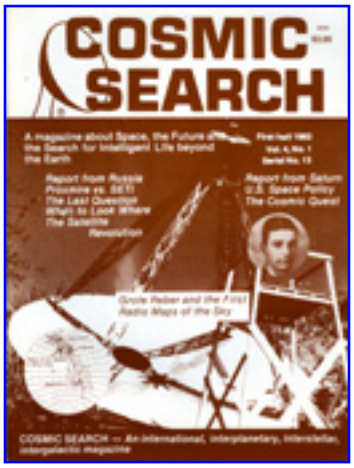
North American AstroPhysical Observatory (NAAPO)



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U.S. Space Policy
The Continuing Controversy

By: Marcia S. Smith

The Space Arena Is Becoming More Complex

Marcia S. Smith

1981 is proving to be a banner year for issues surrounding U.S. activities in outer space. The first flight of the shuttle not only reminded everyone that the United States does indeed have a space program, but that we use space for military as well as the better known civilian activities. The shuttle is increasingly being viewed — rightly or wrongly — as primarily a military rather than a civilian vehicle.

Developing policies and goals for DOD's (Department of Defense's) military and NASA's (National Aeronautical and Space Administration's) civilian space programs, and for interaction between the two, has become more important with tighter budgets, since many of the programs seem duplicative. At the same time, DOD's space budget has grown to where it is now almost equal to NASA's. With the advent of the space shuttle era, where both agencies will be using the same launch system, the lines between the two programs are blurring, and the possibility of merging them into one agency has become a popular topic of conversation.

Even as the Government role in space increases, the private sector's use is growing, too. Not only is a greater segment of private industry using space technology such as communications satellites, but it is becoming interested in operating space systems such as the shuttle and remote sensing satellites. One company has even built a launch vehicle to compete commercially with the Government's space shuttle for certain types of launches.

Concurrently, space is becoming more international in character. Virtually every country uses some type of space service (particularly communications satellites), and four other countries and one international organization have their own launch capabilities. The traditional rivalry between the United States and the Soviet Union

for leadership in space is expanding to include Japan and the European Space Agency.

In 1982, the United Nations will sponsor UNISPACE-82, the second Conference on the Peaceful Uses of Outer Space, to review progress in space research since the last conference in 1967, with the focus on explaining the benefits of space research to less developed countries. Participation in the conference by the United States is uncertain, however, because of a dispute over who will serve in what capacity at the conference.

Sputnik

The space age began on October 4, 1957 with the Soviet launch of the first satellite, Sputnik I. Although it had been well known that both the United States and the Soviet Union were planning to attempt satellite launches as part of the activities of the International Geophysical Year (IGY), the Sputnik launch shocked western observers not only because it came earlier than expected, but also because the satellite weighed 84 kilograms, over eight times greater than the U.S. satellite then under development (Vanguard, which weighed 10 kilograms). This indicated a substantially greater launch capability than thought possible for Soviet technology. The shock tremors from Sputnik I had barely subsided when a second wave hit with the launch of Sputnik 2 on November 3. Weighing 508 kilograms, the satellite had life support systems and carried the first animal, a dog, "Layka," into orbit.

In examining the reasons why the Soviets had beaten the United States into space, it became clear that at least part of the explanation was President Eisenhower's insistence that any U.S. satellite launched in support of the IGY be identified as a non-military program. While recognizing that there were valid military uses of space, the President wanted to present an image to the world of the United States fostering the peaceful uses of space. He chose the Naval Research Laboratory to develop a purely civilian launch vehicle, Vanguard, rather than using military IRBM (Intermediate Range Ballistic Missile) technology from the Army's Ballistic Missile Agency (ABMA). Even though ABMA was reportedly confident that it could have placed a payload into space during a test of the Jupiter C missile in September 1956, the President would not authorize the Army to fire the fourth stage of the rocket which might have accomplished that goal.

Even after Sputnik I, President Eisenhower still insisted that Vanguard be used to launch the first U.S. satellite, so the project was given higher priority. Nevertheless, the first "launch" of Vanguard on December 6, 1957 was an embarrassing failure. The vehicle lifted about one meter off the pad and then came crashing down to a fiery finale.

Recognizing the immediate need to establish the United States as at least the technological equal of the Soviet Union, President Eisenhower relented and gave ABMA permission to launch the Jupiter C rocket. The launch was successfully accomplished on January 31, 1958, carrying the 8 kilogram Explorer 1 satellite, which led to the discovery of the Van Allen radiation belts. Vanguard finally made its first successful orbital flight on March 17, 1958 carrying the 2 kilogram Vanguard satellite (leading to the discovery that the Earth is slightly pear-shaped).

President Eisenhower still wanted to maintain separate military and civilian space programs, however, and in a Special Message to Congress on Space Science and Exploration on April 28, 1958, he outlined his proposal to establish the National Aeronautics and Space Administration (NASA) to conduct the nation's civilian space programs. Under the plan, responsibility for military space activities would remain with the Department of Defense.

The President's proposal, as modified by Congress, was enacted into law three months later, on July 29, 1958, and created NASA as of October 1, 1958. Section 102(b) of the National Aeronautics and Space Act established the dual space program responsibilities which we have today:

> The Congress declares that the general welfare and security of the United States require that adequate provision be made for aeronautical and space activities. The Congress further declares that such activities shall be the responsibility of, and shall be directed by, a civilian agency exercising control over aeronautical and space activities sponsored by the United States, except that activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States shall be the responsibility of, and shall be directed by, the Department of Defense ....

Some of the activities which had been conducted by the military services, such as ABMA's launch vehicle program, under the direction of Wernher von Braun, and the Jet Propulsion Laboratory, which built the Explorer satellite, were transferred to NASA.

The Space Act included a mechanism to coordinate activites between DOD and NASA — the Civilian/Military Liaison Committee — but it was abolished in 1965. Formal coordination between the agencies has been left primarily to the Aeronautics and Astronautics Coordinating Board, established by an interagency agreement in 1960, although informal mechanisms have always been an important part of the relationship between the two agencies.

Although there was some discontent within the military over the creation of NASA, and within the various military services themselves over who should have what jurisdiction over particular space activities, the military and civilian space programs had been given their marching orders. Whatever rivalries existed did so unofficially. In appearances before Congress, harmony was the watchword.

The Moon Mandate

President Kennedy's 1961 mandate to land Americans on the moon by the end of the decade shaped U.S. civilian space programs for all of the 1960s.

On May 25, 1961, three weeks after Alan Shepard became the first American in space, President Kennedy addressed the Congress.

> ... I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish ....

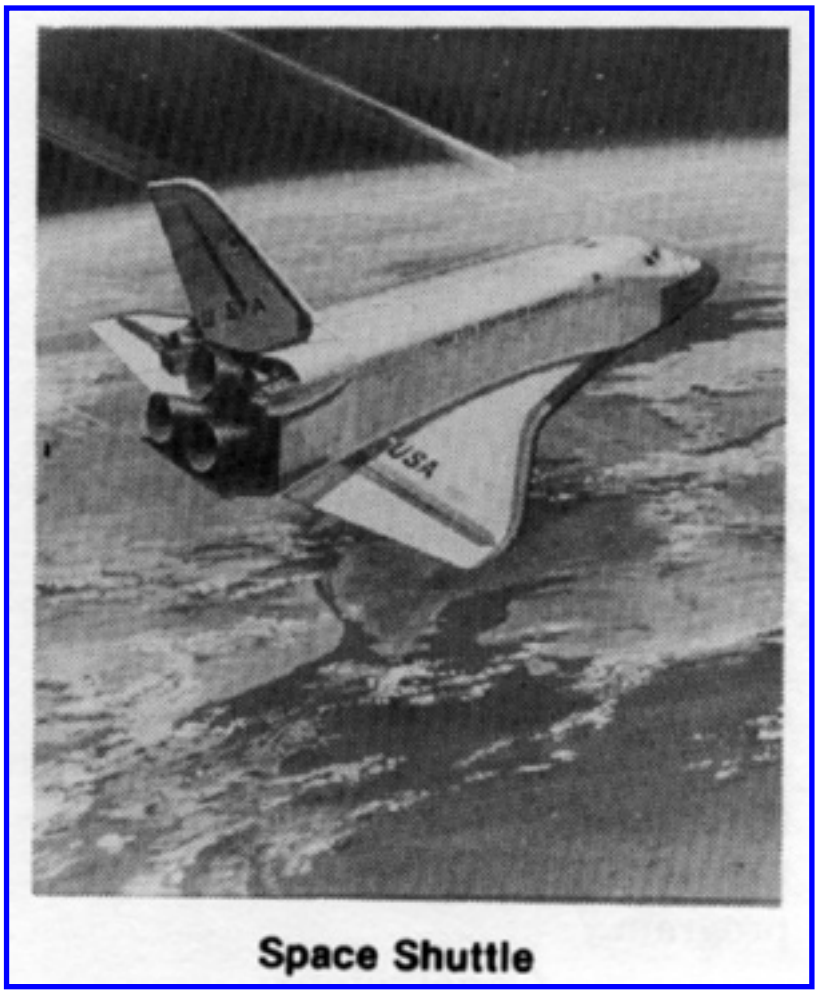
Congress and the Nation were willing to make the commitment. Space goals for the next decade were set — the Moon race was on.

While NASA concentrated on the Apollo program, and its other scientific and

applications programs, DOD moved along with its activities in space. Some of these were similar to NASA's programs, such as meteorology, communications, and reconnaissance satellites (essentially earth resources satellites with substantially better resolution limits).

Even though some NASA and DOD programs seemed duplicative, and subsurface rivalry continued throughout the 1960s, both agencies were generally able to argue their own cases for space funding and programs. As time passed and the economic health of the nation declined, attitudes towards space programs changed. Since DOD's programs were not well known to the public, and had national security implications as well, it was NASA which was accused of gobbling up scarce dollars for questionable purposes. Three of the Apollo moon landings were cancelled, and the once ambitious Apollo Applications Program for orbiting space laboratories was scaled down to involve only one space station (Skylab) to which three crews were sent in 1973 and 1974.

The focus of the civilian space program for the 1970s became development of a reusable space transportation system for carrying cargo back and forth to Earth orbit, called the space shuttle. In 1972, President Nixon gave the go-ahead for development of the shuttle as a national space system for both civilian and military users. The Department of Defense had input as to specifications for the shuttle (for example, how large the cargo bay shoud be), but it was primarily a NASA program. Since both DOD and NASA would be using the system, the questions of how costs should be shared and how the agencies would interact once the shuttle was in operation, arose as the program progressed.



Space Shuttle

In 1978, President Carter addressed these issues in two Presidential directives. The first concerned the interaction between the various governmental space programs (NASA, DOD, Department of Commerce, etc.). Among other things, NASA was directed to pay virtually all the costs associated with development of the space shuttle, and DOD was given the authority to "bump" civilian payloads from scheduled shuttle flights if a DOD launch was required for national security purposes.

The second directive addressed goals for the civilian space program for the next decade, and was subsequently criticized for not specifying programs to accomplish those goals. Four bills were introduced in the 96th Congress addressing the need for a more definitive civilian space policy. Hearings were held in both the House and Senate, but none of the bills was reported from committee.

The Policy Debate Continues into 1981

The Carter administration decision to have NASA pay the majority of costs for the space shuttle (estimated at $9.9 billion through the end of the four test flights in 1982) placed severe strains on that agency's budget. In FY 1982, for example, the NASA budget request includes $2.2 billion for the shuttle, out of a total NASA budget (for space and aeronautics) of $6.1 billion. As a result, many other NASA programs have been cancelled, deferred, or simply not started. The Reagan budget request for NASA in FY 1982 resulted in cancellation or deferral of all new program initiatives in space science, applications, and aeronautics that had begun in FY 1981 or had been proposed for FY 1982.

Space science, which its supporters felt had suffered as a result of the Apollo program, has borne the brunt of funding restrictions caused by NASA's latest manned space program as well. Included among the cancelled space science programs was U.S. participation in a joint project with the European Space Agency (ESA).

The International Solar Polar Mission was designed to have two spacecraft (one United States and one European) for simultaneous observations of the north and south poles of the sun. The U.S. decision to abrogate its agreement with ESA on this program was not formally discussed prior to its announcement, and chilled relations between the two groups. The full implications of this action for future

international cooperation in space are not yet known. (Congress may restore funding for U.S. participation in this mission).

The space budget of the Department of Defense is now almost equivalent to the whole of NASA's budget. The FY 1982 request is $5.8 billion, of which $538 million is for DOD's part of the shuttle program (an additional $419 million is requested for the inertial upper stage and construction of a shuttle launch facility at Vandenberg Air Force Base, California). In addition, DOD is constructing a Consolidated Space Operations Center (CSOS) near Cheyenne Mountain, Colorado for command and control of military shuttle flights (it will also backup NASA's shuttle control facility at Johnson Space Center).

Other DOD space programs include satellites for reconnaissance (photographic, electronic, ocean surveillance, nuclear explosion detection, and early warning), meteorology, navigation, and communications (at the present time approximately 70 percent of U.S. overseas military communications are routed through space). DOD is also developing an "antisatellite" (ASAT) device which can be used to destroy enemy satellites by launching a small missile from an F-15 aircraft (the Soviet Union already has an operational ASAT capability using a different type of system).

The Reagan administration has begun its own interagency review of space, although no timetable for a completion of the study has been announced. In Congress, the subject continues to receive attention, and two bills have been introduced to set a new civilian U.S. space policy. On May 28, Rep. George Brown reintroduced his space policy bill from the 96th Congress (H.R. 3712), and on July 28, Rep. Newton Gingrich introduced the "National Space and Aeronautics Policy Act of 1982" (H.R. 4286).

In addition, a congressional staff space group has been established to provide a forum for Members and their staffs who are interested in space. One goal of the group, which is also enunciated in the Gingrich bill, is to support construction of permanent Earth-orbiting space stations. NASA has shown a strong interest in making such a station its next manned space priority. There is also a growing interest in increasing private industry's direct participation in space activities.

The relationship between the military and civilian space programs has not yet been

directly addressed by recent legislative initiatives in the Congress, although it has been discussed in hearings on space policy in general. The views expressed in hearings reinforce the separation between military and civilian space activites. For example, in its report on 1980 space policy hearings, the House Science and Technology Committee's Sub-committee on Space Science and Applications recommended that "The civil and military space programs should be examined separately and their funding adjusted according to the requirements developed for each program."

Conclusions

The views of space policy planners in 1981 regarding the separation of military and civilian space activities seem to parallel those of 1958. The idea of separating the programs to demonstrate U.S. interest in using space for peaceful purposes still seems valid today, despite the growing military role in space. Perhaps of greater concern, though, is that military programs might overwhelm those not within the purview of NASA if both were managed by the same agency.

The line between military and civilian activities, however, is becoming increasingly blurred. The space shuttle is the main cause for this, since it will be the single launch vehicle used for all U.S. space activities. The Soviet Union has publicly stated its view that the shuttle is a military vehicle, an opinion which has been expressed in other quarters as well. The shuttle will, in fact, have a significant military role, not only in carrying DOD satellites into orbit, but in programs such as Talon Gold (which is related to developing technology which may be applicable to space-based lasers). Whether or not Congress will formally review the issue of maintaining separate civilian and military programs is unknown, but the question may lose impact if NASA's programs continue to be cut and DOD's continue to be increased.

The question of needing a new civilian space policy, which would certainly help NASA retain its separate identity, is likely to be addressed by those committees of Congress with jurisdiction over NASA authorizations, if not the whole Congress.

The magnitude and character of space activities is growing and changing throughout the world. A reassessment of what U.S. space policy should be to best take advantage of this climate may assume added importance as the U.S. military

role expands, and the space shuttle continues through its series of test flights, the second of which was November 12-14, 1981, with the third scheduled for this spring.

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Note: "U.S. Space Policy" is an abridged version of Marcia Smith's article which was featured in the September 1981 issue of the "Congressional Research Service REVIEW" to which readers should refer for more details. Reproduced by permission.

Comment: Although not widely known, Russia was in the race to the Moon until, after several spectacular launch disasters of gigantic Moon-rockets, it withdrew.

— Ed.

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