Q: Larry, you're giving conflicting signals here. You have Feldstein giving one set of signals and Regan giving another.

A: And what were the words out of mouth? That economists can debate this till the cows come home.

Q: They're your economists and they should be speaking with one voice.

A: Reasonable men have differing opinions and the president has asked for differing opinions.

Q: What is the administration position?

A: Bob (Timberg, Baltimore Evening Sun), how many times have you asked it? How many times have you asked it?

Q: You're saying that you don't really care?

A: Now did you hear me say that? Did you write that down back there?

Q: What is the position?

A: I've stated it. Lower deficits through lower federal spending.

Q: Does that mean lower interest rates?

A: It remains to be seen, Saul (Friedman, Knight-Ridder), you'll have to see.

Q: So there is no administration position on linkage between deficits and interest rates?

A: I don't know that there is any agreement among economists on this issue.

Q: There is no administration position on the question either?

A: I don't know that it can be resolved.

Q: (Is) the White House saying . . . that the administration doesn't know whether lower interest rates will result if we lower deficits as the result of lowering federal spending? That's the bottom line of what you just said.

A: You know, all the economic theories, Saul, are subject to interpretation and, really, you have to take a historical perspective.

Q: If I'm not mistaken, it's the administration position that those budget deficits do threaten economic recovery, [isn't] it?

A: I don't know that you ever heard the president say it. You might have heard some of his advisers say it.

Q: What's the policy here of having Feldstein going out and saying one thing and Regan going out and saying another thing?

A: You can't even pronounce his (Feldstein's) name. When you get out of here you go over to the Treasury Department and then you go over to the EOB (Executive Office Building) and then you come back here . . .

Q: Is it the policy that it's okay for these guys to state different opinions?

A: The president wants strong-willed men. You know what Harry Truman said about the one-armed economists.

Q: One-handed.

A: They'd say on the one hand this and the other hand that.

Q: You've said the president has no view on the subject?

Q: Do deficits count, as Feldstein says, on interest rates?

A: That's a matter economists can debate till the cows come home . . . The president's view is that our policy objective is to bring deficts down. We want reductions in federal spending.

Q: Does he still think if you bring deficits down you bring interest rates down?

A: I don't think he's stated a position on it.

Q: Why should we bring deficits down if we don't know what they do about interest rates?

A: Bringing them down would put the government on an even keel and make it pay its own way. Read Ronald—the gospel according to Ronald Reagan.

Q: You don't know whether the president believes that deficits impinge on interest rates? Can you find out?

A: I think the president could probably give both sides of the argument if you like.

Q: Doesn't he have an opinion at all? He doesn't know?

A: He's familiar with the arguments on both sides, and I think, as I say, you can argue those points, and economists will at the drop of a hat, until the cows come home.

Q: He did during the campaign.

A: What was his position?

Q: He said high deficits cause high interest rates.

A: Well, interest rates have been cut in half and the deficit has doubled.

Q: Well, was he wrong, Larry?

A: Well, that sounds like a UPI lead. It's certainly not an AP lead. "The president says the economists can debate this till . . ."

Q: [In unison] . . . the cows come home.

Q: I want to take a stab . . .

A: Paul (Rodriquez, Bureau of National Affairs, a group of newsletters) . . . you're well over your quota today.

Q: I'm not getting an answer . . .

Q: (New questioner): Can I take one last shot? If the president gets lots of advice and he says he doesn't want yes men . . . at a certain point he has to form an opinion. Clearly this is an issue [on which] one would think he would have formed an opinion. All we're asking is 'Where does the president come down?'

A: He doesn't have to have an opinion on this in order to go after reducing deficits through reducing federal spending and telling Congress we want to cut this federal spending.

Q: What is the purpose in cutting federal spending?

A: Balance the budget, reduce the deficit.

Q: And the reason is?

A: Paul, how many times have I got to tell you? Cool it.●

DISABILITY REFORM MEASURE NEEDS IMMEDIATE ATTENTION

HON. MARIO BIAGGI

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Monday, October 17, 1983

● Mr. BIAGGI. Mr. Speaker, I have joined with a number of my colleagues as a member of the Select Committee on Aging in examining the ongoing problems associated with required reviews of social security disability beneficiaries. We have also been actively involved in soliciting the views, opinions, and recommendations of State and local officials associated with this program on how best to reform the existing system.

I believe that comprehensive legislative reform is not only necessitated, but is essential if we are to prevent the benefits of those disabled individuals who truly need them. That legislative reform is best outlined in the Social Security Disability Benefits Reform Act of 1983 makes major revisions in the eligibility reviews. More importantly, it codifies the review process so that beneficiaries will not be subjected to the arbitrary and capricious whims of administrators of this program.

The major provisions of H.R. 3755 include: First, a requirement that there be medical improvement before benefits can be stopped; second, require the Social Security Administration to adhere to appeals court decisions in their regional administration of the program; third, continuing payments of benefits until all appeals have been exausted through the administrative law judge level; fourth, provision of a face-to-face meeting with the original decisionmaker before issuing a formal decision to terminate benefits; and fifth, require that any future program and policy changes be printed as regulations subject to public comment and review.

As a cosponsor of this measure I believe that it offers a rational and humane way of protecting the rights and benefits of our disabled population. It will help us to avoid the painful spectre of hundreds of thousands of eligible individuals being thrown off the roles without recourse.

In my own State of New York, Governor Cuomo led the Nation in stopping all reviews of those on the disability rolls until a more uniform method can be adopted. Since the announcement by the State's department of social services last July that the "legal and moral obligations of the disabled were not being met," 11 other States have followed suit and banned further review of beneficiaries. This national outcry was a result of 374,000 people being removed from the disability rolls since March 1981 when the Social Security Administration announced a crackdown on the program to implement a 1980 law which mandates reexamination of recipients once every 3 years unless they are permanently disabled.

As a result of this hasty review, the Select Committee on Aging has been actively examining the national impact of this review on elderly beneficiaries. We believe that H.R. 3755 is the proper approach in addressing the dual concerns of protecting benefits which simplifying the administration of a program which pays $18 billion a year to 3.9 million individuals. I will work closely with my colleagues to provide for timely consideration of this very important legislation so that the rights of the disabled to these benefits are protected from administrative discretion and budget-cutting whims of those who would rather see denials instead of protections these benefits.●

NO ARMS RACE IN SPACE

HON. ROBERT W. KASTENMEIER

OF WISCONSIN

IN THE HOUSE OF REPRESENTATIVES

Monday, October 17, 1983

● Mr. KASTENMEIER. Mr. Speaker, I strongly recommend that my colleagues read the October 16, 1983, Washington Post article by Fred Kaplan on the arms race in space.

The United States and the Soviet Union have a chance to stop the very

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dangerous and most expensive development of space-based weapons systems. Soviet President Andropov has proposed that the United States and the Soviet Union agree to a ban on space weapons. Fred Kaplin, author and defense correspondent for the Boston Globe, has presented a most convincing case for negotiating a ban on antisatellite weapons now.

The Reagan administration, if it wants to convince the American people and the world that is it serious about arms control, has the chance to show that it is by agreeing to negotiate with the Soviets to ban weapons in space.

[From the Washington Post, Oct. 16, 1983]

WE ARE ABOUT TO LAUNCH A COSTLY AND CRAZY ARMS RACE IN SPACE

(By Fred Kaplan)

Sometime very soon, (the date is classified), the United States will test a weapon system that promises to burst through a new threshold in the arms race—a race for military supremacy in outer space. This competition will be almost unimaginably expensive; it will be almost impossible to turn back once it has commenced, and even if the weapons involved work the way they are supposed to, the nation will be less secure in the end.

The new weapon seems deceptively harmless at first glance: a 12-by-13 inch cylinder, loaded with telescopes and infrared sensors, attached to a two-stage rocket small enough to fit under an F-15 jet fighter. The drama—and potential danger—lies in what this small package is designed to do. It's called a Miniature Homing Vehicle (MHV), and the idea is to fly the F-15 almost vertically up to the edge of the atmosphere, then fire the MHV into outer space, where it will home in on—and kill—an enemy satellite.

If the first few tests of the MHV system succeed, we may find ourselves propelled, almost inexorably, toward a new era of military conflict, Maj. Gen. John H. Storrie, director of space for Air Force plans and operations, told a House committee last March: "Space is a place; it is not a mission. We are going to continue to do the things in space that we do in the atmosphere and on the ground and on the seas"—that is, to prepare to fight and win wars. A study signed last year by the Air Force chief of staff, titled "Air Force 2000," calls for "space superiority," which requires "the capability to destroy hostile space systems."

Already, both sides—especially the United States—depend on space for a wide variety of military missions. Most of what we know about the Soviet military, especially about its nuclear weapons, comes from satellites. A great deal of military communications command-control networks, navigational aids and other support systems also are channeled through satellites. Moreover, Maj. Gen. Bernard Randolph, director of the Air Force space systems, has testified that a "major" objective of U.S. space plans is "to expand" our military capabilities in space.

The more we rely on military platforms in space, the more incentive the Soviets will have to develop their own advanced antisatellite (ASAT) weapons, and thus an increasingly crucial element of our military command network will become increasingly vulnerable.

"Right now," according to Paul Stares of the Brookings Institution, "if we lose our space systems, we'd be hurt but not crippled. If we continue to increase our dependence on space systems, then we're just digging a hole for ourselves."

There's one way out of this hole—and that is to negotiate an ASAT arms-control agreement with the Russians. Yet after our forthcoming ASAT tests, this may be impossible. Air Force officials have testified that it will take only six hours to install an MHV ASAT system on an F-15 fighter anywhere in the world, at a cost of only $632,000 per plane. Says Stares, "There's no way the Russians could have confidence that every F-15 isn't carrying an ASAT. What are going to do? Paint the F-15 different colors if it has an ASAT mission?"

Ironically, this moment when we are about to test a new ASAT system is both the last and probably one of the best opportunities for getting ASAT arms-control negotiations under way. To see why requires a brief digression into history.

The United States was the first to develop an ASAT system. From 1963-67, the U.S. Army tested some of its Nike-Zeus ABMs as satellite killers. From 1964-68, the U.S. Air Force fired Thor missiles at deactivated satellites in outer space in what was called the "Squanto Terror" tests (or, in a lower key, "Program 437"). This program was kept alive until 1975.

Not until 1968—well after the Air Force had delcared Program 437 "operational"—did the Soviets start up their own ASAT program. The Soviet system is substantially more unwieldy than either the U.S. programs of the 1960s or our forthcoming MHV plan. Their scheme was to launch a "killer satellite" in an orbit that crosses an enemy satellite, and then to blow up the killer, destroying the enemy spacecraft with shrapnel.

Over the next 14 years, the Soviets conducted 20 tests. They have used two different types of guidance systems. One directs the killer-satellite by shining a radar beam on the target. The other is more passive, with infrared systems which seek out the target by the heat that it generates in outer space.

According to John Pike of the Federation of American Scientists, the Russians tested the radar-seeker version 14 times, most recently in 1981, of which 10 were successes. However, more recently, they tested the passive infrared-seeker version six times—and all six were duds.

Even the 10 successes had their limitations. They were all conducted at low altitudes, whereas most U.S. satellites—including all early-warning satellites—are stationed at very high altitudes. There were also conducted within very narrow angles or inclinations (from 60 to 66 degrees), making it difficult to approach even the low-altitude American satellites. Stephen Meyer of MIT concludes, "They've really never had a test of what is would be like going against a real U.S. target."

From 1977-81, the Soviets stopped testing ASATs. Over part of that period, the U.S. and the U.S.S.R. held three series of talks on negotiating an ASAT arms-control agreement. Then came the Soviet invasion of Afghanistan, the death of SALT II—and the ASAT talks faded away.

Last August, Soviet leader Yuri Andropov announced a moratorium on all ASAT testing, and Foreign Minister Andrei Gromyko Submitted an ASAT arms-control proposal to the United Nations, with terms that seem to indicate seriousness. One obvious reason for this seriousness is a realization that the United States is about to come out with a new ASAT system that will probably be much more successful than the Soviet model.

Indeed, administration officials have treated the idea of negotiations dismissively precisely because Andropov has proposed them. The reasoning: his fear of our ASAT only confirms that it can give us an edge in the arms race.

But this is shortsighted, and not just because it lessens the likelihood of an arms-control treaty. If the United States goes ahead and tests its new ASAT system, the Soviets undoubtedly will break the moratorium and resume their own testing—and probably develop a better weapon than the one they have now. This will provoke us to upgrade our system . . . And the race is on.

From here, any number of scenarios can be imagined: the U.S. or the U.S.S.R. (or both) develops an ASAT that can (potentially) strike satellites at high altitudes as well as low altitudes, thus endangering the all-important early-warning satellites. The other side then develops a system—perhaps involving lasers—that can attack this new ASAT system. Or perhaps he develops a space-based battle station that can defend the satellites. Then the other side builds systems that can attack the defenders. And so it goes. . . .

Indeed, this scenario is precisely what some people have in mind. Although the U.S. Miniature Homing Vehicle program dates back to 1978, its most ardent supporters view it as an entering wedge into the whole panoply of space weapons—some on the drawing boards, some as yet only sparks and glimmers in the fertile imaginations of technocratic enthusiasts—that fall under the rubric of "Star Wars."

Star Wars advocates tasted their first dose of legitimacy last March, when President Reagan told a nationwide TV audience of his "vision of the future." He held out the "hope" that a network of antiballistic missiles (ABMs), space lasers and battle stations—based on decades of research—will "intercept and destroy strategic ballistic missiles before they reach our own soil or that of our allies."

For years, a fringe element—led by Sen. Malcolm Wallop (R-Wyo.) in Congress, Edward Teller and Gen. Daniel Graham (Ret.) in the military-scientific community, and several others in various bureaucracies and think tanks on the east and west coasts—have been keen on moving the arms competition into space. A very small group within the Air Force, recently organized into a Space Command, believes that space can be—as Thomas Karas calls it in his book that chronicles this community—"The New High Ground" from which the United States can reign supreme in all other arenas of warfare.

Reagan's speech—which was heavily influenced by talks with Teller—gave this group the legitimacy that it has long sought. Almost at once, "Beltway bandits" and other consulting firms put in contract bids to study "the military utility of space." More important, it becamse a high-priority issue inside the national-security bureaucracy.

Over the summer, three major outside studies were commissioned on the politics and technology of Star Wars. At this moment, an interagency group consisting of officials from the State Department, the Pentagon, the National Security Council and the Arms Control and Disarmament Agency is drawing up evaluations of those studies to present to the president sometime within the next month.

Officials involved in the studies and the interagency meetings say that nobody now knows how to go about even beginning to build a Star Wars system. Says one Pentagon official, "At this point we have no consensus on what it all means. . . . I don't think we have the kind of answers that we could base any sort of policy on."

In any case, officials are discovering technical problems that may be insurmountable. A ground-based laser wouldn't work through clouds. Even Maj. Gen. Bernard Randolph, director of Air Force space systems, told a House committee last spring

that a space-based laser would require 10 megawatts of power (some say much more) and would weigh 150,000 pounds—well beyond the transport capacity of the Space Shuttle. To provide even "a thin AB, capability," we would need 50-100 of these systems. Furthermore, the systems must have perfect accuracy; he likened the mission to pointing a beam "from the Washington Monument to a baseball on the top of the Empire State Building and hold[ing] it there while both of you are moving."

Then there's the cost. Air Force studies have put it at $500 billion. An analyst on one of the government-sponsored study-groups puts it as high as $1.2 trillion.

And that probably would not be the end of it. Officials and analysts point out that the Russians could "spoof" any space-based ABM system much more cheaply than it would take us to build one. Just a few techniques: cover the surface of a missile with a mirror that reflects the laser beam; jam the communications between the space system and the ground-control station; shoot it down with a laser system yourself. As one skeptical official puts it, "If it can shoot down a ballistic missile, why can't it shoot down its twin brother?"

Still, the interagency group will not advise Reagan to abandon the Star Wars idea as a piece of budget-busting, technically hopeless pie-in-the-sky. "This is the president's program," says one skeptical official. "We can't tell the president that he's got a nutty idea." Instead, it will probably recommend that the military send the next several years doing research on whether these problems can be overcome. Even this will cost quite a bit of money.

For example, Robert S. Cooper, Director of the Defense Advanced Research Projects Agency (DARPA), testified last spring that the "Space Laser Program Plan," which will merely "bring us to a point where we can make reliable planning estimates of weapon development costs and schedules," will cost $900 million. Other basic research of this sort could cost as much as $4 billion a year—maybe more—for several years; and even then, nobody will know very much more than before.

All of which leads some analysts to wonder whether it is sensible to start treading down this seemingly endless road to begin with. Though the ASAT program and the Star Wars scheme have different origins, the road to the latter can begin with the former. In fact, the kind of technology needed for advanced ASAT systems—tracking mechanisms, sensors, beams and so forth—is quite similar to the technology needed for shooting down ballistic missiles. And the logic of the ASAT/counter-ASAT arms race provides a grand opportunity for the Star War brigade to bring in their programs through various side or rear entrances if they end up getting locked out of the front door.

The Reagan administration, however, is drawing no connection between ASAT and Star Wars. There is an interagency group dealing with Star Wars and another dealing with ASAT—but they are composed a different people and they never meet. Similarly, the group concerned with ASAT is contemplating various arms-control ideas—but, according to officials, no one has seriously considered delaying the ASAT test until after these ideas have been fully explored.

In short, an historic opportunity to halt a whole new age in the arms race is being neglected, even ignored—not only by the administration, but by Congress as well. (It is worth noting that the nuclear freeze movements also have paid scant attention to the imminent prospect of an arms race in space.)

It wouldn't be the first time. In 1970, to cite just the most recent parallel, the United States deployed the Minuteman III intercontinental ballistic missile. It incorporated new technology called MIRVs (multiple independently targetable reentry vehicles), which allowed one missile to carry several warheads, each of which could be guided to separate targets.

Before MIRVs, a first strike destroying the other side's land-based missiles was impossible; one missile could hit only one enemy missile; if one side built extra missiles, the other side could counter by building more too. However, with MIRVs, a single missile could (theoretically) destroy several enemy missiles. If the U.S. and the U.S.S.R acquired MIRVs, both sides would be at once capable of destroying the other's land-based missiles and vulnerable to such an attack themselves.

Some U.S. officials favored proposing a ban on MIRVs during the Strategic Arms Limitation Talks, but this was rejected because others felt MIRVs gave us a strategic edge over the Russians. Four years later, the Russians deployed their own MIRVs, and now the same people who opposed a MIRV ban a decade ago decry the Soviet MIRVs which they claim have made our own Minuteman missiles vulnerable.

The most interesting strategic arms-control proposal of recent years calls for getting rid of MIRVs. But it's probably too late.

Henry Kissinger told reporters in 1974, "I would say in retrospect that I wish I had thought through the implications of a MIRVed world more thoughtfully in 1969 and 1970 than I did." But Kissinger's former NSC aides say that MIRVs were studied thoroughly, that Kissinger knew exactly what their implications were from the beginning, but went ahead with them anyway—to gain a strategic edge.

It's the same with the upcoming ASAT test and the growing political pressure for at least elements of the Star Wars plan. As in the case of MIRVs, the administration is failing—even refusing—to think through the implications before the world changes in ways it may later regret.●

A TRIBUTE TO LECH WALSEA

SPEECH OF

HON. ROMANO L. MAZZOLI

OF KENTUCKY

IN THE HOUSE OF REPRESENTATIVES

Thursday, October 6, 1983

● Mr. MAZZOLI. Mr. Speaker, I would like to pay tribute to Lech Walsea, the recipient of the Nobel Peace Prize for 1983.

Mr. Walsea has demonstrated untiring commitment and courage in defending the human rights and freedoms of his fellow workers and his fellow Poles.

His peaceful, nonviolent actions are a standard and an example for the world. The work of Lech Walsea gives hope to oppressed peoples throughout the world.●

AMERICA'S TECHNOLOGY HIGHWAY

HON. EDWARD J. MARKEY

OF MASSACHUSETTS

IN THE HOUSE OF REPRESENTATIVES

Monday, October 17, 1983

● Mr. MARKEY. Mr. Speaker, in recent months, the term high-tech has enlisted many followers as the key words for the economic renewal of our country. The term high-tech is nothing new to the people of Massachusetts and the residents of Route 128, America's technology highway. I am proud to represent the firms along Route 128 and am pleased to share in their success.

One of the pioneers along Route 128 was RCA Automated Systems, who established a research, manufacturing, and engineering site 25 years ago in Burlington, Mass. During these 25 years, RCA Automated Systems has made great contributions to the Commonwealth and our Nation as a leader and innovator among high-technology manufacturers. RCA Automated Systems has proved year after year that dedication to research and technology can propel our Nation into the technological revolution. RCA Automated Systems has been a leader in this revolution and I am proud to share with my colleagues their impressive accomplishments and congratulate RCA Automated Systems on their 25th anniversary.

I commend to my colleagues the following resolution:

HOUSE OF REPRESENTATIVES RESOLUTION

Whereas, It has been 25 years since RCA Burlington was established as a major research, engineering and manufacturing site in Massachusetts; and

Whereas, These events were a catalyst in the Technological Revolution that has advanced our State and Nation; and

Whereas, Cooperation and recognition between the Government and industry have triumphed establishing State Highway, Route 128, as 'America's Technology Highway'; and

Whereas, RCA Burlington's twenty-five years of electronic engineering success on 'America's Technology Highway' typifies Massachusetts' contribution to the security and prosperity of this Nation; now, therefore, be it

Resolved, by Mr. Edward J. Markey, United States Representative from the Seventh District in the State of Massachusetts:

That the day of October 21, 1983 be designated RCA Burlington Day throughout this State; and be it further

Resolved, That a duly authenticated copy of this resolution, signed by Representative and attested by the Clerk, be transmitted to Andrew T. Hospodor, Division Vice-President and General Manager, RCA Automated systems, Burlington, Massachusetts.●

The ACTING PRESIDENT pro tempore. Without objection, the motion is agreed to.

Mr. PROXMIRE. Mr. President, are we in morning business?

The PRESIDING OFFICER (Mr. SPECTER). Yes.

WHY WE MUST STOP A NUCLEAR ARMS RACE IN SPACE

Mr. PROXMIRE. Mr. President, in the Sunday, October 16, Washington Post, Fred Kaplan, defense correspondent for the Boston Globe, has written an article that every Member of the Congress should read. This Government seems poised on the brink of instituting a nuclear arms race in space that would destroy any realistic hope that we could achieve effective arms control, stop the arms race, and end the nightmare of nuclear war. Such a space race would be catastrophic because it would enable both the United States and Soviet Union to eventually develop the capability to knock out the other's intelligence and warning satellites.

Why would this make arms control impossible? Because the prime means of verification for both superpowers to keep any kind of agreement is the satellite. Satellites are literally our very eyes. Knock out the satellites and we must stagger and stumble around like a blind man surrounded by armed thugs, not knowing where the first shot is coming from and wholly defenseless. Verification would disappear, and with it any arms control agreement would collapse. Both sides would not only have no alternative except to go all out to win the arms race, but, worse, both sides would have the strongest kind of motive to strike at once. Without the verification of satellites we would have no idea what progress the Russians might be making and they would have no idea what progress we were making in building and deploying our nuclear arsenal. What has been the whole basis for our nuclear build up? Answer: Deterrence. But with satellites gone deterrence would vanish. What is even worse the situation would become even more explosive because our warning systems would be gone. Satellites can tell us when enemy missiles are on the way. They give us the vital early warning. Without that satellite warning, all the elaborate multibillion dollar system we have buried deep in the Colorado mountains to inform the President and permit our land based deterrent to strike back would be lost. Our first notice would be the mushroom cloud over every city or missile site or both, unless, of course, we were in the city, when we would vaporize into nothingness, or if we were a few miles away from the target center we would suffer intense heat, a rapid cremation and turn to ashes.

Here's what Kaplan reports in Sunday's Post:

Sometime very soon, the United States will test a weapon system that promises to burst through a new threshold in the arms race—a race for military supremacy in outer space. This competition will be almost unimaginably expensive; it will be almost impossible to turn back once it has commenced, and even if the weapons involved work the way they are supposed to, the nation will be less secure in the end.

Mr. President, consider that last sentence: Even if the weapons work the way they are supposed to work, the Nation will be less secure in the end. Think of that for a minute. What is the purpose of the billions we are pouring into our defense effort? We are told over and over again the purpose is to keep the peace, prevent war, provide us with greater security. And yet we are told by a highly expert observer that even if the very expensive project that we are about to launch works and works perfectly, we will be less secure. That is right, less secure. And Mr. Kaplan is right.

We will be less secure because our testing will kick off an arms race which will surely lead to the death of our absolutely vital verification tools—our satellites. Now you may say: "Wait a minute PROXMIRE. We're going to win this race. We're ahead of the Soviet Union in the accuracy and reliability of our system. We have the resources they don't have. We have superior scientists. Why not use our advantage to beat the Soviets? Why not forget about negotiating and fight it out on a field where they lose and we win?"

Here is Kaplan's answer:

Administration officials have treated the idea of negotiations dismissively precisely because Andropov has proposed them. The reasoning: his fear of our ASAT only confirms that it can give us an edge in the arms race.

But this is shortsighted, and not just because it lessens the likelihood of an arms-control treaty. If the United States goes ahead and tests its new ASAT system, the Soviets undoubtedly will break the moratorium and resume their own testing—and probably develop a better weapon than the one they have now. This will provoke us to upgrade our system. And the race is on.

Mr. President, I have not given the cost of this competition much attention because the very destruction of civilization must of course be the prime basis for opposing this Government undertaking such a tragic initiative. Many Americans cannot seem to understand the life and death argument but maybe they can understand dollar and cents cost. And in this case the cost will be horrendous. According to Kaplan, Defense advanced research projects estimates that just to bring us to a point where we can make reliable planning estimates of weapons development costs and schedules will cost $900 million. Other research necessary for this project would cost $4 billion a year or more for several years. This is just a tiny beginning.

Now get ready for the really big news—Air Force studies have put the cost at $500 billion—that is billion. And an analyst on one of the Government sponsored study groups estimates $1.2 trillion. Yes, I said trillion.

How utterly ridiculous, that we should contemplate spending more than a trillion dollars to do what? As Kaplan puts it "to make this Nation less secure."

Mr. President, I ask unanimous consent that the article to which I referred by Fred Kaplan in Sunday's Washington Post be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

WE'RE ABOUT TO LAUNCH A COSTLY AND CRAZY ARMS RACE IN SPACE

(By Fred Kaplan)

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If the first few tests of the MHV system succeed, we may find ourselves propelled, almost inexorably, toward a new era of military conflict. Maj. Gen. John H. Storrie, director of space for Air Force plans and operations, told a House committee last March: "Space is a place; it is not a mission. We are going to continue to do the things in space that we do in the atmosphere and on the ground and on the seas"—that is, to prepare to fight and win wars. A study signed last year by the Air Force chief of staff, titled "Air Force 2000," calls for "space superiority," which requires "the capability to destroy hostile space systems."

Already, both sides—especially the United States—depend on space for a wide variety of military missions. Most of what we know about the Soviet military, especially about its nuclear weapons, comes from satellites. A great deal of military communications, command-control networks, navigational aids and other support systems also are channeled through satellites. Moreover, Maj. Gen. Bernard Randolph, director of the Air Force space systems, has testified that a "major" objective of U.S. space plans is "to expand" our military capabilities in space.

The more we rely on military platforms in space, the more incentive the Soviets will have to develop their own advanced antisatellite (ASAT) weapons, and thus an increasingly crucial element of our military command network will become increasingly vulnerable.

"Right now," according to Paul Stares of the Brookings Institution, "if we lose our space systems, we'd be hurt but not crippled. If we continue to increase our dependence on space systems, then we're just digging a hole for ourselves."

There's one way out of this hole—and that is to negotiate an ASAT arms-control agreement with the Russians. Yet after our forthcoming ASAT tests, this may be impossible. Air Force officials have testified that it will take only six hours to install an MHV ASAT system on an F-15 fighter anywhere in the world, at a cost of only $632,000 per plane. Says Stares, "There's no way the Russians could have confidence that every F-15 isn't carrying an ASAT. What are we going to do? Paint the F-15 different colors if it has an ASAT mission?"

The United States was the first to develop an ASAT system. From 1963-67, the U.S. Army tested some of its Nike-Zeus ABMs as satellite killers. From 1964-68, the U.S. Air Force fired Thor missiles at deactivated satellites in outer space in what was called the "Squanto Terror" tests (or, in a lower key, "Program 437"). This program was kept alive until 1975.

Not until 1968—well after the Air force had declared Program 437 "operational"—did the Soviets start up their own ASAT program. The Soviet system is substantially more unwieldy than either the U.S. programs of the 1960s or our forthcoming MHV plan. Their scheme was to launch a "killer satellite" in an orbit that crosses an enemy satellite, and then to blow up the killer, destroying the enemy spacecraft with shrapnel.

Over the next 14 years, the Soviets conducted 20 tests. They have used two different types of guidance systems. One directs the killer-satellite by shining a radar beam on the target. The other is more passive, with infrared systems which seek out the target by the heat that it generates in outer space.

According to John Pike of the Federation of American Scientists, the Russians tested the radar-seeker version 14 times, most recently in 1981, of which 10 were successes. However, more recently, they tested the passive infrared-seeker version six times—and all six were duds.

Even the 10 successes had their limitations. They were all conducted at low altitudes, whereas most U.S. satellites—including all early-warning satellites—are stationed at very high altitudes. They were also conducted within very narrow angles or inclinations (from 60 to 66 degrees), making it difficult to approach even the low-altitude American satellites. Stephen Meyer of MIT concludes, "They've really never had a test of what it would be like going against a real U.S. target."

From 1977-81, the Soviets stopped testing ASATs. Over part of that period, the U.S. and the U.S.S.R. held three series of talks on negotiating an ASAT arms-control agreement. Then came the Soviet invasion of Afghanistan, the death of SALT II—and the ASAT talks faded away.

Last August, Soviet leader Yuri Andropov announced a moratorium on all ASAT testing, and Foreign Minister Andrei Gromyko submitted an ASAT arms-control proposal to the United Nations, with terms that seem to indicate seriousness. One obvious reason for this seriousness is a realization that the United States is about to come out with a new ASAT system that will probably be much more successful than the Soviet model.

Indeed, administration officials have treated the idea of negotiations dismissively precisely because Andropov has proposed them. The reasoning: his fear of our ASAT only confirms that it can give us an edge in the arms race.

But this is shortsighted, and not just because it lessens the likelihood of an arms-control treaty. If the United States goes ahead and tests its new ASAT system, the Soviets undoubtedly will break the moratorium and resume their own testing—and probably develop a better weapon than the one they have now. This will provoke us to upgrade our system. . . . And the race is on.

From here, any number of scenarios can be imagined: the U.S. or the U.S.S.R. (or both) develops an ASAT that can (potentially) strike satellites at high altitudes as well as low altitudes, thus endangering the all-important early-warning satellites. The other side then develops a system—perhaps involving lasers—that can attack this new ASAT system. Or perhaps he develops a space-based battle station that can defend the satellites. Then the other side builds systems that can attack the defenders. And so it goes.

Indeed, this scenario is precisely what some people have in mind. Although the U.S. Miniature Homing Vehicle program dates back to 1978, its most ardent supporters view it as an entering wedge into the whole panoply of space weapons—some on the drawing boards, some as yet only sparks and glimmers in the fertile imaginations of technocratic enthusiasts—that fall under the rubric of "Star Wars."

Star Wars advocates tasted their first dose of legitimacy last March, when President Reagan told a nationwide TV audience of his "vision of the future." He held out the "hope" that a network of antiballistic missiles (ABMs), space laser and battle stations—based on decades of research—will "intercept and destroy stategic ballistic missiles before they reach our own soil or that of our allies."

For years, a fringe element—led by Sen. Malcolm Wallop (R-Wyo.) in Congress, Edward Teller and Gen. Daniel Graham (Ret.) in the military-scientific community, and several others in various bureaucracies and think tanks on the east and west coasts—have been keen on moving the arms competition into space. A very small group within the Air Force, recently organized into a Space Command, believes that space can be—as Thomas Karas calls it in his book that chronicles this community—"The New High Ground" from which the United States can reign supreme in all other arenas of warfare.

Reagan's speech—which was heavily influenced by talks with Teller—gave this group the legitimacy that it has long sought. Almost at once, "Beltway bandits" and other consulting firms put in contract bids to study "the military utility of space." More important, it became a high-priority issue inside the national-security bureaucracy.

Over the summer, three major outside studies were commissioned on the politics and technology of Star Wars. At this moment, an interagency group consisting of officials from the State Department, the Pentagon, the National Security Council and the Arms Control and Disarmament Agency is drawing up evaluations of those studies to present to the president sometime within the next month.

Officials involved in the studies and the interagency meetings say that nobody now knows how to go about even beginning to build a Star Wars system. Says one Pentagon official, "At this point we have no consensus on what it all means. . . . I don't think we have the kind of answers that we could base any sort of policy on."

In any case, officials are discovering technical problems that may be insurmountable. A ground-based laser wouldn't work through clouds. Even Maj. Gen. Bernhard Randolph, director of Air Force space systems, told a House committee last spring that a space-based laser would require 10 megawatts of power (some say much more) and would weigh 150,000 pounds—well beyond the transport capacity of the Space Shuttle. To provide even "a thin ABM capability," we would need 50-100 of these systems. Furthermore, the systems must have perfect accuracy; he likened the mission to pointing a beam "from the Washington Monument to a baseball on the top of the Empire State Building and hold[ing] it there while both of you are moving."

Then there's the cost. Air Force studies have put it at $500 billion. An analyst on one of the government-sponsored study-groups puts it as high as $1.2 trillion.

And that probably would not be the end of it. Officials and analysts point out that the Russians could "spoof" any space-based ABM system much more cheaply than it would take us to build one. Just a few techniques: cover the surface of a missile with a mirror that reflects the laser beam; jam the communications between the space system and the ground-control station; shoot it down with a laser system yourself. As one skeptical official puts it, "If it can shoot down a ballistic missile, why can't it shoot down its twin brother?"

Still, the interagency group will not advise Reagan to abandon the Star Wars idea as a piece of budget-busting, technically hopeless pie-in-the-sky. "This is the president's program," says one skeptical official. "We can't tell the president that he's got a nutty idea." Instead, it will probably recommend that the military spend the next several years doing research on whether these problems can be overcome. Even this will cost quite a bit of money.

For example, Robert S. Cooper, Director of the Defense Advanced Research Projects Agency (DARPA), testified last spring that the "Space Laser Program Plan," which will merely "bring us to a point where we can make reliable planning estimates of weapon development costs and schedules," will cost $900 million. Other basic research of this sort could cost as much as $4 billion a year—maybe more—for several years; and even then, nobody will know very much more than before.

All of which leads some analysts to wonder whether it is sensible to start treading down this seemingly endless road to begin with. Though the ASAT program and the Star Wars scheme have different origins, the road to the latter can begin with the former. In fact, the kind of technology needed for advanced ASAT systems—tracking mechanisms, sensors, beams and so forth—is quite similar to the technology needed for shooting down ballistic missiles. And the logic of the ASAT/counter-ASAT arms race provides a grand opportunity for the Star War brigade to bring in their programs through various side or rear entrances if they end up getting locked out of the front door.

The Reagan administration, however, is drawing no connections between ASAT and Star Wars. There is an interagency group dealing with Star Wars and another dealing with ASAT—but they are composed of different people and they never meet. Similarly, the group concerned with ASAT is contemplating various arms-control ideas—but, according to officials, no one has seriously considered delaying the ASAT test until after these ideas have been fully explored.

In short, an historic opportunity to halt a whole new age in the arms race is being neglected, even ignored—not only by the administration, but by congress as well. (It is worth noting that the nuclear freeze movements also have paid scant attention to the imminent prospect of an arms race in space.)

It wouldn't be the first time. In 1970, to cite just the most recent parallel, the United States deployed the Minuteman III intercontinental ballistic missile. It incorporated new technology called MIRVs (multiple independently targetable reentry vehicles), which allowed one missile to carry several warheads, each of which could be guided to separate targets.

Before MIRVs, a first strike destroying the other side's land-based missiles was impossible; one missile could hit only one enemy missile; if one side built extra missiles, the other side could counter by building more too. However, with MIRVs, a single missile could (theoretically) destroy several enemy missiles. If the U.S. and the U.S.S.R. acquired MIRVs, both sides would be at once capable of destroying the other's land-based missiles and vulnerable to such an attack themselves.

Some U.S. officials favored proposing a ban on MIRVs during the Strategic Arms Limitation Talks, but this was rejected because others felt MIRVs gave us a strategic edge over the Russians. Four years later, the Russians deployed their own MIRVs, and now the same people who opposed a MIRV ban a decade ago decry the Soviet MIRVs which they claim have made our own Minuteman missiles vulnerable.

The most interesting strategic arms-control proposal of recent years calls for getting rid of MIRVs. But it's probably too late.

Henry Kissinger told reporters in 1974, "I would say in retrospect that I wish I had thought through the implications of a MIRVed world more thoughtfully in 1969 and 1970 than I did." Kissinger's former NSC aides say that MIRVs were studied thoroughly, that Kissinger knew exactly what their implications were from the beginning, but went ahead with them anyway—to gain a strategic edge.

It's the same with the upcoming ASAT test and the growing political pressure for at least elements of the Star Wars plan. As in the case of MIRVs, the administration is failing—even refusing—to think through the implications before the world changes in ways it may later regret.

TAKING A STEP TOWARD PEACE AND JUSTICE

Mr. PROXMIRE. Mr. President, this month Time magazine released its 60th anniversary issue, which chronicles our world's recent history from 1923 to the present. Reviewing this issue, I was both fascinated at how much our world has changed and horrified at how much it has stayed the same.

Governments have changed hands, man has explored new worlds, computers have revolutionized the way we work, play, and think. We have survived two world wars, the Depression, the assassination of one President and the resignation of another. We have been proud in our moments of success, and courageous in our times of hardship.

Yet, while our people enjoy a free and democratic society, others remain oppressed. While we enjoy a safe and secure Nation, other cultures have faced extinction.

The pages of Time were covered with the mind-boggling facts of genocidal acts in Eastern Europe during the Holocaust, in Cambodia during Pol Pot's reign of terror, and in Uganda under the tyrannical Idi Amin. Sadly, in the area of human rights, our world has made little progress. These tragedies of the past are continuing in our present, as we have seen in Khomeini's persecution of the Bahais in Iran. Though we have the means of deterrence, though we have the ability to step forward, we stand in place and allow the destruction of entire cultures to continue.

The classic case of our failure to act is the Genocide Convention. This treaty was first proposed in 1949. For 34 years it has awaited ratification by the United States, with all the influence and power that brings. The treaty needs the strength of our support. For that reason, I have been speaking before the Senate since 1967 urging its ratification.

The time to act was yesterday, and even before that. But since we cannot go back in time and erase what has already been permanently etched in history, then the time to act is now.

Let us take a step off of history's bleeding cycle, and let us move ahead toward peace and justice for all people through ratification of the Genocide Treaty and the promotion of its worthy ideals.

NOTE

In the RECORD of October 6, 1983, at page S13763, third column, the remarks attributed to Mr. ARMSTRONG were the remarks of Mr. COHEN. The permanent RECORD will be corrected, and the address will appear therein, as follows:

STRATEGIC ARMS REDUCTION TALKS

Mr. COHEN. Mr. President, 8 months ago, Senator NUNN and I introduced a resolution calling for a mutual, guaranteed build down of the nuclear forces of the United States and the Soviet Union. Our aim was to forge a bipartisan consensus behind an approach which combined weapons modernization and arms reductions in a manner which would enhance stability. I made clear that the concept was not immutable and that I welcomed comment and criticism to assist us in refining it.

The response was gratifying. Forty-three of our colleagues in the Senate cosponsored the resolution, and a number made suggestions which helped in developing the build down concept. Congressmen ELLIOTT LEVITAS, JOHN MCCAIN, and JOHN PORTER, sponsored a build down measure in the House of Representatives which, in the course of a few days, received significant support in that body.

As the debate over the MX missile system heightened, the build down became part of a broader approach to weapons modernization and arms control. In the House of Representatives, Members such as Congressmen ALBERT GORE, LES ASPIN, and NORM DICKS continued to offer fresh and innovative ideas on force planning and arms control. In the wake of pressure from both congressional bodies and from Members on both sides of the aisle, the administration undertook to modify its START position, develop a build down proposal, move forward on a small, single warhead ICBM, and create a durable, bipartisan arms control panel.

During the summer, numerous meetings were held with administration officials to develop a meaningful build down proposal. This was a difficult process which, frankly, became mired at times in bureaucratic quicksand.

Last month, Senator NUNN, Senator PERCY, and I decided to make a final attempt at invigorating the process. We chose the medium of the Scowcroft Commission, which has been so helpful last spring in moving the administration toward a useful melding of arms control and weapons modernization. In a letter to General Scowcroft, we suggested a broad approach which incorporated the thinking and ideas of a number of Congressmen and Senators, military specialists, and the stated concerns of administration officials. We noted that:

If the Reagan Administration and the Congress can agree on a sensible strategic program and on a coordinated, reasonable approach towards arms control, we will demonstrate that we have the political cohesion and the long-term bipartisan commitment needed to maintain our strength and reduce the risk of nuclear war.

We outlined our approach in seven principles which offered the near-term benefits of the build down concept—immediate reductions as the price for modernization—and a longer term approach to resolving the major differences between the United States and the Soviet Union on strategic arms control. We recognized that to be negotiable, any proposal to the Soviets would have to offer meaningful restraints on strategic bombers, an area in which the two countries are likely to modernize significantly in the next decade. To deal with bomber forces equitably and effectively will require important negotiating breakthroughs.

The missile throw-weight question has been a major stumbling block in START. By proposing meaningful limits in the area where the United States enjoys a substantial and increasing advantage—the bomber force—we believed that the United States could extract reductions in the area where the Soviets hold a substantial lead—missile throw weight.

Senator NUNN, Senator PERCY, and I felt that the approach we suggested reflected, in addition to our own thinking, the ideas and views of congressional colleagues who we believed were on parallel tracks in their deadlings with the administration. To merge these tracks, we held a series of meetings with Congressmen GORE, ASPIN, and DICKS. What emerged was a uni-

his artistic talent and inspiring personal example of achievement.

FRIENDS: I am glad to be here in person for this most memorable occasion. I wish to thank the School Board members, Superintendent John Harris, Principal Dale Erickson, the parents, and the city of Sioux Falls for naming your new elementary school the Oscar Howe School. It is an honor I will always remember.

I have taught art to young people for about thirty-five years, and I always found my students to be interested and eager to learn. They usually wanted to stay longer in the classroom than they had to. They, in turn, were an inspiration to me.

Art is one subject in which everyone can participate. You don't have to be talented to enjoy art.

I am being honored today for something that gives me great personal pleasure and satisfaction. I hope that through my work I have contributed in a small way for a better understanding of two cultures.

Thank you,

OSCAR HOWE.●

AMERICA'S FUTURE IN OUTER SPACE

● MR. ARMSTRONG. Mr. President, it is becoming increasingly clear that America's future is out of this world.

The world's newest, and perhaps most important, frontier is outer space. Space systems have potentially enormous commercial potential, and critical consequences for our national security. Daniel Gouré, an expert on space systems, has an excellent article in the September issue of Defense & Diplomacy on the importance of space to America's future. I urge all my colleagues to read it carefully.

I ask that Mr. Gouré's article, entitled "Launching Space-Based Defense and Industry," be printed in the RECORD.

The article follows:

LAUNCHING SPACE-BASED DEFENSE AND INDUSTRY

(By Daniel Gouré)

The seven millenia of recorded history contains only a handful of events to which historians and philosophers can point with confidence, stating: "Here the course of human progress was irrevocably altered." Such events have involved the discovery of new lands, the development of scientific and technological breakthroughs, and the formulation of philosophic and social principles that affect man's ability to understand, to cope and to alter his world. While with reflection, the point at which such revolutions occurred can be accurately identified, the realization of the benefits and consequences of the attainment of these frontiers have often required years, even centuries, of exploration and exploitation. The 20th century has already witnessed two such changes: July 16, 1945, marked the beginning of the nuclear age with its uncertain benefits and potentially catastrophic consequences; and Oct. 4, 1957, brought man to the shores of his last remaining frontier—outer space.

The past quarter century has been marked by only the barest penetration and utilization of this vast new realm. While space "spectaculars" such as Sputnik, manned orbital flights, the moon landing, establishment of Skylab and the Apollo-Soyuz mission have captured the attention of the world, the practical benefits of man being in space have generally been restricted to or controlled by those few nations possessing the requisite technologies. Even in areas in which many receive benefits, such as long-distance communications, the role of space and its potentials are only dimly perceived by the millions who utilize this revolutionary capability.

And yet, the past 25 years have both demonstrated the military and civilian uses of space and created a base of human technological capital that appears to have self-sustaining growth potential. The decisions have already been made, or soon will be, that will expand and alter fundamentally the ways in which space can be exploited. The results of these changes would be awesome in their scope an consequences: global ballistic missile defense, permanent manned stations in space, bulk materials processing, private space transportation systems and direct broadcast communications. In addition, the relationship between government, the private sector and international organizations with respect to space is likely to change radically as space becomes accessible to nongovernment users.

THE OCEANS OF SPACE

Space has often been described in prose and poetry with oceanic imagery and metaphors. The simile of space and open waters grows more profound as science expands its search of the region above the atmosphere. Like oceans, there are currents in space: storms, winds, safe harbors, where the gravitational fields of earth, moon and sun are equal, and even "tides."

Also, spaceship and sailing ship have much in common. Both enable man to traverse the open expanses from shore-to-shore and require safe harbors for launching, resupply and refitting. They enhance the effectiveness of activities in other media, such as land-based communications and operate with unique sets of customary and written law.

The history of man's exploitation of the seas parallels efforts to exploit space. Earliest use of the seas, what we might call the *galley* period, reflected the role of the seas as an adjunct to land activities. The technology of the times limited open ocean operations. Galley fleets were tied to the shorelines. Moreover, galley fleets were essentially troop conveyers in wartime and not a means for controlling the seas. The standards for ship construction, naval artillery and seamanship were such as to force nations to apply land combat tactics to sea warfare.

The next period, that of *sail*, was marked by a dramatic change in both the technology and utilization of the seas. Changes in ship design, the use of sails, the development of iron cannon and improved navigation permitted extensive open-ocean operations. In addition, civilian use of the seas became equal or greater than that of the state. It should be remembered that the majority of ships sailing for England against the Spanish Armada were private vessels. Indeed, the concept of the privateer, exemplified by Drake's 'round-the-world feat (in which the crown shared the profits), became commonplace over the next three centuries. Massive fleets of privately owned vessels became the mainstay of regional economies, such as New England.

The last period of the seas, the *amphibious* stage, reflects not only the ability to operate in virtually identical ways on both land and sea, but also the extension of the capacity to remain at sea. Sea-based drilling platforms, nuclear-powered ships and seabed mining are examples of this. In addition, military forces are increasingly configured for control of the land from the sea. The development of a military service whose primary function is landward operations from the sea and the deployment of land-attack aircraft, ballistic and cruise missiles is evidence of the growing impact of the sea on land warfare.

Rather than a space being an adjunct to activities on the ground, it is beginning to take on a range of independent functions. Soon extensive operations in space, or between points in space, may be possible. Operations of the U.S. Space Transportation Systems (STS), or the space shuttle, and of the Soviet Soyuz and Salyut space station are becoming routine. Yet, they signify an ability to operate in and through near earth space on a continuous basis. In addition, the civil sector in space appears to be at the point of acquiring an independent position, free from the controls of limitations of national government. As a result of these changes, control of space may be a critical military requirement, as necessary to national security as sea control has been over the past two centuries.

SPACE AS A MILITARY THEATER

The United States, its allies and the Soviet Union are now critically dependent on space for the performance of a large number of national security-related functions. Space-based sensor systems provide early warning of ballistic missile attacks. The United States maintains the Defense Satellite Communications System (DSCS), the Fleet and Air Force Satellite Communications Systems (FLTSATCOM and AFSATCOM, respectively), the NATO Communications Satellite System and Satellite Data System (SDS), all intended to provide global strategic and tactical communications. The Soviet Molniya system provides Moscow with a similar capability. Both the United States and Soviet Union deploy satellite-based sensors for the purposes of surveillance, reconnaissance and targeting. Such systems employ a wide variety of sensing systems including photographic, infrared, radar and electromagnetic. While the United States is believed to be ahead in high-resolution photographic and image-sensing systems, the Soviet Union possesses several unique systems, in particular their Radar and Electronic Oceans Surveillance systems (ROARSAT and EORSAT). In addition, there are both meteorological and navigational systems that provide information necessary for accurate strategic targeting and for the operation of conventional and naval forces. The U.S. NAVSTAR Global Positioning System, based on a planned constellation of 24 satellites (eight are now deployed), will provide accurate time-of-arrival for position location anywhere on earth to within 30 meters of the target.

Satellite surveillance systems are vital to the maintenance of the superpower balance, the verification of arms control agreements and to early warning of nuclear proliferation. In 1978, then President Jimmy Carter confirmed what was already common knowledge, that "national technical means of verification" central to enforcement of the strategic arms control agreements depended heavily on satellite systems. Indeed, these "spies in the sky" have been essential in maintaining global peace. Their ability to provide access to otherwise inaccessible parts of the world has provided sufficient confidence regarding the state of military preparedness by potential adversaries to permit the United States, the USSR and others to adjust their own military plans accordingly. In the absence of such systems, it is possible that fears of "missile gap" would

have resulted in an unrestrained arms race and even war.

Currently, though, there are no weapons in space. The 1967 U.S. Outer Space Treaty bans all nuclear weapons in space, on the moon and on other celestial bodies. It does not, however, prohibit the passage of nuclear-armed missiles through space (a rather pointed oversight). Nor does it prohibit directly the deployment of ground-based antisatellite weapons systems such as that already possessed by the USSR and under development by the United States. The 1972 Antiballistic Missile Treaty between the USSR and the United States prohibits also the deployment of antiballistic missile (ABM) systems or their components (radars, missiles or launchers) in space. The United Nations has proclaimed space to be a "zone of peace." Nevertheless, this zone is increasingly indispensable to terrestrial military planning and force posturing. As such, it is potentially an arena for military conflict.

Space-based systems have for many years served as a force multiplier, enhancing the effectiveness of more conventional military forces. However, it is the potential for the deployment of active, as distinct from the current passive, systems in space that would produce a radical change in the role of space in military planning. Currently, the Soviet Union possesses the only operational antisatellite (ASAT) capability. The Soviet system consists of a large, conventionally or nuclear-armed satellite launched by a version of the SS-9 ICBM into a co-orbital intercept with the target satellite. The present generation Soviet system is effective only against satellites in low-earth orbit (1,000 miles), although use of a larger booster could allow the system, particularly if armed with a nuclear warhead, to attack U.S. communications and early warning systems at geosynchronous orbit (22,500 miles).

The U.S. response to the threat to its satellites by an operational Soviet ASAT has taken several forms, The review of the problem by the Carter administration resulted in the formulation of a presidential directive (PD)-37, which gave three objectives for U.S. space policy: (1) enhance the survivability of existing and planned space systems; (2) initiate bilateral discussions with the USSR on limiting ASAT weapons, and (3) in the absence of an ASAT arms control agreement, develop a U.S. ASAT capability.

The United States has taken a number of steps to improve the survivability of its satellite systems. It has announced an $18 billion satellite survivability program. Some systems, such as defense communications satellites, have "silent spares" already in orbit, that can be utilized to replace operational systems. Other avenues of protection include the development of a rapid reconstitution capability, hardening satellites against shock or nuclear effects and enhanced ability to maneuver out of harm's way. In addition, the United States is currently developing a comprehensive threat management and surveillance system to warn of attack on U.S. satellites.

In addition, the United States has sought to create a countervailing threat to the Soviet ASAT. The U.S. ASAT system under development consists of a miniature homing vehicle (MHV) mounted on a two-stage rocket and carried on an F-15 or similar aircraft. Although the U.S. system could not reach the altitudes of larger Soviet rockets, its flexible launch mode would permit its use against low-orbit satellites from virtually any spot on the globe.

The early generation ASAT systems are but the forerunners of an array of potential support and active military capabilities in space. Advanced infrared technology and mosaic array sensors may provide the basis for detection of both ballistic and air-breathing threats from space. One such system cuurently being tested under the name Teal Ruby, may serve as the space-based sensor component of a large area air defense capability. Advanced concepts in ballistic missile defense (BMD) include use of a mosaic array sensor overlay that, when launched into the path of an incoming ballistic missile attack, discriminates targets for a ground-based antiballistic missile defense.

Even more revolutionary is the prospect of placing defenses against ballistic missiles, anitsatellite weapons and even aircraft, in space. Space presents some unique advantages for the placement of strategic defenses. From space, a defensive system could, in theory, intercept ballistic missiles while they were in the boost phase, prior to te separation of the warheads from the missile itself. Attacking ballistic missiles in their boost phase would simplify the defensive problem and create an advantageous trade-off for the defender. Space is also the best region for defending satellites; only be co-orbiting defensive satellites (D-SAT's) can the defender insure global protection against hostile ASAT's.

A wide range of technologies is currently being investigated for use in a space-based defense. Some involve the use of near-term technology in the form of ballistic missiles armed with miniature homing vehicles, pellet charges or even immense weighted "umbrellas," all intended to be launched on warning of attack and designed to use the kinetic energy from direct impact with the target to destroy it. One proposal receiving renewed high level attention is the High Frontier concept. This would use existing technologies to deploy a fleet of satellites armed with multiple homing rockets. This system is distinct from most proposals in that it combines available technology with space-basing. Some reports in the West attribute a space-based battle station capability to the Soviet Union.

Potentially far more promising, however, is the deployment of directed energy weapons—lasers, charged-particle beams and X-rays. Space is the perfect medium for the use of such weapons. Additionally, systems in space occupy a geographically advantageous position with respect to the curvature of the earth. A study by a congressional committee noted: "The potential of high-energy laser technology for altering the strategic balance between the United States and the USSR is presently unique." Confirming this view, a report by the General Accounting Office recommended that the Department of Defense speed up the development and deployment of "a constellation of laser battle stations in space" intended to blunt a Soviet strategic attack. Orbiting in space, a directed energy BMD system could blunt the cutting edge of a Soviet attack as well as defened U.S. satellites from Soviet ASAT's.

The importance of control of space (in the manner in which navies of the past exerted sea control) as a doctrinal verity for the end of the 20th century was brought into sharp focus by President Ronald Reagan's March 23, 1983, "Star Wars" speech. The revolutionary essence of the president's statement lay not with his suggestion that advancements in ballistic missile defense might enable a defender to repel successfully a ballistic missile attack, but in his affirmative of the necessity "to break out of a future that relies solely upon offensive retaliation for our security." The core of the president's vision was expressed rhetorically: "What if free people could live secure in the knowledge that their security did not rest upon the threat of instant U.S. retaliation to deter a Soviet attack; that we could intercept and destroy strategic ballistic missiles before they could reach our own soil or that of our allies?"

The president's remarks suggested to many the creation of a ballistic missile defense system in space, perhaps utilizing one or more forms of directed energy. Two studies commissioned by the National Security Council are currently under way to examine all aspects of the issue of enhanced strategic defense. As the president noted, the obstacles to implementation of such a plan are enormous. The deployment of a ballistic missile defense satellite architecture involving dozens, possibly hundreds, of satellites is a feat that has never been accomplished. Merely procuring and launching this vast number of satellites will be an extraordinarily costly and complex task. Estimates of the cost of such a system go as high as $300 billion, with the likely figure in the range of $50 billion to $100 billion. Additionally, directed energy weapons require extremely high pointing accuracy, exact target trackers and very high power output to enable such a weapon to be used against ballistic missiles. Such technologies are only in the development stage. Currently, the U.S. government is spending almost $500 million on development of directed energy weapons. If congressional and defense enthusiasts have their way, this number will soon climb to several billion dollars.

The awesome potential of these new offensive and defensive technologies has resulted in a radical readjustment of military doctrine and strategy with respect to space-based systems. In September, 1982, the USAF created Space Command to exercise consolidated control over the vast array of air force space programs. Space Command would be the logical institution to control active U.S. military space systems. Much as the development of the Strategic Air Command heralded a fundamental shift in U.S. strategy and doctrine, so too, the advent of Space Command suggests a deliberate effort to coordinate and control virtually all aspects of U.S. operations in space.

The increasing dependence of terrestrial military forces on space-based systems for targeting, reconnaissance, navigation and communication, as well as the potential deployment of ballistic and air defenses in space, underscores the importance of space as an arena of future conflict and as perhaps the most important region in a future military conflict. Operations in space have and will continue to expand and grow in importance in their own right. To insure the effective operation of terrestrial forces, to defend against hostile attack and to maintain adequate surveillance and reconnaissance of hostile forces, the United States, its allies and even the Soviet Union must have the capacity to operate independently in space and, if necessary sweep the skies of hostile forces.

SPACE-ORIENTED COMMERCE

Were space to remain an area reserved primarily for military activities and if only a few nations were able to play, the potential for conflict and competition might resolve itself with relative simplicity. However, the era when only the superpowers were able to operate in space has ended. State domination of activities in space will also come to an end. The future of commercial and civil activities in space is likely to be exceedingly complex and competitive as new players, governments, international organizations and corporations begin their move into space. Changes in the customary uses of space carry with them a host of unresolved questions with respect to national sovereign-

ty in space, the legal regime and protection of nationals in space, access rights and police powers.

Civil space systems are of growing importance in a number of fields. Space-based communications has demonstrated the greatest utility and profitability. A single communications satellite, while costing perhaps $60 million to build and another $40 million to launch and operate, will return projected revenues of up to $700 million over its useful lifetime. Currently all revenues from satellite-borne communications exceed $1 billion. This is expected to rise to $10 billion by 1990. Space is also extremely useful in the areas of weather forecasting, remote sensing, global navigation and, of course, scientific experimentation.

Civil activities in space are marked by an almost explosive horizontal and vertical growth in space-related capabilities. However, proliferation of space capabilities has been most marked in the area of satellite construction. Among the operators of satellite communications systems are France, Canada, Japan, Australia, India, Indonesia, The European Space Agency (ESA), Intelsat and the Satellite Communications Organization (ARABSAT). While most rely heavily on U.S. technology, ESA, France and Japan have began domestic design and production of satellite systems. Increasingly, these countries are competing with the United States on frontiers of space technology. The planned Spacelab, the International Solar-Polar Mission and the Hailey's Comet flyby are European-dominated efforts.

More formidable than completition in satellite design and construction is the emergency of international and civil sector competition in space launch service. First of these has been the ESA/Arianspace "Ariane," able to life between 5,000 and 6,000 pounds of payload to low-earth orbit. Capitalizing on delays and cost growth in the planned U.S. space shuttle program, Arianspace has undertaken an aggressive marketing campaign to win customers away from U.S. launch-services. Arianspace has provided preferential financial terms, including partial payment of launch fees until operators can recoup costs from satellite operations, which NASA has been unable to match. To date, U.S. corporation such as Western Union, GTE and Southern Pacific Communications Corp, have chosen the convenience and lower cost of Ariane over the shuttle or the remaining U.S. expendable rocket, the *Delta*.

Additional competition is closing in on U.S. dominance of the launch market. The Japanese National Space Development Agency (NASDA) has developed two launch vehicles based on U.S. technology that can life medium payloads into orbit. The Soviet Union has recently offered its Proton satellite launch system as the vehicle for the delivery of the International Maritime Satellite Organization's (Inmarsat) second generation communications satellite. Both Arianspace and NASDA are believed to be developing even larger launch vehicles to life heavier payloads or to reach geosynchronous orbit.

National space organizations are only one source of competition. A growing number of private companies are seeking entry into the launch market. Already one private corporation, Space Services, Inc., has successfully launched a test booster. Another, Space Transportation Inc., is pressing for private financing and control of a fifth shuttle orbiter. Martin Marietta and Federal Express have formed a joint venture to market the Tital III booster, long the workhorse of NASA's launch program, as the vehicle for Intelsat's new generation of communications satellites. McDonnell Douglas and General Dynamics are exploring the possibilities of selling their Delta/Centaur systems, respectively, to private customers. NASA plans to select one commercial operation to use each of the expendable systems. Launches would take place form Cape Canaveral or Vandenberg Air Forde Base.

The growth in potential competitors for both satellites and launch services is paralleled by a progressive uncertainty and lack of direction in the U.S. space program. The failure of the shuttle to reach commercial status with predicted rapidity and low cost, the cancellation of major experimental and exploration programs and a lack of funds has placed the U.S. program in a temporary limbo. One specific example of the uncertainty in the U.S. program was the decision to provide NASA with expendable launch vehicles, which were to be phased out to private operators when the shuttle reached operational status. Another has been the on-again/off-again effort to sell U.S. weather and Landsat resources satellites to the private sector. The Congressional Office of Technology Assessment has warned that a lack of workable long-range goals, insufficient funding and poor government-private sector relations might leave the United States vulnerable to foreign competition.

Where is the U.S. space program to go? What is the future for commercial activities in space? Not surprisingly, the answers to these two questions are related. For the United States, the objective of the space program is a permanent orbiting space station. Many expected President Reagan to articulate this objective in his July 4, 1982, speech welcoming home the Space Shuttle *Columbia*. Increased pressure from Congress, the scientific community and the Soviet Union, which appears to be on the threshold of a workable manned station is likely to require an executive decision, perhaps even by the end of 1983.

Moscow has repeatedly stated its objective for a large permanent space station by 1985. Such an event could have the international impact of another Sputnik or moon landing. At this point the United States, without clearly recognizing the situation, is in a race with the Soviet Union.

If the concept of a space station is to succeed, it must be justified not merely on the grounds of scientific experimentation or national security but as the basis for the further commercialization of space. Space, due to its freedom from gravitational stresses, relatively clean environment and access to high energy radiation, is an ideal environment for a wide range of speciality industrial processes. The fields of materials processing, including speciality alloys, growth of special semiconductor and crystalline materials and separation of pharmaceuticals appears particularly attractive. A recent shuttle-based experiment designed by McDonnell Douglas demonstrated a 700-fold improvement in the ability to separate biological proteins. The costs of such activities are extremely high: Launch and recovery costs alone can amount to $5,000 per pound. However, the returns can be equally staggering. For example, advanced semiconductor materials such as gallium arsenide are worth up to $50,000 a pound. There are at least 23 biological pharmaceuticals virtually impossible to produce in quantity on earth that would sell for nearly $1 billion per pound. Container-free metals processing can produce a several orders-of-magnitude improvement in materials purity and value. NASA has identified nearly 100 companies interested in testing the potential for commercial activities in space. U.S. and foreign companies have already begun designing future space factories expected to be operational as early as 1985.

Additional near-term investment in space commerce includes expansion of existing satellite communications capabilities, enhanced remote sensing and geologic mapping and improved navigation. Currently, most communications satellites operate in a relatively narrow band of frequencies known as the C-band. Because of dispersal of signals, this requires a 4° separation between satellites at geosynchronous orbit severely limiting available slots. Movement to the higher Ku and Ka bands will allow smaller intervals between satellites, provide additional frequencies and establish more open slots. Increased demand for long-distance communications will also results in development of larger, multifunction platforms with on-board processing and switching capabilities. An important function of these improved systems will be in direct access to privately owned receiving dishes.

Also, the United States is about to deploy the new bandsat. However, improved remote sensing may soon be dominated by France with its Spot System and the Japanese Maritime Observation Satellite, both to be launched in 1985.

The practical requirements to support commercial activites in space are formidable. Consistently available, reliable transportation systems, responsive satellite serving (repair, replacement, resupply), reliable controls over automated systems, construction techniques and materials for large objects in space and adequate energy sources are some of the areas that need further development.

A situation in which the private sector takes an active role in space poses particular challenges and responsibilities for national governments, and particularly their defense establishments. At the same time, the willingness of private corporations to risk investing in space based capabilities will be predicated on their belief that those investments will be relatively safe from legal or physical challenges. Both the private and governmental sectors will require close and continual interaction. Eventually, civil space activities could necessitate a broadening of governmental responsibilities in the areas of physical security, safety, licensing and operating regulations and patent protection.

To operate efficiently, commercial activities require security. The nation permitting civilian activities in space must be prepared to go into space to provide the requisite security and rule of law. Thus, expansion of commercial activities into new terrain, or on the high seas, was followed by the planting of the flag and incorporation of those new territories into the legal and security structure of the state. This marked the age of sail; so too, will it mark the coming era in space.

CONCLUSIONS

A bare quarter of a century ago, the first artificial satellite was placed in orbit; less than four years later, the first astronaut circled the earth, and, in a short 12 years, man landed on the moon. To suggest, therefore, that the next quarter of a century will see permanent manned stations in space, automated factories and laboratories, and a space command operating a global network of antiballistic missile battle stations, cannot be discounted as farfetched, nor can the consequences for the global economy and strategic stability be overstated.

At issue is what role the United States and other industrialized nations will play in exploiting the unique economic and military opportunities provided by activities in space. If the Untied States is to meet the military challenges posed by the Soviet space program and the commercial challenges pre-

SODBUSTING IN MONTANA: A 1980'S DUST BOWL?

● Mr. ARMSTRONG. Mr. President, the current issue of Montana Outdoors, published by the Montana Department of Fish, Wildlife and Parks, contains one of the best articles I have seen about the problem of sodbusting in general, and in Montana in particular.

The problem of conversion of fragile grasslands into croplands has become so serious that many writers are beginning to openly discuss the prospects of a dust bowl throughout the West like that which ravaged our land and impoverished so many 50 years ago.

The article, by Ken Walcheck, is very well written and well researched, and I think every Senator should read this who is concerned about this problem. It mentions S. 663, my bill which would put an end to Government subsidies for the sodbusters. The bill is scheduled to be marked up in the Agriculture Committee this week, and I hope the committee will report the measure to the full Senate so we can act on it before the end of the session.

In the meantime, I ask that the article be printed in the RECORD and encourage all my colleagues to read it.

The article follows:

SODBUSTING IN MONTANA: A 1980's DUST BOWL?

(By Ken Walcheck)

April 18, 1981: Angela, Montana. The warm wind grew stronger and brisker. Little by little, the sky was dardened by choking clouds of billowing dust. The wind raced over the plowed fields, loosened the topsoil, and lifted the finer particles into the air. As the day advanced, the wind increased, raising dirty plumes high above the fields. There was a biting sting in the air and the wheat stubble shook violently as the wind cried and whimpered over the parched ground. An enormous wall of dirt blotted out the sun's dim red circle and halted traffic on State Highway 22 in the Angela area, 28 miles northwest of Miles City.

"Angela blew by last night," was the first sentence in a letter to the editor of the Miles City Star the day after the storm. Written by a downwind resident of Terry, the letter expressed indignation and dismay over the loss of precious topsoil from the Angela plowout, a 20,000-acre chunk of fragile, prairie grassland that had been plowed in 1976 and 1977, and then block farmed.

It seems to take a disaster of this sort to make people realize there's a problem on their doorstep. We should have learned an unforgettable lesson from the "dirty '30s, but the human memory is sometimes woefully short. There are parallels to what happened during those Dust Bowl years and what is now happening in some parts of the country.

From 1926 to 1931, there was hardly enough rain to settle the dust. During the summer of '31, farmers gazed into cloudless skies where a relentless sun beat down from dawn till sunset. Topsoil turned to powder, and grain that mustered enough moisture to germinate turned to chaff before it developed a head. In the spring of '34 and again in '35, blast-furnace winds of gale strength sent soil flying skyward in black clouds that grew thicker every day. During May of 1934, a major wind storm battered the plains. That storm was later described by Hugh H. Bennett, first director of the Soil Conservation Service (SCS), as a turning point in arousing public awareness of the problem:

"This particular dust storm blotted out the sun over the nation's capital, drove grit between the teeth of New Yorkers, and scattered dust on the decks of ships 200 miles out to sea. I suspect that when people along the seaboard of the eastern United States began to taste fresh soil from the plains 2,000 miles away, many of them realized for the first time that somewhere something had gone wrong with the land. . . . it took that storm to awaken the nation as a whole to some realization of the menace of erosion."

There is a postscript to the story of the Dust Bowl worth remembering: Land cannot be abused without consequence.

In 1980, former Secretary of Agriculture Bob Bergland estimated that more than 10% of the land under cultivation in the United States was eroding at unacceptably high levels—more than 14 tons of soil per acre per year. Nationwide, we annually lose about 5 billion tons of topsoil to erosion, according to the SCS. Only 2 billion tons were lost in 1934—the worst year of the Dust Bowl. In Montana, about 7% of the cropland undergoes an annual erosion rate of more than 14 tons of soil per acre per year. The SCS erosion report for March through June of 1983 estimates that 360,000 acres of Montana's croplands were damaged from wind erosion. Blaine County led the state with over 84,500 acres damaged.

"How can this be possible?" You might ask, especially when Americans vowed "Never again!" after the Dust Bowl era. What about conservation programs? And how about sophisticated agricultural systems, farm policies, and other conservation incentive programs? Concerned citizens, from congressmen to farmers, are now asking these questions. "Part of the answer," wrote R. Neil Sampson in his book, "Farmland or Wasteland," "is that conservation programs had been working, but on a very low level of funding and activity. While the task of protecting farmland had been growing more and more difficult, the amount of money directed toward the task had actually been shrinking in purchasing power. . . . The 'farm problem' facing national policy makers rested not on the fact that U.S. agriculture didn't work, but that it worked too well."

The "too well" part of the equation focused on: increasingly better farm technologies, intensified farming, an expanding global market, government subsidy payments, and favorable weather patterns. All of these factors—and others—combined to lure some people into maximum output for quick profits, conservation efforts be damned. Runaway inflation, surplus crop yields, international political changes, petroleum supply disruptions, and falling commodity prices further complicate the agriculture-erosion equation.

This past May, I flew over the Crow Rock plowout north of Miles City that will be block farmed for winter wheat. Looking at more than 70 square miles of plowed turf from the air is mind boggling. Your eyes ricochet east, west, north, south. As you spot the huge four-wheel-drive tractors kicking up dust, you can better appreciate how new farm technologies—all designed to substitute capital, petroleum, fertilizers, or technology for labor—have made many conservation practices obsolete, without providing new techniques to replace the old.

Despite what is known about the farm problem, the plowing of fragile grasslands—usually in tracts of several thousand acres—in Montana and elsewhere continues. In Montana, 749,822 acres of grassland were converted to non-irrigated cropland between 1977 and 1982, according to the "Report of the State Department of Revenue" which is furnished to the governor and Legislature every two years. Currently, the state has about 21 million acres of unplowed, highly erodible marginal grassland. Nobody knows how much of this will be up for grabs in the future. Also, no one knows how many non-family corporations are operating in the state or how much non-irrigated cropland they control. One such corporation has reportedly plowed out more than 150,000 acres of rangeland in the state.

Recent large-scale sodbusting of fragile grasslands in Montana includes the 50,000-acre Crow Rock plowout (Garfield and Prairie counties and the 60,000-acre (in progress) Winnett plowout in Petroleum County. Although soil capability classes (the SCS groups soils into eight capability classes, the risks of soil damage or the limitations in use becoming greater from Class 1 to Class 8) have not been completely mapped for the two plowouts, most of the land is in Class 4 and sizable portions are in Classes 6 and 7, which the SCS considers as having severe limitations that make them unsuitable for cultivation. The majority of the state's cropland is considered Class 3—soil that is erodible, but still farmable. Conservation methods, such as strip cropping and stubble management, must be used on soil.

"Soils in Class 4 have severe limitations that require intensive management," says Dennis Loreth, Forsyth-based district conservationist for the SCS. Loreth is concerned with soil erosion problems on some of the large block-farmed plowouts in which the operators use continuous cropping instead of strip cropping or other semiarid conservation practices which grew out of the sad experiences of the Dust Bowl era.

"One major wind storm battering a large block-farming unit, such as the 31 square-mile Angela unit, can remove as much as 15 tons of topsoil an acre or more," stresses Loreth. The 1981 dust storm which introduced this article attests to the validity of Loreth's statement. In Kiowa County, Colorado, an estimated 150 tons of soil per acre were lost in one huge dust storm in February 1977.

So why does sodbusting continue? If thousands of farming operations are folding each year because of inflation, depressed markets, high operating costs, and high interest rates, what are the incentives for continuing to break more land?

Part of the answer lies in the difference between grassland and cropland prices. In the semiarid West, dryland cropland is priced at about double what the same land is worth with only grass for cattle. The monetary difference is a major incentive for an investor to increase the land's value by converting it to cropland, even though a continuous cropping system may produce marginal (or poorer) yields.

The investor or corporation buying, plowing, and reselling the land also takes advantage of U.S. tax laws and tax shelters. Costs of breaking and seeding the land are tax deductible. While the value of the land may double just because it has grown a couple of grain crops, the increase is "capital gain," and only 40% of the profit is taxable.

Federal subsidy programs also encourage sodbusting. According to the July 25, 1983 issue of Newsweek, ". . . government subsidies to farmers will explode to $21 billion this year. Even more amazing is that those subsidies will just about equal the total earnings of American farmers this year. . . ." Some people believe that government price support programs provide a big incentive to sodbusters and are instrumen-

19 SEP 1983

Resolutions Would Express Opposition to Satellite Sale

By Philip J. Hilts
Washington Post Staff Writer

Congressional resolutions intended to thwart President Reagan's controversial plan to sell the nation's weather satellites to the private sector are expected to be introduced this week.

Identical resolutions are to be introduced by five Republicans in the Senate and eight Democrats in the House, according to congressional staff members, who predict quick and overwhelming passage in both chambers.

The resolutions declare that it is the sense of the Congress that "it is not appropriate at this time" to turn weather satellites over to private enterprise.

The resolutions would not have the force of law or prevent the sale of satellites. However, administration officials and members of Congress said that it probably would be illegal to sell the satellites without explicit congressional approval.

"This will put everyone on notice that the Congress has no intention of approving" the sale of weather satellites, a key congressional aide said.

The administration is said to be within weeks of asking companies to bid on the satellites. But Ray Kammer, the Commerce Department official handling the sale, predicted that passage of the resolutions would have a cooling effect" on bidders' enthusiasm. "It certainly does not help further my job," he said.

About 10 corporations have expressed interest in acquiring the satellites. One of the firms is the Communications Satellite Corp. (Comsat), which several years ago first suggested to the Commerce Department that the satellites be sold.

Kammer said it is difficult to know how many companies will become serious bidders because they "already know there are a lot of congressmen that don't like the idea" of selling weather satellites.

The proposed sale has generated strong opposition since being announced March 8 by Reagan. After hearings, Congress passed a joint resolution declaring that no sale should take place without congressional approval of its terms.

In April, Commerce Deputy Secretary Guy W. Fiske, was told to recuse himself from any further role in the sale because he had discussed job offers with Comsat at the same time he was guiding that company's proposal through Commerce.

The department's general counsel, Sherman E. Unger, wrote in a memo that Fiske's actions "created the appearance of . . . using public office for private gain . . . ."

Fiske has resigned from Commerce. He is being investigated by the Justice Department for possible criminal conflict of interest. He has denied any impropriety.

The administration has gone ahead with its plan to sell weather, land and planned ocean satellites.

Congressional opposition to the weather-satellite sale has been led by Rep. James H. Scheuer (D-N.Y.). Scheuer said he has found "solid, bipartisan support for this legislation. I am confident that quick action will be taken in the Senate, and the House will concur.

"The only question will be how far the administration is willing to go in continuing to support a transfer proposal that is transparently not in the interests of the American people and simply designed to benefit one large, profit-making corporation."

The resolutions declare that the government traditionally has collected and distributed to the public information about the weather, and has freely exchanged this information with other countries. The resolutions contend that selling weather satellites would create a "government-subsidized monopoly and jeopardize the cost efficiency and reliability of data gathered by civil meteorological satellites."