

WHY THE U.S. NEEDS SDI

by Kim R. Holmes

Why do we need SDI? Why do we need defenses at all against Soviet ballistic missiles? Some people think that in the nuclear age the ballistic missile is the ultimate weapon against which no adequate defense can be constructed. These people, mostly critics of SDI, believe that an offense-dominant nuclear strategy--as opposed to a defensive one--has been enshrined forever as the only way to ensure deterrence in the nuclear age.

But are the critics of SDI right in thinking that an offensive strategy is the only way to go in the nuclear age? I would ask the critics to think again. I would ask them to consider an historical lesson from another time, when military strategists and tacticians thought that the offense was supreme and that no adequate defense could be built against a new, revolutionary offensive weapon.

I am thinking of blitzkrieg--the supreme offensive strategy of World War II. Hitler's blitzkrieg was responsible for the staggering German military victories in Poland, France, and in the early days of the war, in Russia as well. From 1939 to 1941 Hitler's tank armies roamed practically at will across Europe. They simply had gone around the Maginot line in France. They crushed superior numbered forces in Poland and Russia with daring thrusts and great encircling movements. The days of static defenses seemed to be over. In land and air warfare, the strategy and tactics of the offensive reigned supreme. It seemed that no one would ever again advise a strategy based on defense.

Defense Triumphs. But did the offense reign supreme for the rest of World War II? Of course not. I remind you of a famous tank battle on the Eastern Front in 1943, a great tank battle which not only turned the tide of the war in the East, but demonstrated once and for all the limits both of the tank and the offense-dominant tactics of blitzkrieg.

I am thinking of the Battle of Kursk, which took place on July 5, 1943. Hitler had just been defeated at Stalingrad. He wanted to regain the strategic initiative. So he launched a major offensive in the area of Kursk--called Citadel--comprising fifty divisions, 900,000 men, 10,000 guns, 2,700 tanks, and 2,000 aircraft. He threw this force against a heavily defended bulge in the Soviet line--one fortified by anti-tank barriers, belts of wire to stop infantry, dragon-teeth anti-tank barriers, cleared fields of fire for easier shooting at tanks, and carefully prepared traps for destroying incoming tanks as they exposed themselves to heavy artillery fire.

On the first day of the attack, the Germans lost 350 tanks and 10,000 men. After that the attack slowed. In a matter of days they began to withdraw. The Soviet tank defenses were simply too great. Soon the Red Army was on the

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counteroffensive. When the battle was over, the Germans had lost a half a million men killed and wounded. From this time on, the Red Army retained the strategic initiative all the way to their victory in Berlin.

Momentum Building for SDI. Now clearly the ballistic missile is a more formidable weapon than the tank. And more sophisticated technology is needed to defend against the ballistic missile than against the tank. But the point is this: the offensive blitzkrieg strategy based on a new weapon, the tank, proved to be limited, and eventually unsuccessful, against a determined and well thought out strategy of defense. If effective defense technologies are available, and if the weapons integration, tactics and strategy are right, it will be no different for the ballistic missile and the exclusively offensive nuclear strategy of mutual assured destruction.

It is important to realize that SDI did not come out of nowhere. Although Ronald Reagan's famous March 23, 1983, speech announcing SDI seemed to take many people by surprise, momentum for strategic defense had been building for quite some time for the following reasons:

1) **Arms control—that is, the ABM, SALT I, and SALT II Treaties**--had not stopped the arms race. The SALT treaties merely put limits on already high levels of strategic arms, permitting the Soviet Union to deploy eight new types of ballistic missiles, 4,000 additional ballistic missile warheads, and a new type strategic bomber, all since the time SALT I was signed in 1972.

2) **The Soviet Union failed to adopt** our strategic thinking about nuclear war. They never accepted our doctrine of MAD, which said that the threat of mutual nuclear suicide will deter both sides from starting a nuclear war. Therefore they never really accepted the basic idea of arms control. They never believed, as American supporters of MAD did, that adding more and more nuclear weapons is not necessary and will, to paraphrase Winston Churchill, merely "make the rubble bounce." Instead they continued to build. As former Secretary of Defense Harold Brown once said, "When we build, they build. We don't build, they continue to build."

3) **The Soviets continued to work on** their own strategic defense program. While the U.S. dismantled its anti-ballistic missiles and strategic air defenses, Moscow continued to develop and deploy generations of anti-ballistic missiles, tracking radars, interceptor aircraft, and surface-to-air missiles dedicated to ballistic missile and air defense.

4) **The Soviets were caught cheating** on arms control agreements. Soviet violations of the ABM and SALT II Treaties cast doubt on whether arms control could be trusted to ensure the security of the United States.

5) **Technological changes in recent years** overturned the belief prevalent at the time of the signing of the ABM Treaty that effective strategic defenses were technically impossible. Progress in laser research, kinetic energy weapons, sensor technologies, fiber optics, and data processing offered the promise that a militarily adequate and cost-effective strategic defense system was possible.

But still the question remains: Why do we need SDI? We know how it came about. But do we really know why we need it?

I say we need SDI for the following reasons:

1) To counter the Soviet strategic defense program.

The Soviet Union has over 10,000 scientists and technicians working at a half dozen major research centers and development centers on strategic defense. In the past ten years the Soviets have spent around \$150 billion on strategic defense, or almost 15 times what the U.S. has spent. In 1984 the Pentagon claimed that Soviet spending on laser research was around three to five times greater than that of the U.S. On top of that, the Soviets have the only operational anti-ballistic missile system in the world, while the U.S. has none. And they have the most extensive air defense system in the world as well, while the U.S. has virtually no air defense system for the American continent.

What is Moscow getting from all of this strategic defense activity? The anti-ballistic missile system around Moscow is being modernized. The Soviets are deploying large phased-array tracking radars in a great arc across the country, which suggests that they are preparing for deployment of a nationwide strategic defense system. They have deployed surface-to-air missiles that could be upgraded to destroy American ballistic missile warheads. And they have hot production lines for missiles and radars that could pump out large numbers of anti-ballistic missile systems far faster than we could.

All this adds up to the fact that Moscow could build a nationwide anti-ballistic missile system--one based on ground-based systems--much faster than we could. Therefore we need SDI as a hedge against this possibility. We need to have mature ABM technologies developed and tested to prepare for the possibility that someday Moscow may say, "We no longer adhere to the ABM Treaty and are building an ABM system starting today." We need SDI so we are not caught completely off guard. For without some defenses of our own, our strategic nuclear forces would be impotent in the face of a Soviet nationwide strategic defense system, powerless to threaten the Soviets with the near certain nuclear devastation of their homeland upon which our current strategy of deterrence rests.

2) To restore deterrence.

The United States is losing the strategic nuclear arms race with the Soviet Union. Moscow is a generation ahead of the U.S. in deployed strategic missiles. They are deploying the mobile SS-25 while our new single-warhead mobile missile, the Midgetman, is still on the drawing board. They have a 3 to 1 advantage over us in the number of warheads capable of destroying missiles in their silos. They have at least a 4 to 1 advantage over us in the amount of nuclear destructive capability (i.e. throwweight, or the capability to deliver nuclear explosive power). And for every single U.S. missile silo, Moscow has five very accurate and powerful warheads capable of destroying those silos within thirty minutes after they are launched.

All of this gives the Soviet Union a first-strike capability--that is, the capability to hit us so hard with a first nuclear strike that retaliation becomes militarily meaningless. Why? Because if we retaliate with our nuclear forces we will only invite Soviet retaliations in kind, which will cost millions of American lives--and all for no purpose but revenge.

Therefore I say that our ability to deter the Soviets is eroding. We need to restore deterrence. And SDI can help us do that.

It can do it by making a first strike virtually impossible. If the Soviets cannot be certain that a first strike will succeed against a strategic defense shield over the U.S., then it makes no sense for them to try. Studies have shown that a strategic defense system that can knock down 90 percent of all Soviet warheads makes a first-strike strategy militarily meaningless. You deter an opponent by making the risk of failure higher than the possibility of gain. With an effective SDI, the possibility of gain is practically eliminated. Why would the Soviets launch a first strike against us if they were certain that only 10 percent of their weapons would get through? And on top of that, raise the possibility of our retaliating against them with our own nuclear forces. Does it make sense to launch World War III if the only outcome is a certain stalemate with millions of lives lost for absolutely nothing? Of course not. The point is that SDI denies the first strike as a viable military option.

SDI could do other things as well. Of course it will protect millions of lives in case deterrence fails. It will protect against an accidental nuclear launch by the Soviets or some other nuclear power. It will protect our national command and control centers so they can respond more effectively in case we are attacked.

But most important, it will reverse this terrible road we are heading down--a road in which we rely exclusively on offensive nuclear forces for deterrence. We need to introduce defenses into the deterrence game--a game that the Soviets are much better at than we are. With defenses we can increase our confidence in our deterrent posture. We can rest easier that no Soviet general will ever advise a Soviet leader in a crisis that more is to be gained from striking the Americans first with nuclear weapons than waiting for some other option to present itself.

3) To improve the prospects for arms control.

The primary aim of current Soviet arms control strategy is to kill SDI. The Soviets are most concerned about our ability to develop and deploy advanced military systems in space. They remember that they lost the race to the moon. They also know that our technology base is superior to theirs. What they most fear is that they will lose a race with us in advanced space-based military systems that could be used to intercept ballistic missiles, improve our surveillance, tracking, and battle-management capabilities for conventional forces on the ground, and build a research base from which new kinds of non-nuclear weapons could emerge that could very well revolutionize conventional warfare.

So long as Moscow thinks that it can kill SDI by holding out the prospects of huge cuts in offensive nuclear forces, no agreement should be reached. We tried

trading away defenses for limits on offensive forces with the ABM Treaty in 1972, but we still got a huge Soviet buildup in nuclear weapons. The Soviets will not reach an agreement cutting offensive forces so long as they think there is a chance that the U.S. Congress will kill or severely limit SDI. Only when Moscow is absolutely convinced that SDI will go ahead will they negotiate seriously on arms control. Their incentive will be to try to guide strategic defense deployments through the arms control process, and if they build strategic defenses of their own, to limit overall offensive force levels to make their own defenses more effective.

Thus rather than hindering arms control, as some critics think, SDI actually could be the only way to get arms control. Much tough negotiating would be required. But the current approach of waiting for U.S. concessions on SDI in exchange for Soviet concessions on offensive forces is not the way to go.

4) To keep our technological lead.

We need SDI to keep our technological lead over the Soviet Union. One of the things that makes America great is its technology. We use our advanced technology to offset the Soviet Union's greater numbers of tanks, soldiers, aircraft, and submarines. Every Air Force pilot knows the enormous confidence that the technical superiority of an F-15 or F-16 would give him in confronting a Soviet adversary. We need to translate this technical superiority into reality at the level of strategic or nuclear weapons. We need to harness technology and devise effective military strategy and tactics to reduce the threat of nuclear war.

Significant technical progress in the SDI program suggests that we can do this. Let me cite a few examples of the rapid advances made in strategic defense technologies since the SDI program began.

◆◆ Much progress has been made in kinetic-kill vehicle technology--that is, in small, self-guided rockets that can destroy a booster rocket or a warhead by crashing into it at high speed. The U.S. Army has demonstrated a number of successful direct impact homing intercepts of low radar cross-section targets at low altitude--this is the so-called Flexible Lightweight Agile Experiment, or FLAGE, which was conducted in 1986.

◆◆ Another experiment, dubbed Delta 180, took place on September 5, 1986. In this experiment a ground-launched rocket crashed into and destroyed an object in space. We now know more about how to track objects in space and to send rockets after them to destroy them with pinpoint accuracy.

◆◆ There have been advances of an order of magnitude in the brightness of lasers, or directed energy devices, every two or three years. Major achievements have been made in brightness for chemical lasers and in reaching high levels of energy efficiency in the free electron laser.

◆◆ The capital cost of laser power has been brought down from a few thousand dollars per watt to a few hundred dollars.

◆◆ For the first time we can perform real-time radar imaging of ballistic missiles, reentry vehicles, and penetration aids.

◆◆ Miniaturization and advances in optical sensor designs have meant rapid gains in surveillance technologies, which are crucial for detecting and tracking booster rockets and warheads for the defense system.

◆◆ Advances have been made in neutral particle beam technologies. These could be used to shoot at warheads and decoys in space, not to destroy them, but to nudge them, so to speak, so surveillance detectors can tell which is a real warhead and which is a decoy. This "interactive discrimination" mission is crucial if we want to have a highly effective strategic defense system that can intercept a barrage of warheads fired in a first strike on the U.S.

A New Era. What does all this progress add up to? We could begin deploying a strategic defense system consisting of ground-based missiles, space-based kinetic kill vehicles, and space-based sensors by the mid-1990s. The full system based on these technologies would cost less than \$150 billion from start to finish, and could take around 10 years. Keep in mind that one year's defense budget is around \$300 billion, or twice the cost of a strategic defense system. Also keep in mind that the total program cost for the Navy's F/A-18, the Air Force's C-17, F-15, and F-16 adds up to \$165 billion, which is about what a first-phase SDI system would cost. Is strategic defense worth the cost of these weapons? I think that it is.

Are we about to embark on a new era? The SDI program still could be terminated, or slowed down to the point of emasculating it. But I think, overall, that SDI is here to stay. The debate today is no longer so much over the technical feasibility of SDI as over when deployment will begin, how much it will cost, and what impact it will have on arms control and the strategic balance. We have come a long way since President Reagan's speech introducing SDI on March 23, 1983. We still have a long way to go. But we have a clearer idea of where this road is leading us, and how long it will take to get there. And most important, we know that the journey must begin.

