



The Space Industry: Supporting U.S. Supremacy

By Loring Wirbel

The mid-1990s were heady years for the commercial space industry. Space buffs had been promoting the privatization of space applications for some time, so the satellite industry could lessen if not sever its ties to the military. When manned planetary exploration fell victim to spiraling cost overruns, advocates of space privatization looked to the proliferation of satellites in near-earth space, particularly to personal communication technology.

Just as investors in the 1990s considered anything Internet-related as an instant gold mine, space advocates viewed the success of small low-earth-orbit (LEO) communication satellites as a litmus test for the commercialization of space.

On the balance sheet, this strategy appeared to pay off. The commercial satellite industry posted double-digit growth trends to yield an industry aggregate in 2001 of \$97.7 billion in revenues worldwide. This total includes \$42 billion in satellite services, \$17 billion in satellite manu-

facturing, \$18 billion in ground stations, and \$9 billion in launch services and vehicle manufacturing.

These numbers do not convey, however, the crisis in the satellite industry. Several recent disasters, including the simultaneous loss of 12 Globalstar satellites in Kazakhstan, have rocked investor confidence. Cost overruns imperil key projects. In perhaps the most significant blow, the telecommunications industry pulled the rug out from under the commercial satellite industry by turning to cellular networks based on the ground rather than in space. Throughout most of the 1990s, the average number of satellite launches per year was 90, but in 2001 the number shrunk to 60, of which only 15 were true commercial satellite launches.

Because of these problems, the commercial industry remains dependent on the military for technology and capital infusions. LEO networks have depended on technology developed by the National Reconnaissance Office (NRO); without technology transfers and handouts from the military, networks like Iridium never would have made it past the design stage. With the help of the military, the space industry in the U.S. remains

the strongest in the world. There are some competitors. The European Space Agency (ESA) is still sending up Ariane satellites from the Kourou launch facility in French Guiana. The European Union (EU) still supports the Galileo navigation network, despite intense U.S. pressure to cancel the program. And China is on the verge of introducing an ambitious manned-mission and satellite program. But these foreign competitors represent only a minor challenge to the U.S. space program.

Although the melding of the U.S. Space Command into the Strategic Command appears to have placed space dominance in limbo, efforts to maintain unilateral control of space are as strong as ever, implemented by the enlarged Strategic Command and the new Northern Command, which has taken over the facilities of the former Space Command in Colorado Springs. The directors of the Strategic Command and of the NRO have argued forcefully in public for using existing strategic assets against any nation, any terror group, any drug dealer, to help reinforce U.S. invulnerability.

After the September 11 tragedy, even the so-called civilian programs within the National Aeronautics and Space Administration (NASA) began serving the government in a more explicit fashion. For example, NASA satellite systems like Sea-Wide Field Studies (Sea-WiFS) played a critical role in spotting Taliban forces during the Afghan War. And ties between NASA and the intelligence community are about to become even closer; the NRO announced in September 2002 the opening of a Transformational Communications Office to link Pentagon, NASA, and NRO communication networks in space.

Satellites and satellite launches are an integral part of the U.S. government's vision of achieving control over space for both military and economic purposes. The Space Command's 1996 document, *Vision for 2020*, talks of controlling planetary space in order to protect the current global division between economic haves and have-nots. In the 1990s, the notion of preserving "permanent preeminence," as defense analyst Michael Klare calls Washington's unspoken assumption of undisputed planetary hegemony, found unanimous favor as a philosophical baseline in almost all sectors of the Democratic and Republican parties. When the Bush administration took power in early 2001, this unilateralism and its application in space became an element of pride rather than merely a quiet reality as had been practiced by the Democrats.

Key Points

- During the 1990s, the commercial space industry flourished and ties to the military lessened.
- Recent disasters, cost overruns, industry shifts in technology, and post-9.11 security measures have increased military ties to civilian space programs.
- Foreign competitors represent only a minor challenge to the U.S. space program.

Problems with Current U.S. Policy

The U.S. government is committed to achieving military supremacy in space and maintaining dominant market share in the satellite industry for U.S. corporations. The mission of space supremacy did not suddenly appear when President Bush took office in 2001. It evolved from infrastructures that were borrowed from intelligence and weapons networks and were developed over forty years as part of the cold war. After the cold war ended, the U.S. sought a space-based, 24-hour reconnaissance network and the construction of a national missile defense (NMD) system to extend its economic might. Although the aerospace industry is not powerful enough to set the agenda for U.S.-based transnationals at large, *New York Times* columnist Thomas Friedman has consistently stressed that the implementation of global free markets serving large corporations would not be possible without the “hidden iron fist” of the military, which is led by the aerospace sector.

As an indication of the central role space dominance continues to play—and the intimate connection between commerce and the military—consider the many hats worn by Peter Teets, former chief operating officer at Lockheed-Martin. Teets now serves as the director of the National Reconnaissance Office (NRO), undersecretary of the Air Force, and chief procurement officer for all of military space, controlling a budget in excess of \$65 billion, a figure that includes \$8 billion a year for missile defense and \$7 billion annually for NRO spying. Teets is a firm believer in the conclusions of the Rumsfeld Commission’s January 2001 report on the military in space, which warns of a “space Pearl Harbor” if the U.S. does not thoroughly dominate all aspects of space. In addition, key lobbyists for Lockheed-Martin, Bruce Jackson and Stephen Hadley, played central roles in developing space policy, and Hadley later took a post within the Pentagon.

To underpin NMD and space supremacy, the U.S. uses multiple space systems, and the Pentagon is spending billions to update each of these. Space-based intelligence collection is dominated by gargantuan geosynchronous satellite networks that represent windfall profits for prime contractors and have generated significant cost overruns. These systems range from satellite launchers to different tiers of satellites circling the earth.

From its inception in 1998, the Evolved Expendable Launch Vehicle (EELV) was designed to reduce the cost to the U.S. government of imaging and signals-intelligence satellite launches. Large rockets like Titan-4 cost more than a billion dollars each, but the Atlas-5 and Delta-IV EELVs use streamlined designs and cheaper components to reduce launch costs by as much as 80%. Although the NRO heavily promoted the commercial spin-off possibilities of EELVs, the commercial prospects for the new launchers now appear minimal. Contractors see it as a potential bailout program for their cost overruns. The public may never learn how much the government has spent on EELVs. The NRO worked with contractors to insure that most information remains “vendor proprietary”—even if the information is declassified, it can remain secret to meet the wishes of the vendor. To date, it is believed that the

NRO has provided slightly more than \$500 million each to Lockheed Martin and Boeing, but even Defense Department inspector general auditor studies on EELV expenditures are classified.

The Global Positioning System (GPS) can provide precision targeting for military missions, while civilian customers use less accurate frequencies as navigational aids. Newer military enhancements to the GPS provide support for what the Pentagon calls “Navwar.” Warning of impending missile launches has been the domain of an aging infrared satellite system called Defense Support Program (DSP). A critical part of the missile defense program involves the replacement of DSP satellites with a two-tiered network of satellites called the Space-Based Infrared System, deployed in two portions called SBIRS-High and SBIRS-Low. SBIRS-Low is still in its early phases, but SBIRS-High, managed by Lockheed-Martin, is facing a congressional review due to cost overruns exceeding \$4 billion.

Intelligence distribution is a function of the Global Broadcast System (GBS). During the war in Afghanistan, the GBS provided “instant situational awareness” to troops and pilots by integrating intelligence from satellites, unmanned aerial vehicle flights, and ground signals intelligence stations. Imaging satellites will be replaced by Boeing’s 8X Future Imagery Architecture, a satellite project with total procurement costs in the tens of billions of dollars. The signals-intelligence equivalent is the Intruder, a program that has amassed significant cost overruns.

As contractors retool international defense programs for missions serving the homeland defense duties of the Northern Command, the four consolidated defense contractors will increasingly develop dual-use capabilities. To cite but one example of the blurring of public and private sectors, the NRO and the National Security Agency (NSA) elected to outsource to Raytheon much of the intelligence processing for Buckley Air Force Base in Colorado, the largest electronic intelligence downlink base in North America. In 2001, Raytheon announced that it would set up secure-hosted Web services for corporate America in the same massive classified facility in which it performs intelligence processing. In August 2002, Raytheon announced a billion-dollar expansion at the same site to develop ground systems for the National Polar-Orbit Operational Environmental Satellite, a joint weather-satellite program of the Defense Department, NASA, and the National Oceanic and Atmospheric Administration. Raytheon’s multitasking may represent the norm in a system dominated by U.S.-based defense contractors.

Key Problems

- Ever since low-earth-orbit telecommunication satellite plans proved infeasible, civilian launch platform and satellite efforts have faltered, and the growth of the space industry has hinged upon Pentagon ambitions.
 - Globalization of the space industry directly serves Pentagon efforts to control planetary space for purposes of political and military power projection.
 - “Globalization” of space has facilitated the consolidation of space control under Lockheed-Martin, Northrop-Grumman/TRW, Boeing, and Raytheon.
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Toward a New Foreign Policy

In the Clinton era, some efforts at controlling the proliferation of space technology were made through international bodies such as the Missile Technology Control Regime (MTCR). When such agencies participate directly in preventing the export of multistage rockets from a nation like North Korea or Iraq to emerging states, the mission appears to be a legitimate one. But arms control advocates sometimes put too much faith in false multilateral agencies that do not confront existing inequities. In the same way that small nations object to

the Non-Proliferation Treaty because of the inaction of the major states in eliminating nuclear weapons, arms control professionals must be wary when the current "keepers of the keys" promote technology limitation that serves the interests of unilateral supremacy. The NSA should not be in the position of single-handedly determining encryption and security technology for the world, and the NRO should play no direct role in determining which nations are "allowed" to have a given level of space technology.

Since the advent of the Bush administration, multilateral bodies like the MTCR have

become almost irrelevant. A truly independent and peace-oriented space program needs multiple centers of gravity, though that is not necessarily easy to attain. Just as David Ricardo's rules of "comparative advantage" make it all but impossible to return to an era of tariffs and national commerce, the economies of scale in the space industry make it unlikely that scores of space programs in other countries will survive.

European institutions are an important counterweight to Pentagon dominance, whether through ESA or EU funding of large European space conglomerates, but European programs are not wholly independent. For example, German activists have exposed the role of some ESA radar programs in aiding forward-based missions of NATO and the EU Rapid Reaction Force.

In examining space-based communication and intelligence systems, whether funded by military or commercial interests, citizens should ask: Does this system serve

multilateral or unilateral interests, and will its further development increase or decrease stability? Any system failing the multilateralist or stability test should be opposed without compromise. Citizens can also accelerate and expand opposition to militarization of space by highlighting the hazards of unilateralism within the United States. As the Department of Homeland Security introduces surveillance tools that infringe upon the civil rights of U.S. citizens, it will have to rely on defense contractors to bolster space supremacy networks.

Legal challenges to the USA Patriot Act and related Justice Department executive orders should specify limits on aerospace corporations that ply their wares for domestic surveillance. Boeing and Raytheon, for example, have developed analytical tools for the space intelligence community that will be applied to new airport security and border security systems. Oracle, a private software company tightly linked to the CIA and NSA, is working with top defense contractors on unified databases for civilian profiling. Although groups like the American Civil Liberties Union (ACLU) quickly grasped the dangers of the USA Patriot Act and the Homeland Security Department, few civil libertarians realize that many of the tools of domestic repression were perfected when the intelligence systems developed for the cold war were retargeted in the mid-1990s.

A technology base involving several national governments and corporations of various sizes, divorced from U.S. military interests, may take five years or more to emerge. Relying on a unilateralist and empire-building U.S. military as a transitional source of funds for commercial ventures in space, however, may place space proponents in the Faustian position of supporting preemptive warfare technologies.

The overwhelming role played by large U.S. corporations in building space systems that only the U.S. government is permitted to use represents the backbone of U.S. unilateralism in space. Though it is true that European defense contractors can't keep up with Lockheed-Martin, Boeing, Northrop-Grumman/TRW, and Raytheon, U.S. transnationals are not providing the impetus. Instead, the supremacist tail of unilateral policy is wagging the globalist corporate dog.

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Key Recommendations

- It is important to have a space industry outside Pentagon control.
- Besides being ineffective, achieving nonproliferation through tighter export control, as advocated by some arms control groups, allows the current "keeper of the keys" to determine the legitimacy of foreign space projects.
- A uniform rule should apply to both the U.S. and to other nations: No nation should weaponize space, and no nation should use military platforms in space in ways that encourage or reinforce power projection.

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