993".

SEC. 2. FINDINGS.

The Congress finds that —

(1) the exploration of space holds the potential for vast new enterprises which will benefit the United States and all of mankind;

(2) inevitably where exploration has taken place commercial activity follows;

(3) the development of a robust commercial space industry in the United States is required to restore and maintain United States world leadership in the exploration, development, commercialization, and settlement of space and to maintain the health and growth of the national economy, meet national security objectives, and sustain the position of the United States as a world power;

(4) the United States is in danger of losing its leadership position in space transportation;

(5) the Federal Government should encourage, facilitate, and

promote the United States commercial space industry, including the development of commercial launch facilities, in order to ensure United States economic preeminence in space;

(6) creation of a space infrastructure and transportation industries in a timely, profitable, innovative, and sustainable manner can be accomplished only by private enterprise;

(7) incentives are needed to be put in place for private enterprise to undertake the high risk venture of commercial space industrialization; and

(8) commercial space activity presents unique legal problems that need to be clarified before the full industrialization of space can go forward.

SEC. 3. DEFINITIONS.

For purposes of this Act —

(1) the term "commercial provider" means any person providing space transportation services or other space-related activities;

(2) 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) the term "Secretary" means the Secretary of Transportation;

(4) the term "space infrastructure" means all facilities, equipment, and real property (including ranges) used to perform space-related activities;

(5) the term "space launch and launch support facilities" means space infrastructure used-

(A) to prepare space transportation vehicles and their payloads for transportation to, from, or within outer space, or in suborbital trajectory; or

(B) to launch such vehicles;

(6) the term "space-related activities" includes research and development, manufacturing, processing, service, and other associated and support activities;

(7) 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;

(8) 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;

(9) the term "United States person" means an individual, corporation, commercial provider, or other entity organized under the laws of the United States or a State, Commonwealth, territory, or possession of the United States which is —

(A) more than 50 percent owned by United States nationals; or

(B) a subsidiary of a foreign company and the Secretary 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 Act;

(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); and

(10) the term "antitrust laws" has the meaning given it in section 1(a) of the Clayton Act (15 U.S.C. 12(a)), except that such term includes sections 2 through 6 of the National Cooperative Research Act of 1984 (15 U.S.C. 4301 through 4305), and includes section 5 of the Federal Trade Commission Act to the extent that such section 5 applies to unfair methods of competition.

TITLE I—SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES

SEC. 101. INVENTORY OF FACILITIES.

(a) INVENTORY.—The Comptroller General shall conduct a comprehensive inventory of all space launch and launch support facilities owned by the United States Government and shall identify such facilities that are surplus to public and national security needs. This subsection shall be carried out in cooperation with the Department of Defense, the National Aeronautics and Space Administration, the Department of Transportation, the Department of Commerce, and the General Services Administration.

(b) REPORT.—Not later than 12 months after the date of enactment of this Act, the Comptroller General shall submit to the Congress a report containing the inventory and identification required under subsection (a), including an item by item justification of why each facility is or is not identified as surplus. Portions of such report may be classified and protected from public disclosure if such classification is essential to protect national security.

(c) REFERRAL FOR SALE.—All facilities identified under this section as surplus shall be referred to the General Services Administration for disposition.

SEC. 102. COMMERCIAL SPACE CENTERS.

(a) DESIGNATION.—The Secretary shall establish criteria for the designation of Commercial Space Centers. The Secretary shall, in accordance with such criteria, designate appropriate launch facilities as Commercial Space Centers.

(b) BENEFITS OF DESIGNATION.—Commercial Space Centers, all property located therein, all space transportation services and

space-related activities carried out therein, and all products and services created, processed, manufactured, or otherwise arising from such space transportation services and space-related activities, including such services and activities in space as are launched from a Commercial Space Center and products created, manufactured, or processed in connection therewith, and proceeds from insurance policies insuring such services and activities, shall be exempt from —

(1) all Federal corporate income and other taxes; and

(2) all Federal excises, imposts, duties, and any and all other Federal tariffs.

SEC. 103. PUBLIC LAND FOR NEW SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES.

(a) FACILITATION OF PROPOSALS.—The Secretary of the Interior and the Secretary of Agriculture shall facilitate proposals by commercial providers, with or without the participation of State and local governments, to establish new space launch and launch support facilities on public lands administered through their respective departments through sale, lease, grant of overflight and clearance easements, or other transfer of such lands, and shall ensure timely review and decision regarding such proposals.

(b) LEASES.—Leases described in subsection (a) shall be to commercial providers for periods of 30 years, with options to extend for an additional 20 years. Parties signing such a lease shall enjoy occupation and use of the lands without charge for the first 10 years of the term of the lease. The annual lease price for the remaining 20 years, and for any period of extension, of the lease shall be based on fair market value at the time of the submission of the initial request for use of the land, except that lands used for livestock grazing at the time of the signing of a lease shall be leased at the rate charged for grazing access.

(c) WILDERNESS, RECREATION, AND PARK AREAS.—(1) Except as provided in paragraph (2), no wilderness area, national recreation area, or national park, or any part thereof, shall be transferred as described in subsection (a).

(2) Overflight easements for extra-atmospheric flight may be granted over such areas if the Secretary of Transportation finds that danger to the general public is not significantly increased thereby.

(d) NONCONTIGUOUS LAND PARCELS.—Land parcels sold, leased, or otherwise made available under this section need not be contiguous. Road and communication easements shall be granted wherever practical to link such parcels.

(e) COMPATIBLE USES.—Proposers shall be encouraged to submit proposals compatible with-

(1) existing uses, including livestock grazing, mining, and forest activities;

(2) scientific activities, including aircraft research and test flights; and

(3) other space-related activities.

TITLE II—PURCHASE OF SPACE TRANSPORTATION SERVICES

SEC. 201. SHORT TITLE.

This title may be cited as the "Space Transportation Services Purchase Act of 1993".

SEC. 202. REQUIREMENT TO PROCURE COMMERCIAL LAUNCH SERVICES.

Section 204 of the Launch Services Purchase Act of 1990 (42 U.S.C. 2465d) is amended to read as follows:

"SEC. 204. REQUIREMENT TO PROCURE COMMERCIAL LAUNCH SERVICES.

"(a) IN GENERAL.—Except as otherwise provided in this section, the Federal Government shall purchase launch services from commercial providers whenever such services are required in the course of its activities.

"(b) EXCEPTIONS.—The Federal Government shall not be required to purchase launch services as provided in subsection (a) if, on a case by case basis the Administrator of the National Aeronautics and Space Administration (hereafter in this section referred to as the 'Administrator'), or the Secretary of Defense, as the case may be, determines that-

"(1) the payload requires the unique capabilities of the space shuttle;

"(2) commercial launch services to meet specific mission requirements are not reasonably available or would not be reasonably available when required;

"(3) the use of commercial launch services poses an unacceptable risk of loss of a unique scientific opportunity; or

"(4) the payload serves national security or foreign policy purposes. Any determination of such circumstances shall be made by the Administrator or the Secretary of Defense and shall not be delegated. The Administrator, or the Secretary of Defense, as the case may be, shall, within 30 days after such determination, notify the Committee on Science, Space, and Technology and the Committee on Armed Services of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate in writing of the determination and its rationale.

"(c) FEDERAL GOVERNMENT LAUNCH VEHICLES.—Launch vehicles shall be acquired or owned by the Federal Government only-

"(1) as required under circumstances described in subsection (b); or

"(2) for conducting research and development on, and testing of, launch technology.

"(d) PHASE-IN PERIOD.—Subsections (a) and (c) shall not apply to launch services and launch vehicles for which a purchase contract has been signed before the date of enactment of this Act.

"(e) HISTORICAL PURPOSES—This title shall not be interpreted to prohibit the Federal Government from acquiring, owning, or maintaining launch vehicles solely for historical display purposes.".

SEC. 203. PURCHASE OF LAUNCH SERVICES.

Section 205 of the Launch Services Purchase Act of 1990 (42 U.S.C. 2465e) is amended to read as follows:

"SEC. 205. PURCHASE OF LAUNCH SERVICES.

"(a) COMPETITIVE BIDDING.—(1) Contracts to provide launch services to the Federal Government under section 204 shall be awarded subject to applicable Federal law requiring full, fair, and open competition, consistent with section 2304 of title 10, United States Code, and section 311 of the National Aeronautics and Space Act of 1958.

"(2) Submission of cost or pricing data for the purpose of supporting a bid or proposal or for the fulfillment of a contract shall not be required of the bidders, except in cases where only one

credible bid meeting minimal technical standards as set forth in the original solicitation is received.

"(b) SPECIFICATION SYSTEMS.—Reasonable performance specifications, rather than Federal civilian or military design or construction specifications, shall be used to the maximum extent feasible to define requirements for a commercial provider bidding to provide launch services. This subsection shall not preclude the Federal Government from requiring compliance with applicable safety standards.".

SEC. 204. COMMERCIAL SPACE LAUNCH ACT AMENDMENTS.

(a) AMENDMENTS.—The Commercial Space Launch Act (49 U.S.C. App. 2601 et seq.) is amended—

(1) in section 4—

(A) by inserting "from Earth" after "if any," in paragraph (2);

(B) by redesignating paragraphs (9) through (12) as paragraphs (11) through (14), respectively; and

(C) by inserting after paragraph (8) the following new paragraphs:

"(9) 'reenter' and 'reentry' mean to return purposefully, or attempt to return, a reentry vehicle and payload, if any, from Earth orbit or outer space to Earth;"

"(10) 'reentry vehicle' means any vehicle designed to return from Earth orbit or outer space to Earth substantially intact;";

(2) in section 6(a), by inserting ", or reenter a reentry vehicle," after "operate a launch site" each place it appears;

(3) in section 6(a) (2) and (3), by striking "section 4(11)" each place it appears and inserting in lieu thereof "section 4(12)";

(4) in section 6(a)(3)(A), by inserting "or reentry" after "such launch or operation";

(5) in section 6(a)(3), by inserting ", or reentry of a reentry vehicle," after "operation of a launch site" each place it appears;

(6) in section 6(b)(1)-

(A) by striking "launch license" and inserting in lieu thereof "license";

(B) by inserting "or reenter" after "shall not launch";

(C) by inserting "or reentry" after "relate to the launch"; and

(D) by inserting "or reentered" after "to be launched";

(7) in section 6(b)(2)-

(A) by inserting "or reentry" after "prevent the launch";

(B) by striking "holder of a launch license" and inserting in lieu thereof "licensee"; and

(C) by inserting "or reentry" after "determines that the launch";

(8) in section 6(c)(1), by inserting "or reentry of a reentry vehicle" after "operation of a launch site";

(9) in section 7, by striking "both" and inserting in lieu thereof "for reentering one or more reentry vehicles";

(10) in sections 8(a), 9(b), 11(a), 11(b), 12(a)(2)(B), and 12(b), by inserting ", or reentry of a reentry vehicle," after "operation of a launch site" each place it appears;

(11) in section 8(b), by inserting "and the reentry of reentry vehicles," after "operation of launch sites,";

(12) in section 11(a), by inserting "or reentry" after "launch or operation";

(13) in section 12(a)(1), by inserting "or reentry" after "prevent the launch";

(14) in section 12(b), by inserting "or reentry" after "prevent the launch";

(15) in section 14(a)(1)-

(A) by inserting "or reentry site" after "observers at any launch site"; and

(B) by inserting "or reentry vehicle" after "assembly of a launch vehicle";

(16) in section 15(b)(4)(A)-

(A) by inserting "and reentries" after "ensure that the launches";

(B) by inserting "or reentry date commitment" after "launch date commitment";

(C) by inserting "or reentry" after "obtained for a launch";

(D) by inserting ", reentry sites," after "United States launch sites";

(E) by inserting "or reentry site" after "access to a launch site";

(F) by inserting ", or services related to a reentry," after "amount for launch services"; and

(G) by inserting "or reentry" after "the scheduled launch";

(17) in section 15(b)(4)(B), by inserting "or reentry" after "prompt launching";

(18) in section 15(c), by inserting "or reentry" after "launch site";

(19) in section 16(a)(1) (A) and (B), by inserting "or reentry" after "any particular launch" each place it appears;

(20) in section 16(a)(1) (C) and (D), by inserting "or a reentry" after "launch services" each place it appears;

(21) in section 16(a)(2), by inserting "or reentry" after "launch services";

(22) in section 16(b)(1) and (4) (A) and (B), by inserting "or reentry" after "particular launch" each place it appears;

(23) in section 17(b)(2)(A)-

(A) by inserting "reentry site," after "launch site,"; and

(B) by inserting "or reentry vehicle" after "site of a launch vehicle";

(24) in section 21(a), by inserting "and reentry" after "approval of space launch";

(25) in section 21(b)-

(A) by inserting ", reentry vehicle," after "A launch vehicle"; and

(B) by inserting "or reentry" after "the launching";

(26) in section 21(c)(1)-

(A) by striking "or" in subparagraph (B);

(B) by redesignating subparagraph (C) as subparagraph (D); and

(C) by inserting after subparagraph (B) the following new subparagraph:

"(C) reentry of a reentry vehicle, or";

(27) in section 21(c)(2), by inserting "reentry," after "launch,"; and

(28) in section 22(a)-

(A) by striking "ending after the date of enactment of this Act and before October 1, 1989"; and

(B) by inserting "and reentries" after "further commercial launches".

(b) REPORT TO CONGRESS.—The Secretary of Transportation shall submit to Congress an annual report to accompany the President's budget request which reviews the performance of the regulatory activities and the effectiveness of the Office of Commercial Space Transportation.

TITLE III—INTELLECTUAL PROPERTY DISPOSITION

SEC. 301. RESEARCH UNDER CONTRACT WITH FEDERAL GOVERNMENT.

Any commercial provider making an invention under contract with the Federal Government shall have the same rights with respect to such invention as would a small business firm under chapter 38 of title 35, United States Code.

SEC. 302. COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS.

Section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a) is amended—

(1) in subsection (a) by striking "may permit" and inserting in lieu thereof "shall permit, under authority of this or any other appropriate Act,"; and

(2) in subsection (d)(1) by inserting "intellectual property," after "equipment," both places it appears.

TITLE IV-TAX INCENTIVES FOR COMMERCIAL SPACE ACTIVITIES

SEC. 401. SHORT TITLE.

This title may be cited as the "Space Business Incentives Act of 1993".

SEC. 402. DEDUCTION FOR PURCHASE OF COMMERCIAL SPACE CENTER STOCK.

(a) IN GENERAL.—Part VI of subchapter B of chapter 1 of the Internal Revenue Code of 1986 (relating to itemized deductions for individuals and corporations) is amended by adding at the end thereof the following new section:

"SEC. 197. DEDUCTION FOR PURCHASE OF COMMERCIAL SPACE CENTER STOCK.

"(a) IN GENERAL.—At the election of the taxpayer, there shall be allowed as a deduction the aggregate amount paid during the taxable year for the purchase of Commercial Space Center stock on the original issue of such stock by a qualified issuer.

"(b) MAXIMUM DEDUCTION.—

"(1) IN GENERAL.—The maximum amount allowed as a deduction under subsection (a) to a taxpayer for the taxable year shall not exceed $100,000.

"(2) CONTROLLED GROUPS.—For purposes of paragraph (1), the taxpayer and all persons who are related persons with respect to the taxpayer shall be treated as 1 person, and the $100,000 amount in paragraph (1) shall be allocated among the taxpayer and such persons in proportion to their respective purchases of stock during the taxable year for which the deduction is allowable by this section.

"(3) ALLOCATION OF DEDUCTION WHERE MORE THAN $100,000 OF STOCK PURCHASED.—If the amount of stock purchased by any person exceeds the limitation under this subsection with respect to such person, the deduction allowed under this section shall be allocated pro rata among the stock so purchased in accordance with the purchase price per share.

"(c) DISPOSITIONS OF STOCK.—

"(1) GAIN TREATED AS ORDINARY INCOME.—If any Commercial Space Center stock with respect to which a deduction was allowed under this section is disposed of by the taxpayer, then the lesser of—

"(A) the excess of—

"(i)(I) in the case of a sale or exchange, the amount realized, or

"(II) in the case of any other disposition, the fair market value of the stock, over

"(ii) the adjusted basis of such stock, or

"(B) the amount of the deduction allowed under this section with respect to such stock, shall be treated as ordinary income. Such gain shall be recognized notwithstanding any other provision of this subtitle.

"(2) INTEREST CHARGED IF DISPOSITION WITHIN 3 YEARS OF PURCHASE.-

"(A) IN GENERAL.-If any Commercial Space Center stock is
disposed of before the end of the 3-year period beginning on the date such stock was purchased by the taxpayer, the tax imposed by this chapter for the taxable year in which such disposition occurs shall be increased by the Commercial Space Center stock recapture amount.

"(B) COMMERCIAL SPACE CENTER STOCK RECAPTURE AMOUNT.—For purposes of subparagraph (A), the term 'Commercial Space Center stock recapture amount' means an amount equal to the amount of interest (determined at the underpayment rate applicable under section 6621) which would accrue-

"(i) during the period beginning on the date such stock was purchased by the taxpayer and ending on the date such stock was disposed of by the taxpayer,

"(ii) on the aggregate decrease in tax of the taxpayer resulting from the deduction allowed under this section with respect to the stock so disposed of.

"(d) TREATMENT WHERE ISSUER CEASES TO BE QUALIFIED.—

"(1) IN GENERAL.—If—

"(A) any qualified issuer with respect to the stock of which any taxpayer has made an election under this section ceases to meet the requirements of subsection (e)(2)(A), and

"(B) such cessation occurs at any time before the close of the 5th taxable year ending after the date such stock was issued, the tax treatment described in paragraph (2) shall apply to the taxable year of the taxpayer in which such cessation occurs.

"(2) TAX TREATMENT OF TAXPAYER.—The tax treatment described in this paragraph for any taxable year is-

"(A) the taxpayer shall include in income as ordinary income the amount of the deduction allowed under this section with respect to such stock,

"(B) the tax imposed by this chapter for such taxable year shall be increased by an amount equal to the amount of interest (determined at the underpayment rate applicable under section 6621) which would accrue-

"(i) during the period beginning on the date such stock was purchased by the taxpayer and ending on the disqualification date,

"(ii) on the aggregate decrease in tax of the taxpayer resulting from the deduction allowed under this section with respect to the stock.

"(3) DISQUALIFICATION DATE.—For purposes of paragraph (2), the term 'disqualification date' means the last day of the taxable year of the qualified issuer in which the requirements of subsection (e)(2)(A) ceased to be met.

"(4) EXCEPTION FOR SMALL INVESTORS.—In the case of an individual, paragraph (1) shall not apply if, on the disqualification date with respect to any qualified issuer, the aggregate of the deductions allowed to the taxpayer under this section with respect to stock issued by such issuer does not exceed $5,000 ($10,000 in the case of a joint return).

"(e) DEFINITIONS.—For purposes of this section—

"(1) COMMERCIAL SPACE CENTER STOCK.—The term 'Commercial Space Center stock' means common stock issued by a qualified issuer but only if the proceeds of such issue are used by such issuer to establish or operate a Commercial Space Center.

"(2) QUALIFIED ISSUER.—The term 'qualified issuer' means any corporation which, at the time of issuance of the stock involved is conducting a business at least 75 percent of the gross receipts of which for the taxable year are attributable to—

"(A) operations within a Commercial Space Center, or

"(B) the establishment or operation of a Commercial Space Center, in the active conduct of a trade or business.

"(3) RELATED PERSON.—A person is a related person to another person if—

"(A) such persons are treated as a single employer under subsections (a) and (b) of section 52, or

"(B) in the case of individuals, such persons are husband and wife.

"(f) SPECIAL RULES.-

"(1) AMOUNT PAID AFTER CLOSE OF TAXABLE YEAR.—An amount paid after the close of the taxable year for the purchase of

Commercial Space Center stock shall be treated for purposes of subsection (a) as paid during such year if—

"(A) such amount is so paid not later than the time prescribed by law for filing the return for such taxable year (including extensions thereof), and

"(B) the taxpayer was under a binding contract as of the close of such taxable year to purchase such stock.

"(2) LIMITATION ON AMOUNT OF DEDUCTION.—If—

"(A) any Commercial Space Center stock is issued in exchange for property,

"(B) the basis of such stock in the hands of the taxpayer is determined by reference to the basis of such property, and

"(C) the adjusted basis (for determining gain) of such property immediately before the exchange exceeded its fair market value at such time, then the deduction under this section, and such adjusted basis, shall both be reduced by the excess described in subparagraph (C).

"(g) BASIS ADJUSTMENT.—For purposes of this subtitle, if a deduction is allowed under this section with respect to the purchase of any stock, the basis of such stock (without regard to this subsection) shall be reduced by the amount of the deduction allowed with respect to the purchase of such stock.

"(h) APPLICATION OF SECTION.—This section shall apply only to stock acquired after December 31, 1992, and before January 1, 2008."

(b) TECHNICAL AMENDMENT.—Subsection (a) of section 1016 of such Code (relating to adjustments to basis) is amended by striking out "and" at the end of paragraph (23), by striking out the period at the end of paragraph (24) and inserting in lieu thereof ", and", and by adding at the end thereof the following new paragraph:

"(25) to the extent provided in section 197(g), in the case of stock with respect to which a deduction was allowed under section 197."

(c) CLERICAL AMENDMENT.—The table of sections for part VI of subchapter B of chapter 1 of such Code is amended by adding at the end thereof the following new item:

"Sec. 197. Deduction for purchase of Commercial Space Center stock."

(d) EFFECTIVE DATE.—The amendments made by this section shall apply to stock purchased after December 31, 1992.

SEC. 403. EXCLUSION OF GAIN ON SALE OF STOCK OF CORPORATION SUBSTANTIALLY ENGAGED IN SPACE—RELATED ACTIVITIES.

(a) IN GENERAL.—Part III of subchapter B of chapter 1 of the Internal Revenue Code of 1986 (relating to items specifically excluded from gross income) is amended by redesignating section 137 as section 138 and by inserting after section 136 the following new section:

"SEC. 137. GAIN ON SPACE CORPORATION STOCK.

"(a) GENERAL RULE.—Gross income shall not include gain on the sale or exchange of space corporation stock.

"(b) LIMITATIONS.—

"(1) MAXIMUM DOLLAR AMOUNT.—

"(A) IN GENERAL.—The maximum amount excluded under subsection (a) to a taxpayer for the taxable year shall not exceed $100,000.

"(B) CONTROLLED GROUPS.—For purposes of subparagraph (A), the taxpayer and all persons who are related persons (as defined in section 197(c)(3)) with respect to the taxpayer shall be treated as 1 person, and the $100,000 amount in subparagraph (A) shall be allocated among the taxpayer and such persons in proportion to their respective sales and exchanges of stock during the calendar year in which the taxable year of the taxpayer begins.

"(2) EXCLUDED GAIN MUST BE LONG-TERM CAPITAL GAIN.--Subsection (a)

shall not apply to any gain other than long-term capital gain.

"(c) SPACE CORPORATION STOCK.—

"(1) IN GENERAL.—The term 'space corporation stock' means common stock acquired by the taxpayer on its original issue by a space corporation.

"(2) SPACE CORPORATION.—The term 'space corporation' means any corporation which, during each of its 3 taxable years ending before the date of the sale or exchange by the taxpayer, derived at least 75 percent of its gross receipts of from the active conduct of a trade or business involving the providing of space—related products or services. For purposes of the preceding

sentence, gross receipts attributable to operations within a Commercial Space Center, or to the establishment or operation of a Commercial Space Center, shall not be taken into account.

"(d) APPLICATION OF SECTION.—This section shall apply only to stock acquired after December 31, 1992, and before January 1, 2008."

(b) CLERICAL AMENDMENT.-The table of sections for such part III is amended by striking the last item and inserting the following new item:

"Sec. 137. Gain on space corporation stock."

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to stock purchased after December 31, 1992.

SEC. 404. TREATMENT OF BONDS TO FINANCE SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES.

(a) IN GENERAL.—Subsection (a) of section 142 of the Internal Revenue Code of 1986 (defining exempt facility bond) is amended by striking "or" at the end of paragraph (10), by striking the period at the end of paragraph (11) and inserting ", or", and by adding at the end thereof the following:

"(12) space launch and launch support facilities.

Paragraph (12) shall not apply to any bond issued after December 31, 2007."

(b) SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES.—Section 142 of such Code is amended by adding at the end thereof the following new

subsection:

"(j) SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES.—For purposes of subsection (a)(12), the term 'space launch and launch support facilities' means-

"(1) all facilities, equipment, and real property used to prepare space transportation vehicles and their payloads for transportation to, from, or within outer space, or in suborbital trajectory or to launch such vehicles, and

"(2) all facilities, equipment, and real property used to conduct research and development, manufacture, process, and service space transportation vehicles and their payloads.

For purposes of the preceding sentence, the terms 'space transportation vehicles' and 'payloads' have the respective meanings given

such terms by section 3 of the Omnibus Space Commercialization Act of 1993."

(c) EXCEPTION FROM VOLUME CAP.—Paragraph (3) of section 146(g) of such Code is amended by striking "or (2)" and inserting ", (2), or (12)" and by inserting "and space launch and launch support facilities" after "wharves".

(d) CERTAIN ADDITIONAL REQUIREMENTS NOT TO APPLY TO SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES BONDS.—

(1) Subsection (h) of section 147 of such Code is amended by adding at the end thereof the following new paragraph:

"(3) SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES BONDS.—Subsections

(a), (b), (c), and (d) shall not apply to any exempt facility bond described in section 142(a)(12)."

(2) The heading for subsection (h) of section 147 of such Code is amended by striking "AND QUALIFIED 501(C)(3) BONDS" and inserting "QUALIFIED 501(C)(3) BONDS, AND SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES BONDS".

(e) FEDERAL GUARANTEED SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES BONDS

PERMITTED.—Paragraph (3) of section 149(b) of such Code is amended by adding at the end thereof the following new subparagraph:

"(E) EXCEPTION FOR SPACE LAUNCH AND LAUNCH SUPPORT FACILITIES BONDS.—Paragraph (1) shall not apply to any exempt facility bond described in section 142(a)(12) in situations where the guarantee of the United States (or any agency or instrumentality thereof) is the result of payment of rent, user fees, or other charges by the United States (or any agency or instrumentality thereof) for the use of a facility financed with such a bond."

(f) EXCEPTION FROM ADVANCE REFUNDING RULES.—Paragraph (2) of section 149(d) of such Code is amended by striking "bond)." and inserting "bond or any exempt facility bond described in section 142(a)(12))."

(g) EFFECTIVE DATE.—The amendments made by this section shall apply to obligations issued after the date of the enactment of this Act.

SEC. 405. SPACE MANUFACTURING INCENTIVE.

(a) IN GENERAL.—Part III of subchapter B of chapter 1 of the Internal Revenue Code of 1986 (relating to items specifically excluded from gross income) is amended by inserting after section 137 the following new section:

"SEC. 138. SPACE MANUFACTURING INCOME.

"(a) GENERAL RULE.—Gross income shall not include space manufacturing income.

"(b) SPACE MANUFACTURING INCOME.—For purposes of this section, the term 'space manufacturing income' means-

"(1) income derived from the commercial sale of any product which is manufactured in outer space and returned to Earth, and

"(2) income of an individual attributable to services performed in outer space by such individual in a commercial space activity.

"(c) EXCLUSION FROM TARIFFS, ETC.—Any product which is manufactured in outer space and returned to Earth shall be exempt from all Federal excises, imposts, and duties and any other Federal tariffs.

"(d) PHASEOUT OF BENEFITS.—In the case of a taxable year beginning

after December 31, 2022, the amount excluded under subsection (a) shall be reduced (but not below zero) by x/20th's of the amount excludable without regard to this subsection, where 'x' is the number of years such taxable year is after the last taxable year beginning before January 1, 2023. A similar rule shall apply to the benefits under subsection (c)."

(b) CLERICAL AMENDMENT.—The table of sections for such part III is amended by adding at the end the following new items:

"Sec. 138. Space manufacturing income.

"Sec. 139. Cross references to other Acts."

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to taxable years beginning after December 31, 1992.

SEC. 406. STATE TAX BENEFITS FOR COMMERCIAL SPACE ACTIVITIES TO BE ENCOURAGED.

The President shall encourage State and local governments to offer tax and other incentives to encourage commercial space activities.

TITLE V-MISCELLANEOUS

SEC. 501. ANTITRUST EXEMPTIONS.

(a) STANDING TO CONDUCT CERTAIN LITIGATION.—Notwithstanding sections 4 and 4C of the Clayton Act (15 U.S.C. 15 and 15C) and section 4 (a) and (b) of the National Cooperative Research Act of 1984 (15 U.S.C. 4303 (a) and (b)), standing to conduct litigation arising from causes of action under such Acts arising out of activities carried out under this Act is reserved to the Department of Justice under the direction of the Attorney General and the Federal Trade Commission.

(b) LIMITATION ON RELIEF.—Notwithstanding section 4(a) of the Clayton Act (15 U.S.C. 15(a)) and section 4 of the National Cooperative Research Act of 1984 (15 U.S.C. 4303), and in lieu of the relief specified in such sections, the sole relief available to the United States acting on its own behalf or on the behalf of any State or persons, in causes of action under such Acts arising out of activities carried out under this Act, shall be injunctive relief.

SEC. 502. EVIDENCE.

In any action against a commercial provider arising in connection with activities carried out under this Act, evidence of the failure of such commercial provider to follow military specifications or National Aeronautics and Space Administration specifications shall not, in and of itself, constitute proof of negligence on the part of a commercial provider, except where such specifications are specifically required by contract or in cases concerning emergency flight termination (range safety) equipment when flights are made from launch sites owned by the Federal Government.

SEC. 503. REPORT ON LAWS THAT AFFECT SPACE COMMERCIALIZATION.

Within one year after the date of enactment of this Act, the Director of the National Space Council, in cooperation with the Director of the Office of Space Commerce, shall report to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the status of laws and treaties in the United States and internationally that affect the ability of the United States to commercially exploit space. Such report shall include recommendations for any changes to such laws or treaties that may be desirable.

SEC. 504. OFFICE OF SPACE COMMERCE.

(a) ESTABLISHMENT.—There is established within the Department of Commerce an Office of Space Commerce.

(b) FUNCTIONS.—The Office of Space Commerce shall be the principal unit for the coordination of space-related issues, programs, and initiatives within the Department of Commerce. The Office's primary responsibilities shall include-

(1) promoting private sector 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 commercial space companies in their efforts to do business with the United States Government, and acting as an industry advocate within the executive branch to ensure that the Federal Government meets its space-related requirement, to the fullest extent feasible, with commercially available space goods and services;

(3) ensuring that the United States Government does not compete with the private sector in the provision of space hardware and services otherwise available from the private sector;

(4) promoting the export of space-related goods and services;

(5) 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;

(6) seeking the removal of legal, policy, and institutional impediments to space commerce; and

(7) licensing private sector parties to operate private remote sensing space systems and supporting the private sector's role in the commercial development of Landsat remote sensing data distribution.

SEC. 505. SPACE-RELATED RESEARCH.

(a) REQUIRED REPORTS.—Each Federal agency or department covered by this section shall, within 1 year after the appropriation of the amount that brings the agency or department under the coverage of this section, submit a report to Congress containing a plan for activities to support space-related research appropriate to the mission of such agency or department. Once every 2 years after

the submission of such report, the agency or department shall report to Congress on progress made in implementing such plan, together with suggestions for any policy or legislative changes necessary to enhance the agency's or department's ability to implement that plan.

(b) COVERAGE.—A Federal agency or department shall be covered by this section if it has an annual research and development budget, for a fiscal year ending after the date of enactment of this Act, greater than $100,000,000.

SEC. 506. COMMERCIAL ADVERTISING.

To the extent that safety is not compromised, the United States shall accommodate commercial advertising—

(1) by its contractors or their assigns providing space transportation vehicles, space infrastructure, payloads, or space launch or launch support facilities; or

(2) by persons who are engaged in activities which reuse or recycle space transportation vehicles, space infrastructure, payloads, or space launch or launch support facilities.

SEC. 507. PURCHASE OF SPACE SCIENCE DATA.

(a) IN GENERAL.—To the maximum extent possible, the National Aeronautics and Space Administration shall purchase from the private sector space science data. Examples of such data include scientific data concerning the elemental and mineralogical resources of the moon and the planets, Earth environmental data obtained through remote sensing observations, and solar storm monitoring.

(b) COMPETITIVE BIDDING.—(1) Contracts for the purchase of space science data shall be awarded in a process of full, fair, and open competitive bidding among United States persons.

(2) Submission of cost data either for the purposes of supporting the bid or for the fulfillment of the contract shall not be required of bidders.

(3) Conformance with military specifications (Milspec) or National Aeronautics and Space Administration specification systems with respect to the design, construction, or operation of equipment used in obtaining space science data for the Federal Government shall not be a requirement for a commercial provider bidding to provide such services.

(4) Contracts under this section shall not provide for the Federal Government to obtain ownership of data not specifically sought by the Federal Government.

SEC. 508. PROCUREMENT.

(a) PROCUREMENT DEMONSTRATION PROGRAM.—

(1) IN GENERAL.—The Administrator shall establish within the Office of Advanced Concepts and Technology a program of expedited technology procurement for the purpose of demonstrating how innovative technology concepts can rapidly be brought to bear upon space missions of the National Aeronautics and Space Administration.

(2) PROCEDURES AND EVALUATION.—The Administrator shall establish procedures for actively seeking from nongovernment persons innovative technology concepts relating to the provision of space hardware, technology, or services to the National Aeronautics and Space Administration, and for the evaluation of such concepts by the National Aeronautics and Space Administration's Advisory Council against mission requirements.

(3) REQUIREMENT.—At least 10 percent of amounts authorized to be appropriated for Commercial Programs, Research and Development, for each fiscal year shall be used for innovative technology procurements that are determined under paragraph (2) to meet mission requirements.

(4) SPECIAL AUTHORITY.—Notwithstanding any other provision of Federal law or regulation, in order to carry out this subsection the Administrator shall recruit and hire for limited term appointments persons from the nongovernmental sector with special expertise and experience related to the innovative technology concepts with respect to which procurements are made under this subsection. Further, in carrying out this subsection the administrator may waive—

(a) Federal Acquisition Regulations;

(b) Military Specifications; and

(c) cost data requirements.

(b) REPORT.—The Office of Space Commerce shall, within 6 months after the date of enactment of this Act, submit a report to the President and the Congress containing recommendations for procuring space infrastructure, space launch and launch support

facilities, and payloads using proof of concept methods and unsolicited proposals. In preparing such report, the Office of Space Commerce shall consult with appropriate persons in the private sector.

SEC. 509. LAND REMOTE SENSING POLICY ACT OF 1992 AMENDMENTS.

Section 105(a) of the Land Remote Sensing Policy Act of 1992 is amended-

(1) by striking paragraphs (1), (3), and (4);

(2) by redesignating paragraphs (2), (5), and (6) as paragraphs (3), (4), and (7), respectively;

(3) by inserting before paragraph (3), as so redesignated, the following new paragraphs:

"(1) define the roles and responsibilities of various public and private sector entities that would be involved in the acquisition, processing, distribution, and archiving of Landsat 7 data and in the operations of the Landsat 7 spacecraft;

"(2) ensure that unenhanced data shall be provided to the United States Government and its affiliated users at the cost of fulfilling user requests, and that such data may be reproduced and disseminated to other Federal agencies and affiliated users, on the condition that such unenhanced data is used solely for noncommercial purposes;";

(4) in paragraph (4), as so redesignated by paragraph (2) of this section, by striking "and" at the end; and

(5) by inserting after such paragraph (4) the following new paragraphs:

"(5) ensure that instructional data sets, selected from the Landsat data archives, shall be made available to educational institutions exclusively for noncommercial, educational purposes at the cost of fulfilling user requests;

"(6) ensure that the proposed data distribution system contributes to the goal of the commercialization of land remote sensing; and".

SEC. 510. LAND REMOTE SENSING FOR AGRICULTURAL MANAGEMENT.

(a) FINDINGS.—The Congress finds that—

(1) the use of land remote sensing data is potentially a valuable resource to the agricultural community;

(2) land remote sensing data can inform the agricultural community as to the condition of crops and the land which sustains those crops;

(3) land remote sensing data can be useful for farmers engaged in prescription farming;

(4) land remote sensing data on agricultural conditions can be valuable, when received on a timely basis; and

(5) the National Aeronautics and Space Administration, using the expertise of the Earth Observations Commercialization Applications Program, and the Department of Agriculture should work in tandem to aid farmers to obtain data which would be conducive to sound agricultural management and greater crop yields.

(b) DEFINITIONS.—For the purposes of this section-

(1) the term "Administrator" means the administrator of the National Aeronautics and Space Administration;

(2) the term "prescription farming" means a method by which farmers can regulate the application rates of pesticides, nutrients, and water, among other inputs, to farmlands in the exact amount necessary to maximize crop yield, without harming the environment; and

(3) the term "data voucher" means a grant to enable farmers to purchase land remote sensing information from commercial entities.

(c) DATA VOUCHERS.—The Secretary of Agriculture and the Administrator shall jointly develop a mechanism to provide farmers with data vouchers. Data vouchers shall be distributed to farmers through the Agricultural Extension Service, which shall contract with commercial entities to provide farmers engaged in prescription farming with timely data on crop conditions, fertilization and irrigation needs, pest infiltration, and soil conditions.

(d) TRAINING.—The Secretary of Agriculture and the Administrator shall jointly establish a program to train farmers in the use and interpretation of land remote sensing data for prescriptionfarming.

(e) AUTHORIZATION.—Funds necessary for carrying out this section shall be derived from funds otherwise authorized for the agricultural extension service.

(f) SUNSET.—The provisions of this section shall expire 5 years after the date of enactment of this Act.

SEC. 511. SUNSET.

Sections 102(b), 501, 502, 503, and 505 shall expire 15 years after the date of enactment of this Act.