

Can Missile Defense Work?

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1.

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problem of discriminating decoys from warheads, and learned how difficult it is. Like others before me, I gradually also became influenced by a powerful argument against deploying any missile defense system: that in the conditions of the times it would simply induce the Soviets to increase their offensive intercontinental missile forces, leaving us worse off than before.

Despite such arguments, the Johnson administration came under powerful political pressure to go ahead with some sort of missile defense. In 1967 Defense Secretary Robert McNamara gave a remarkable speech in which he explained all the reasons against deploying a national missile defense, and

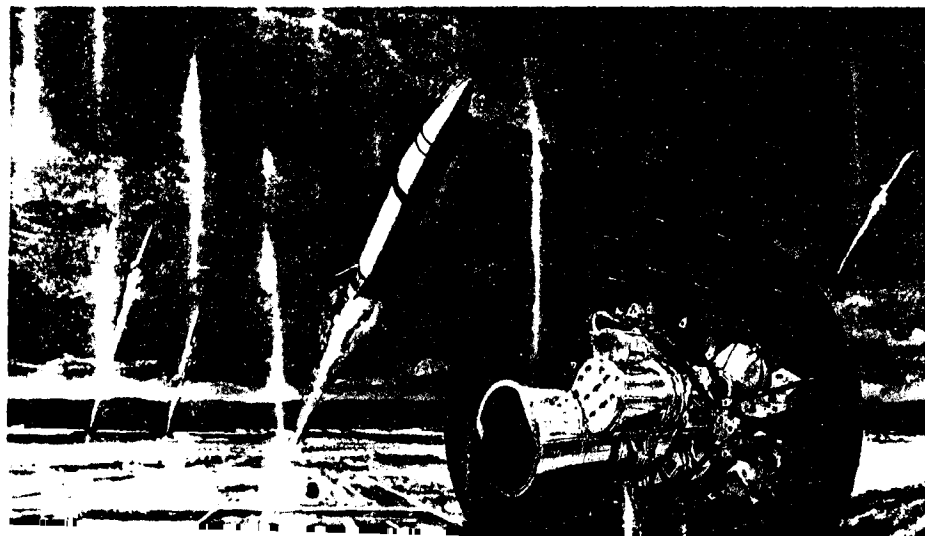
first step for the protection of our cities."² But in fact there was little technical difference between the Sentinel and Safeguard systems, except that Safeguard would have less effect on suburban real estate values.³

The Safeguard system was scotched by doubts about its effectiveness (especially concerning the vulnerability of its radars) and fears about its cost. In 1972 the Nixon administration and the Soviet Union signed the antiballistic missile (ABM) arms control treaty. It limited defenses against ballistic missiles to one hundred interceptors at each of two sites, later reduced by mutual agreement to one hundred inter-

offensive missiles, neither the Nixon administration nor any following administration maintained the ABM defense of the North Dakota missile field that was allowed under the treaty.

These matters remained until the Reagan administration. It is said that President Reagan was converted to missile defense on a visit to the continental defense headquarters at Cheyenne Mountain, when he was surprised to learn that the US had no ability to shoot down enemy missiles attacking our country. Be that as it may, in 1983 he announced plans for a Strategic Defense Initiative, intended to make nuclear weapons "impotent and obsolete."⁵ No longer would the system be limited to ground-based interceptor missiles; there were plans for more adventurous technologies, including satellites carrying X-ray lasers that could burn through the skin of an offensive missile booster in the first few minutes after it was launched. The imagined system soon came to be called Star Wars.

Eventually it became clear even to the enthusiasts of the Reagan administration that the X-ray lasers and other features of the Strategic Defense Initiative were beyond current technological capacities. The administration of George Bush Sr. replaced the Strategic Defense Initiative with a system of Global Protection Against Limited



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On December 13, 2001, President Bush announced that in six months the United States would withdraw from the 1972 ABM treaty, a treaty that limits the testing and prohibits the deployment of any national missile defense system by Russia or the US. The stated reason for this decision was that the United States needs to develop a system that would protect us from attack by intercontinental ballistic missiles launched by terrorists or by a so-called rogue state. The US has not yet withdrawn from the treaty; this is the formal six months' advance notice that is required by the treaty, and the President could still decide not to withdraw, but it is hard to imagine that anything could happen before June 2002 that would change his mind. The arguments by scientists and members of Congress that the US could continue an active program of developing and testing missile defense systems without abrogating the ABM treaty now seem moot. But the issue of whether to actually develop and deploy a national missile defense system is not moot, and will not be settled even after the treaty is abrogated. Requests for missile defense funding will come up again in Congress in mid-2002, and in subsequent years. We can anticipate a continuing national de-

seek to develop and deploy a national system of defense against intercontinental ballistic missiles.

Few of the arguments in this debate will be new. Indeed, it is hard to remember a time when the US has not been arguing about a national missile defense program.¹ Almost half a century ago, in the Eisenhower administration, the Army proposed to convert the old Nike anti-aircraft system to an antimissile system called Nike Zeus, which would send radar-guided nuclear-armed rockets to intercept Soviet warheads as they plunged through the atmosphere toward US cities. It had obvious failings: the nuclear blasts from successful interceptions could put our radars out of action, and the stock of interceptor missiles could be exhausted if the enemy missiles carried several light decoys along with each warhead.

In the Kennedy administration the Nike Zeus plan was upgraded to a two-tier project called Nike X. Long-range nuclear-armed missiles called Spartans would attempt to intercept Soviet missiles while they were still coasting above the earth's atmosphere; short-range Sprint missiles would then deal in the atmosphere with those warheads that had survived the Spartan attack. As a member of the JASON group of defense consultants, I worked in the 1960s on the

¹An excellent and evenhanded account of the Bush administration's missile defense plan as well as earlier missile defense proposals is given by Bradley Graham in *Hit to Kill: The New Battle over Shielding America from Missile Attack* (Public Affairs, 2001).



A graphic rendition by the Boeing Company of the launch of Ground Based Interceptor missiles. Each carries an Exo-atmospheric Kill Vehicle (inset), which separates from its booster rocket and is intended to locate, track, intercept, and destroy an incoming ballistic missile by a direct impact.

then concluded that the Johnson administration would go ahead anyway with a limited antimissile system, now to be called Sentinel, which would protect our cities only from attack either by accident or by what was then considered to be a rogue state, China.

To everyone's surprise, the most effective opposition to the Sentinel system did not come from experts who criticized its effectiveness or worried about arms control, but rather from citizens who simply did not want nuclear-armed defensive missiles in their neighborhoods. In response to this opposition, the Nixon administration moved the proposed Sprint missile sites away from cities and renamed the system Safeguard. Its declared purpose was now to defend our offensive missile silos instead of our cities against a missile attack. This was intended to defuse worries about strategic stability: protecting our missile silos would not make it necessary for the Soviets to increase their forces in order to maintain their ability to retaliate for a US first strike. And by protecting our own offensive missiles Safeguard would reduce any incentive that we might have to launch missiles in a crisis. As explained by Defense Secretary Melvin Laird, "The original Sentinel plan could be misinterpreted as... and in fact could have been... a

ceptors at one site. The site could be located to protect either the national capital or a field of offensive missiles. This would allow the Soviets to maintain their rather primitive Galosh missile defense system around Moscow, while the US could proceed with the declared aim of the Safeguard system and defend the intercontinental ballistic missile field in North Dakota.

To guard against surprises, the treaty also contained a clause that banned developing, testing, or deploying "ABM systems or components which are sea-based, air-based, space-based, or mobile land-based,"² a clause that later came under special attack by proponents of missile defense. Despite the proclaimed need for defense of our

²Statement before the Senate Armed Services Committee, March 19, 1969.

³For contemporary arguments against deploying the Safeguard system (including an article of mine), see *ABM: An Evaluation of the Decision to Deploy an Anti-ballistic Missile System*, edited by Abram Chayes and Jerome B. Wiesner (Harper and Row, 1969).

⁴The texts of various arms control treaties can be found in *Nuclear Arms Control: Background and Issues*, prepared by the Committee on International Security and Arms Control of the National Academy of Sciences (National Academy Press, 1985).

national security, the Clinton administration proceeded with the development of interceptor missiles, along with more conventional land- or sea-based missiles. This strategy also led nowhere, and was allowed to lapse in the Clinton administration.

Research and development continued at a more leisurely pace. In 1996 the Department of Defense announced a plan to continue further development of a scaled-down missile defense system for three years, after which a decision would be made whether or not to deploy the system within the following three years. The National Missile Defense System under study was now limited to a single kind of interceptor missile. Instead of a nuclear weapon it would carry an "exo-atmospheric kill vehicle" weighing about 120 pounds, which would destroy the enemy warhead above the earth's atmosphere by a direct hit rather than a nuclear blast. If it worked, it would truly be a bullet hitting a bullet.

Then, on August 31, 1998, North Korea surprised the world by launching a three-stage rocket that carried its third stage over one thousand miles before it broke up into pieces and fell into the Pacific Ocean. The missile did not fly far enough to reach any part of the US, and it could not have carried a nuclear warhead, but its launch put tremendous political pressure on the Clinton administration to do something soon about missile defense.

In July 1999 President Clinton signed

⁵On the Reagan Strategic Defense Initiative, see Frances Fitzgerald, *Way Out There in the Blue: Reagan, Star Wars and the End of the Cold War* (Simon and Schuster, 2000).