

F.A.S. PUBLIC INTEREST REPORT

Journal of the Federation of American Scientists (FAS)

Volume 49, No. 5

September/October 1996

Star Wars—Clever Politics in the Service of Bad Policy

by John Pike

A Democratic President on the eve of an election weighs sound policy and expedient politics. Fearful of Republican charges that he is "soft on defense," his defense department develops plans for deployment of an anti-missile system that are clever politics, and poor policy. Bill Clinton, who entered office as the new John Kennedy, is seeking to remain in office by taking a leaf from Lyndon Johnson's political playbook.

In 1967 the Johnson Administration proposed the deployment of the Sentinel anti-ballistic missile system. Ostensibly postured to defend America against a Chinese nuclear attack, the Sentinel ABM system was primarily effective against Republican campaign attacks. Nearly a decade of national debate and international negotiation were required to return from political expediency to sound policy.

Now, three decades later, the Clinton Administration has busied itself with plans for an anti-missile system to deflect Republican charges that it has been lax in "defending America." Once again, expedient politics threatens to subvert sound policy. Although much has changed in the world in the intervening time, the

ballistic missile defense (BMD) debate has proven remarkably enduring.

With the end of the Cold War, the United States emerged as the "Sole Remaining Superpower"—the only state capable of projecting conventional military power on a global scale. This pervasive American presence, initially established to counter the Soviet superpower, now confronts a handful of so-called "rogue states"—North Korea, Iran, Iraq and Libya. Each of these states has, with varying degrees of vigor, embarked on programs to acquire weapons of mass destruction and ballistic missile delivery systems which have the potential to deter the application of American conventional military might.

The "rogue state" threat is but a small fraction of that posed in the past by the Soviet Union, or even China, and is, indeed, more of a conjectured future condition than a present reality. But just as ballistic missile defense persistently failed to persuasively offset Soviet or Chinese nuclear weapons, there is little prospect that such systems will prove more useful in countering the "rogue state" menace, should it emerge.

The ballistic missile threat from the "rogue states" is currently quite modest, and by all indications will remain modest for some time to come. While these states possess hundreds of shorter range conventional missile such as the Scuds used in Desert Storm, their inventories of longer range missiles are negligible, and their nuclear weapons programs are either checkmated by international action or in disarray due to scarce resources. There is little prospect that any of these states will be able to launch nuclear-tipped missile attacks against North America for at least the next decade.

The current urgency attached to ballistic missile defense has everything to do with



PHOTO BY BOEING DEFENSE & SPACE GROUP, MILITARY AIRPLANES DIVISION

The US Air Force, along with Boeing, TRW and Lockheed Martin, has been exploring the concept of an accurate, aircraft-carried, high energy laser. It is one of many BMD research projects which have consumed over \$40 billion in taxpayers' money to no apparent result.

domestic American politics, and very little, if anything, to do with current or prospective ballistic missile threats. A diverse array of narrow political considerations has brought BMD to the forefront of the national security policy debate, despite the absence of any perceptible external stimuli for such a response. Totally apart from the question of whether deployment of a thin nation-wide anti-missile system would constitute an appropriate response to an intercontinental missile threat, it is clear that there is no such threat today, nor is one in prospect in the ponderable future.

Thus the debate over deployment of national missile defense may be safely adjourned for some years to come. Indeed, there is every reason to anticipate that this debate may be adjourned indefinitely. With the demise of the Soviet Union, the United States lost its most worthy adversary, and suitable replacements are singularly absent. The remaining potential regional "rogue state" adversaries—Iran, Iraq, Libya, and North Korea—are all threatening to follow the Soviet Union to the dust-heap of history.

While current and projected anti-missile systems may offer some relief from attacks by shorter range ballistic missiles, there is no prospect that they would provide the foolproof shield that would eliminate concerns about nuclear attacks on the American homeland. Though much has changed with the end of the Cold War, ballistic missile defense remains an expensive and unreliable counter to missile threats, even the minimal and largely hypothetical threats from the "rogue" states. Thus we can not safely ignore Ronald Reagan's counsel that "a nuclear war cannot be won and must never be fought."

Neither clear and present danger nor compellingly sweet technical innovation currently propel the debate over ballistic missile defense. Rather it is propelled by a series of narrow, expedient and self-interested calculations by a range of national political actors, each putting short-term political advantage over sound national policy. The damage wrought by such political expediency in the 1960s took nearly a decade to repair. It is to be hoped, though perhaps not anticipated, that this object lesson will enable sense to prevail over nonsense sooner rather than later.

The *FAS Public Interest Report* (USPS 188-100) is published bi-monthly at 307 Mass. Ave., NE, Washington, D.C. 20002. Annual subscription \$25/year. Copyright © 1996 by the Federation of American Scientists.

POSTMASTER: Send address changes to FAS, Public Interest Rep., 307 Massachusetts Avenue, NE, Washington, D.C. 20002.

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Enduring Questions on Ballistic Missile Defense

Ballistic missile defense remains an enduring national security controversy. As the world verges on the completion of a comprehensive ban on the testing of nuclear weapons, concluding a multi-decade quest, the debate over ballistic missile defense has once again sputtered into prominence, at least in the cloistered halls of Washington.

In the summer of 1993, US Secretary of Defense Les Aspin declared an end to the Star Wars debate, and renamed the Strategic Defense Initiative (SDI) the Ballistic Missile Defense Program (BMDP). While a few acronyms were changed, and the staff of the SDI Organization acquired new BMD Organization business cards, little else of substance changed. For the most part the Clinton Administration merely renamed and continued programs dating from the Reagan or Bush era. Although the budget requests of the Ballistic Missile Defense Organization declined to roughly \$3 billion, from the \$4 billion annual budgets of the Strategic Defense Initiative Organization, the military services largely made up the difference in their own budgets.

With the advent in 1995 of the new Republican Congressional majority, those few Reagan-era programs that had been curtailed, such as space-based lasers, were projected for revival as part of the "Contract With America." And in 1996, the Dole presidential campaign extended the Cold War nostalgia with futile efforts to enact the Defend America Act. While the more exuberant excesses of these initiatives foundered on Administration opposition, the White House proved more tractable on questions of money, as a disproportionate fraction of increased military spending flowed towards the coffers of missile defense contractors.

Throughout the first epoch of the nuclear era, America was continually confronted with a security dilemma for which ballistic missile defense seemed at first an appealing solution. In each instance, closer examination revealed the flaws of BMD and the availability of more sensible approaches and alternatives. At the same time, the national debate over BMD was a useful framework for examining fundamental national security issues. We are thus confronted, once again, with the enduring ballistic missile defense questions: Do we need it? Will it work? How much will it cost? Will it create more problems than it will solve? And why are we doing this?

1 - Do We Need It?

During the Cold War, the apparent need for ballistic missile defense was never wanting in evidence—one had merely to point to Sputniks overhead or rockets lumbering through Red Square. Advocates of strategic defense endlessly rehearsed fears of an implacably hostile Soviet menace. And in any event, ballistic missile defense remained the missing ingredient in the more comprehensive nuclear warfighting strategies that informed other strategic nuclear programs. Without ballistic missile defense, these other programs were clearly deficient in adding more than they subtracted from American security.

Ultimately the case for ballistic missile defense during the Cold War foundered on the presence of a worthy adversary: The Soviet Union gave every evidence of being prepared to build however many nuclear weapons and missiles would be required to offset whatever advantage might be secured through American anti-missile programs.

"Limited" Nuclear Wars

With the end of the Cold War, the proponents of the military utility of nuclear weapons have gained a new lease on life. Now, it is argued, "limited" nuclear wars could indeed be limited, if only by virtue of the modest stockpiles of nuclear weapons which might in the future be held by potential adversaries—the so-called "rogue states" of Iran, Iraq, Libya, North Korea and Syria. Visions of splendid first strike and robust damage denial capabilities that proved so elusive in the face of the "Evil Empire" now seem not-implausible in the face of the meager assets of these "rogues."

It is important to pause, momentarily, to recall that these are indeed the issues that are at stake in the present debate. The crystalline clarity of the debates over nuclear theology has been clouded by the more general haze of the post-Cold War strategic confusion. Presently the case for BMD is couched in broad terms of counter-proliferation and countering the excesses of the rogue states. Anti-missile systems are deemed a panacea for all manner of advanced missile-delivered weapons that might be employed against American interests.

But the ultimate reality is that the scenario of

greatest interest, and ultimate concern, is one in which nuclear tipped missiles are launched, or threaten to be launched, against American cities. Though the identities of the adversaries may have changed, the major and minor arcana of this awful moment differ in no ponderable respect from those considerations that entranced generations of nuclear theologians thinking about the unthinkable moment of truth in the contest with the Soviet Union, or with Red China. Apart from the fact that (at least one side) of such a nuclear exchange would be limited by the relatively modest arsenals of the rogue states, we are presented once again with all the problematic perplexities of fighting and "winning" a limited nuclear war.

But the window of opportunity for realizing these nuclear warfighting scenarios may prove fleeting, given the vastly expanded difficulty in defining a problem to which BMD is a solution. That is, the ballistic missile threat must be large enough to be worthy of notice, but not so overwhelming as to merely recapitulate all the conundra of the Soviet threat.

The star warriors and nuclear war-fighters have been not entirely equal to this task. While a broad range of potential missile threats has been conjured with recently to justify continued or expanded BMD programs, upon closer examination each is revealed in turn as either too meager or too daunting a threat to warrant ballistic missile defense as a primary response.

Scud-The Beginning or End of the Line?

Advocates of "robust" anti-missile efforts contend that the threat that is posed to the national security of the United States by the proliferation of ballistic missiles is significant and growing, both quantitatively and qualitatively. But the reality is that the number of states with active ballistic missile programs has actually declined in recent years. Argentina, Brazil and South Africa have all abandoned their programs, and no additional states have entered the lists. Current countries of proliferation concern, such as India and Pakistan, are neither current nor plausible adversaries of the United States. In general, the Missile Technology Control Regime, along with other non-proliferation and export control efforts, have been highly effective in controlling the spread of missile technology.

Essentially all ballistic missiles presently in the hands of potential regional adversaries have ranges in the hundreds, rather than thousands, of kilometers.

Currently programmed, treaty-compliant missile interceptors, such as the Patriot PAC-3, will work about as well as can be hoped against these potential threats.

The rogue states have yet to deploy missiles with ranges of thousands of kilometers. And this is no accident—by and large, missiles with ranges of more than a few hundred kilometers would sail harmlessly over the regional rivals of the rogue states. North Korea finds South Korea embarrassingly close, and the bulk of the Japanese home islands are less than a thousand kilometers removed. Deploying ballistic missiles with ranges of thousands of kilometers would bring the Philippines, Vietnam and Outer Mongolia within the North's reach, to no apparent purpose. Although there are reports that North Korea is developing such missiles, this would represent a major technological challenge, and it is entirely imaginable that the limited photographic intelligence supporting these reports are based on little more than dummy mock-ups of missiles.

Even Iran, often cited as the customer for Pyongyang's new and improved missiles, must reach out a mere 1,000 kilometers to touch Israeli soil. Indeed, in looking at regional rivalries, there is no plausible pairing of launch site and target that would require missiles with ranges of thousands of kilometers. Thus it should come as no surprise that neither of the rogues with indigenous missile industries—Iraq and North Korea—have devoted great energy to developing such long-range missiles.

And there seems little prospect that longer range missiles will be deployed any time soon. The Iraqi missile industrial base has been effectively dismantled in the wake of the Gulf War, with little prospect of its revival in the face of greatly strengthened international controls on access to missile-related technology. The North Korean program has proceeded at a remarkably leisurely pace, and seems unlikely to produce usable missiles in meaningful numbers in the limited time remaining to the regime presently governing that unfortunate land.

In addition, the costs of long-range missiles mandate that they be deployed in smaller numbers than the Scud and its kindred, which means that they will be of even less significance if armed with conventional warheads. The potential small inventories of longer range theater missiles would primarily be of interest for delivering weapons of mass destruction—most plausibly nuclear weapons.

Although long-range missiles could be used to

deliver chemical or biological agents, dispensing such agents from high speed reentry vehicles would be fraught with uncertainties, and it would be difficult to achieve decisive results without large numbers of missiles to offset these uncertainties. During the Cold War no state deployed such long-range missiles with chemical or biological warheads, and it is not apparent that other states would follow a different logic.

Thus the longer range theater missile threat is largely (though not entirely) joined with the spread of nuclear weapons, which probably accounts in no small measure for the limited interest shown in such missiles. Neither Libya nor Syria have mounted meaningful nuclear weapons efforts, and the Iraqi and North Korean programs are in abeyance. The Iranian nuclear weapons program is proceeding rather slowly in the face of heavy international opposition, and there is little reason to anticipate that Iran's declining economy and decaying animosity to the West will propel their nuclear weapons program to culmination.

While it is true that in the late 1980s Saudi Arabia acquired a few dozen CSS-2 missiles, with ranges of about 3,000 km, there seems little immediate chance that these missiles will be turned against the friends or forces of United States. And it is equally difficult to envision the use against American interests of the Indian Agni missile, with a somewhat lesser range.

There would seem to be no compelling reason for deploying anti-missile systems specifically intended to counter theater ballistic missiles with ranges of thousands rather than hundreds of kilometers. The case for deploying theater missile defenses with capabilities beyond those of the improved Patriot PAC-3 /ERINT remains unproven.

New Intercontinental Threats?

And finally, BMD advocates claim that the rogue states have demonstrated an interest in acquiring ballistic missiles capable of reaching the United States. But apart from a few off-hand comments to reporters,



This Patriot surface-to-air missile uses a fragmentation explosion to destroy its target. It is as effective as can be hoped for against Scud and Scud derivative short range missiles.

there is no concrete evidence that any of these countries are actively seeking such capabilities—while talk is cheap, ICBMs are rather more expensive. The feeble Iraqi program, such as it was, has been dismantled. At present the only real country of direct concern to the United States is North Korea, which faces substantial technological challenges in developing missiles more capable than the Scud.

Even the most capable North Korean missile for which there is any evidence whatsoever—the Taepo Dong-2—has at most a potential for reaching the furthest tip of the Aleutian islands. Korean intentions and capabilities for developing this missile remain uncertain, as it appears to represent a challenging departure from merely

scaling up the redoubtable Scud. And it remains to be seen whether the Taepo Dong-2 is a “real” program, or merely an attempt to impress and deceive the American intelligence community, as some analysts suggest it may be that the mockups and test facilities observed by our intelligence satellites are in fact crafty deception measures. The curtailment of the North Korean nuclear program has certainly diminished the utility of such a missile.

In any event, the profound engineering challenges that in turn confronted America, the Soviet Union, and China in the development of ICBMs has led the US intelligence community to conclude that the emergence of new ICBM threats to the continental United States lies more than a decade in the future. While BMD advocates have quibbled with these numbers, there is little reason to doubt this fundamental conclusion.

In light of the daunting challenges posed by indigenous long-range missile development, BMD proponents have asserted that there are ways for determined countries to acquire missiles capable of threatening the US by means other than indigenous development. The favorite scenario is that a country contracts with Russia to purchase a SS-25 ICBM to use as a space launch vehicle, and when the rocket is delivered, the Russian crew is bound and gagged at gun-point, and the rocket converted into a missile aimed

at New York. Even Tom Clancy would have a hard time making this plot believable, and it is difficult to understand basing national policy on such outlandish imaginings.

Russia is a signatory of the Missile Technology Control Regime (MTCR), and by all accounts is working to ensure its implementation. The Russian aerospace industry now enjoys a profitable position in the international launch services market, which is contingent on continued compliance with the MTCR. Faced with the choice between the sale of a few missiles to a poor country such as North Korea, or continued sales of many launch vehicles to a variety of rich countries, the self-interest of the Russian aerospace industry clearly supports strict compliance with MTCR.

While rogue states might wish to acquire the means of striking America, ICBMs are surely the most expensive and challenging of their options. These states have a demonstrated track record of supporting international terrorist activity, and terrorism would be a far less demanding means of striking America. However, such acts against the United States have been quite rare, and ambiguous in origin, suggesting that fear of retaliation, rather than simple inability to reach America, has stayed the hand of potential adversaries. Ballistic missiles, in contrast, leave an unambiguous return address of their launch site, inviting certain retaliation.

Old Threats in New Bottles

That anti-missile systems remain a solution in search of a problem is most clearly revealed by the extent to which advocates of ballistic missile defense resort to China and Russia as threats of last resort to justify BMD deployment. Implicitly conceding that the rogue states are weak reeds upon which to support ambitious weapons systems, BMD proponents seem disinclined to concede that the demise of the Soviet Union or the effective collapse of Communism in China have diminished the case for deploying anti-missile systems against these former adversaries.

Die-hard BMD advocates have insisted from the outset that Russian and Chinese nuclear forces constituted a clear and present danger that could only be countered by anti-missile defenses, but a national consensus has persisted to the contrary, and there seems to be little new in recent years to alter that judgment.

In the immediate aftermath of the collapse of Soviet state power, there was heightened concern about the potential for accidental or unauthorized launch of strategic missiles. Over time, this concern has been replaced by a much more tangible and immediate concern about the potential for diversion of Russian nuclear material by terrorists or criminal organizations, which is being addressed through the Nunn-Lugar cooperative threat reduction initiatives. The continued disarray of Russian early warning and command and control systems is worrisome, but there are much more direct solutions than BMD, including improvements in joint early warning mechanisms, and further reductions in the alert levels of strategic forces.

As for China, America survived the Great Proletarian Cultural Revolution, the Gang of Four and other alarming excursions by the Chinese polity without the aid of a BMD system. The continued determination of Beijing to "liberate" Taiwan notwithstanding, there is little prospect that either country would risk burgeoning economic ties in a military confrontation that runs a significant risk of a nuclear exchange.

2 - Will It Work?

The embarrassing variety of notional threats has spawned an equally embarrassing variety of anti-missile system proposals. Some are relatively well established and non-controversial, while others remain poorly defined and highly controversial, even among ardent BMD supporters. Some systems have undergone extensive field testing while others have encountered surprisingly poor performance in initial tests, or have yet to leave the laboratory or the drawing board.

Although initially disappointing test results are likely to be improved on in future trials, there is no reason to anticipate that any system will demonstrate perfect performance with perfect confidence. Against some conventional threats one might conclude that something was better than nothing. But against weapons of mass destruction, prudent leaders will surely conclude that imperfect defenses of uncertain reliability provide no more comfort than no defense at all.

Theater Missile Defenses

Near-term anti-missile improvements to existing air defense systems, including the Army's Patriot PAC-

2 Guidance Enhanced Missiles and the Marine Corps' HAWK upgrades, are relatively modest in cost, have limited technical risk, and are intended to counter existing threats from ballistic missiles with ranges of hundreds of kilometers. But other more ambitious service programs pose greater challenges in countering potential future emerging theater threats.

The Army's Theater High Altitude Area Defense (THAAD) is intended to provide extended coverage, engaging incoming missile at ranges of up to several hundred kilometers. The THAAD interceptor is designed to actually collide with the target ballistic missile, rather than destroying it by exploding nearby (as did the Patriot's fragmentation warhead). Final guidance to the target is provided by an infrared seeker on the kill vehicle. The interception of a hostile ballistic missile is intended to occur outside the earth's atmosphere, or high in the atmosphere—at ranges approximately 200 km horizontally and 150 km vertically. In order to provide an emergency capability to counter a small number of missiles, plans call for fielding about 40 THAAD missiles and associated radars by 1999.

Launched from AEGIS radar-equipped ships, the Navy's Theater Wide long-range interceptor system could also provide wide area coverage against long-range missiles. The LEAP kill vehicle, derived from the Star Wars Brilliant Pebbles interceptor, could also be used for ascent phase intercepts where the ship's mobility permits such engagements.

Each of these interceptor systems would be supported by associated radars. In addition, other space-based sensors would also be used in theater (and national) missile defenses. Although these programs were formerly funded as part of the Strategic Defense Initiative Program, more recently they have been funded directly by the Air Force, while retaining their missile defense mission.

The Space-Based Infrared System (SBIRS) is an integrated system of global missile warning satellites which will replace the existing Defense Support Program (DSP) satellite constellation in geostationary orbit and the HERITAGE intelligence sensors in elliptical high earth orbit. In addition to supporting the traditional missile launch detection function of DSP, the SBIRS constellation will significantly enhance support to theater and national missile defenses. Deployment of SBIRS will begin in 2002 with the launch of the first of four SBIRS geosynchronous orbit and two highly elliptical orbit satellites.

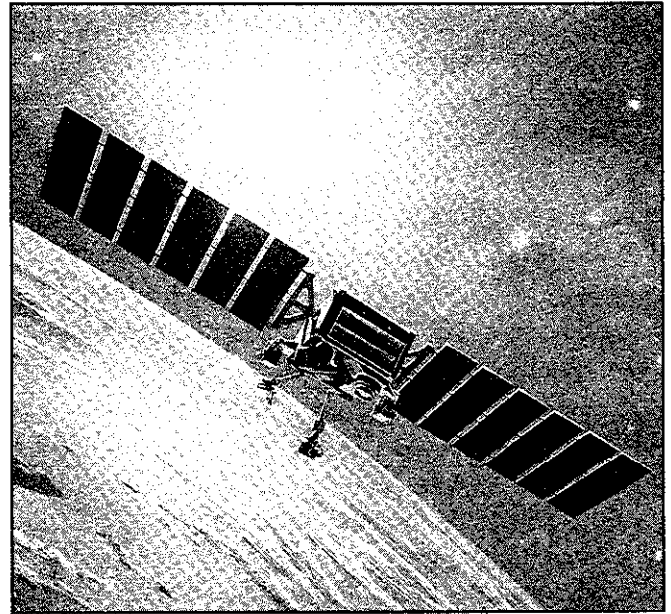


PHOTO AND CAPTION FROM TRW SPACE & ELECTRONICS GROUP
The Space & Missile Tracking System (SMTS) constellation of spaceborn sensors is an advanced surveillance system geared to track the threats of the 21st century.

SBIRS also includes deployment of from 21 to 28 low-altitude Space and Missile Tracking System (SMTS) satellites, possibly beginning as early as 2002, and in any event by 2006. SMTS, formerly known as Brilliant Eyes, is the low earth orbit component of the SBIRS architecture which is able to track missiles following the burnout of the booster motors. This post-boost phase tracking capability enables the system to cue long-range theater and national missile defense interceptors with precise targeting data, vastly expanding their range and coverage.

"Thin" National Missile Defense

The Clinton Administration's National Missile Defense (NMD) deployment program is referred to as "3 plus 3"—a three year development and planning phase from 1996 through 1999 which, if necessary, could be followed by a three year system acquisition and deployment phase. This system would be intended to counter an ICBM attack consisting of five missiles launched at the United States from a rogue nation or a very small, accidental launch from more nuclear capable states. If by 1999 it was judged that the ballistic missile threat to the United States warranted the deployment of an NMD system, that system could be deployed three years later, by the year 2003. However, if by 1999 the threat was not judged to warrant NMD deployment, the "3 plus 3" program would preserve the

option to deploy an NMD system within another three years through continued development and testing of system elements.

In the Fall of 1995 the Air Force and Army identified alternatives to the "3+3" deployment option, based on an immediate commitment to deployment, which would require approximately four years to achieve operational capability. These concepts use ground-based radars and sensors, and battle management elements similar to those in the baseline "3+3" plan, although they differ in detail. Each plan proposes to provide coverage of the entire United States, including Alaska and Hawaii. Initially using ground-based radars, either option would use target tracking data from the Space-Based Infrared System and Space and Missile Tracking System when they become operational.

The primary difference between these plans and the baseline "3+3" program is that the service proposals envision an immediate commitment to deployment, while providing a less robust pathway to more extensive future deployment options.

"Defending" America

Deeming these efforts inadequate, Bob Dole's Defend America Act of 1996 required the deployment by the year 2003 of a system to provide "a highly effective defense of all 50 states against limited, unauthorized and accidental attacks ... [that would be] augmented over time to provide a layered defense against larger and more sophisticated ballistic missile threats as they emerge." Just what this would entail remained unclear, though the bill specified that the initial defense must include ground-, sea- or space-based interceptors, ground-based radar, space-based sensors including the Space and Missile Tracking System (SMTS), and a battle management and command and control system to integrate the operations of these various components. The more extensive "augmented" layered defense would follow, adding space-based weapons such as lasers or kinetic energy interceptors (Brilliant Pebbles).

This legislation, which stalled in the Senate and was never brought the floor in the House, was essentially a creature of the Dole for President effort, largely divorced from larger national security objectives. The primary purpose seemed to be to create a campaign

soundbite that Clinton was unwilling to "Defend America," whereas Dole was prepared to make an immediate commitment to anti-missile deployment. But the issue never really caught on in the campaign, and in any event the Clinton "3+3" plan would achieve the same end, though with a slightly more leisurely decision-making timeline, and the follow-on programs of the Defend America plan were not unfunded by Clinton.

Gulf War Lessons Learned (and Relearned)

All of these plans stand in the shadow of the Gulf War with Iraq, which coincided with the collapse of Soviet power. The current ballistic missile defense debate is thus not surprisingly framed in terms of lessons learned and mis-learned from Desert Storm. In the wake of that defining event, the broad array of anti-missile systems initiated to counter the Soviet threat from the East were reoriented to counter the impending threat from the South.

The end of the Cold War coincided with the first actual combat experience with anti-missile weapons, and the lessons learned from the Gulf War experience have both illuminated and obscured the subsequent anti-missile debate. It is clear that the Gulf War provided valuable data on key questions such as the importance of intelligence, the workings of deterrence, the effectiveness of counterforce, and actual anti-missile operations. Not surprisingly, the interpretation of this data remains in dispute.

The bare facts are well established. During 40 days of combat operations, Iraqi forces fired at least 81 modified Scud missiles, primarily at targets in Israel and Saudi Arabia. All of these launches were detected by American early warning satellites, and a total of 157 Patriot interceptor missiles were fired to counter these attacks. The total resulting property damage was subsequently estimated at several hundred million dollars, with numerous injuries, including 28 American soldiers killed by a single Scud that struck a barrack in Saudi Arabia.

The conventional wisdom in the immediate aftermath of Desert Storm focused on apparent successes of active defense. Thus were the flagging fortunes of the Strategic Defense Initiative revived. Since then, a more nuanced view has emerged. Now it is clear that deterrence, when it was attempted, worked perfectly; counterforce worked extremely well;

and active defense worked very poorly, if at all.

It was formerly believed that deterrence failed from the outset, with the Iraqi seizure of Kuwait, and that Saddam Hussein represented a new class of "non-deterrable threats." More recently it has become clear that while there was little effort to deter Iraq with respect to Kuwait, extensive, and successful, efforts were made to deter Iraqi use of unconventional weapons once the fighting actually started. Numerous public and private statements by officials of all the nuclear weapons states in the coalition warned Iraq of the incalculable consequences that might follow the use of weapons of mass destruction.

On the eve of the onset of combat, Secretary of State James Baker met with Iraqi Foreign Minister Tariq Aziz. In his memoirs, Baker notes that "I purposely left the impression that the use of chemical or biological agents by Iraq could invite tactical nuclear retaliation My own view is that the calculated ambiguity regarding how we might respond has to be part of the reason" that Iraq did not use such weapons. Iraq had the capability of using such weapons, and it chose not to do so. Saddam was successfully deterred.

At the time, the conventional wisdom was that the great Scud hunt had consumed vast quantities of American air power to no purpose. Now it is clear that the air campaign against the Scud mobile launchers constituted only about 2 percent of the total sorties during Desert Storm and was astonishingly effective at inflicting "virtual" attrition. Iraq had roughly 500 Scuds on hand, and at demonstrated daily launch rates Iraq could have launched them all, had it not been for the fact that the Scud drivers were far too busy hiding from the air campaign to worry about trying to perform their mission of firing their missiles. This 85 percent virtual attrition from the air campaign certainly exceeded the performance of Patriot.

As is now well known, the Patriot air defense missile, rather than being virtually perfect, failed for precisely the reasons that skeptics of missile defense

had long predicted. Patriot was confounded by the countermeasures (inadvertently) created by fragments resulting from Scuds breaking apart as they reentered the atmosphere, and computer software reliability proved to be a fatal flaw.

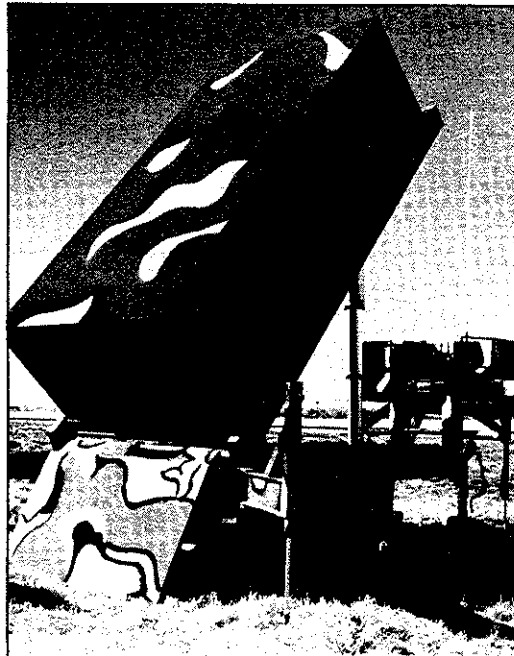
Unfortunately, in future conflicts anti-missile systems might be confronted with adversaries who are deliberately rather than merely inadvertently clever. The next step up the threat ladder is missiles of similar range to the Scud armed with less conventional submunitions—cluster-bombs carrying either chemical or biological agents. Although it is not believed that such

missiles are currently in the arsenals of potential regional adversaries, Iraq is known to have conducted work on cluster-bomb warheads for its Scud-derivatives prior to the Gulf War. And no great engineering marvel is required to extend the cluster-bomb techniques used for bombs dropped from airplanes to a ballistic missile warhead.

Theater missiles tipped with cluster bombs recapitulate all the tactical problems posed by nuclear Multiple Independently Targeted Reentry Vehicles (MIRVs) during the Cold War, except that nuclear MIRVs were typically limited to a dozen or so warheads per missile, whereas dozens if not hundreds of chemical-filled cluster bombs might be fitted atop a single Scud-derivative. The task of the defense is further complicated by the fact that each cluster bomb is little more

than a glorified hand-grenade, too small a target for a million-dollar interceptor. Although there are potentially other means of countering this threat, firing expensive ground-based interceptors at great incoming clouds of cheap cluster bombs seems far from the most promising.

The actual combat experience of Desert Storm has reinforced the conclusion that anti-missile systems, from improved versions of Patriot to the most ambitious space-based interceptors, cannot plausibly aspire to perfection. While each of these systems might be capable of intercepting some missiles some of the time,



Lockheed's THAAD launcher. THAAD is expected to be capable of hit-to-kill intercepts more than 100 miles from the intended target, greatly reducing the chance of causing damage to civilian populations. Great in theory, but will it ever be good enough, consistently enough to justify the expense?

the combat experience of Patriot demonstrates that none of these future systems can be relied upon to intercept all their targets all the time.

3 - How Much Will It Cost?

Subsidiary to questions of need or effectiveness, though not entirely unimportant, is the question of cost. The price-tags of currently contemplated anti-missile systems may seem modest compared with the trillion dollar fantasies of a decade ago. But this is nonetheless real money, even by Washington standards. The multi-billion dollar Clinton Administration budgets approach the actual levels of funding provided by the Congress during the first decade of Star Wars. And the billion or so proposed for additional funding by Republicans will certainly match the largess of the Reagan era.

Reviving Reagan and Bush Administration programs for deployment of National Missile Defense and a Global Protection System could require doubling this budget more or less immediately, with significant further increases thereafter. We have very little to show for the \$40 billion already spent on Star Wars over the past dozen years. And we will have even less to show for spending another \$40 billion on Star Wars over the next half-dozen years, should we restore the projects advocated by previous administrations.

Total development costs for the Clinton Administration's "3+3" option are estimated at about \$2.5 billion, with total program deployment costs of about \$10 billion. The Air Force estimates that its proposed early deployment option could be fielded for \$2.5 billion, although other sources have suggested that the total cost could be as high as \$4 billion. And the Army projects the cost to develop, test, acquire, and deploy its proposed system at about \$5.2 billion—or for \$4.8 billion it could provide a higher risk quick response or emergency capability that would require four years to deploy would encompass less testing.

The Congressional Budget Office predicts that the Dole Defend America Act would cost nearly \$10 billion over the next five years—roughly \$7 billion more than has been budgeted by the Clinton Administration for national missile defense. Through 2010, CBO estimates that the Defend America plan could cost between \$31 billion and \$60 billion, depending on what types of systems are deployed. And according to the CBO total recurring costs would be about \$2 billion annually for the low-end system and about \$4 billion annually for

the high-end system.

These are not small amounts of money—the annual recurring costs of the Defend America program range between the total annual budget of NASA's space station and the annual costs of the space shuttle—roughly equivalent to the entire budget of the National Science Foundation.

4 - Will It Hurt More Than Help?

Unfortunately, these immediate financial costs may be dwarfed by larger strategic and geopolitical costs, which would have far greater though less readily calculated financial implications as well.

Deployment of even the Clinton Administration's "3+3" system would require at least re-negotiation of the ABM Treaty, and deployment of more extensive defenses would require either the wholesale restructuring of the Treaty or its abandonment entirely. Thus far the Russian government has demonstrated no enthusiasm for tinkering with the ABM Treaty. And there appears to be broad support in Moscow for conditioning implementation of the START-2 agreement on continued adherence to the current ABM Treaty regime.

As always, there is no prospect that any American anti-missile system could entirely deprive Russia of the capacity to destroy American society in a retaliatory strike. However, neither Russia nor America currently bases its strategic calculus simply on such finite deterrence capabilities. Rather, existing and immediately prospective arms control agreements envision both sides retaining the capability to rain thousands of nuclear weapons upon the other's territory.

The START-1 and START-2 arms reduction agreements would impose significant reductions, but these agreements, if implemented, would not entirely eliminate the potential for one side to attack and destroy a substantial proportion of the other side's retaliatory capability. Indeed, some developments, such as large inventories of counterforce-capable submarine-launched missiles, the elimination of mobile land-based missiles, and improved attack submarine capabilities, may have somewhat increased the potential for a first strike.

Under such worst-case conditions, which have always been the touchstone of the nuclear debate, even relatively modest anti-missile systems might perform relatively well in blunting the resulting ragged retaliation. While certainly not providing a complete damage-denial capability, they might make the difference

between the survival of society and its utter devastation. And this advantage would accrue only to the side that struck first, increasing the incentives for both sides to preempt in a time of crisis. The obvious counter, keeping forces on high levels of alert so that they can be launched before the blow from the other side lands, increases the risk of inadvertent or accidental use of nuclear weapons, particularly in the face of possible failures of command and control systems.

Guarding against such a futile and potentially opened arms race was the central consideration in the signing of the ABM Treaty in 1972. It was agreed at the time that only extremely modest systems would be deployed—100 interceptors defending a portion of the country's territory from a single site.

It is clear that some of the more robust architectures envisioned for countering accidental or inadvertent launches—as many as 200 warheads—involve architectures that conservative Russian planners might regard as calling into question the viability of their deterrent posture. The hundreds of warheads intercepted by such anti-missile systems might represent a significant fraction of the Russian warheads surviving an American first strike.

If the United States chose to move beyond the long-standing ABM Treaty limits, potential Russian reactions are difficult to gauge. Much would depend on whether the transition to a new regime was done with or without Russian agreement. The Reagan and Bush Administrations sought vainly for years to persuade Moscow of the wisdom of deploying large-scale anti-missile



Former Senator Robert Dole sponsored the Defend America Act of 1996. The bill stalled in the Senate and was never brought to the floor in the House, largely due to high cost projections.

systems. The Clinton Administration has had little more success in persuading Moscow of the merits of far less sweeping revisions to the Treaty.

Thousands of ballistic missiles and nuclear warheads capable of reaching the United States is today under Moscow's control. Thus it would seem only prudent to carefully gauge potential new responses to new or emerging threats in light of their potential impact on exacerbating this traditional threat.

5 - Why Are We Doing This?

Despite these risks, an impressive array of institutional forces are driving American policy in a direction of ignoring all of the true lessons that we should have learned from Desert Storm.

Dole and the Republicans

It is frequently claimed in Republican circles that the fear of Star Wars was a (if not the) proximate cause of the demise of the "Evil Empire." This claim bolsters Republican unity on ballistic missile defense that is unmatched on other fronts. The Party is deeply divided between deficit hawks and defense hawks, and isolationists and interventionists; ballistic missile defense is one of the few points that all can agree on. Thus it is no accident that in the Republican "Contract on America," Star Wars was about the only plank in the national security component that actually called for spending money. The depth of the divisions in the Republican Party were highlighted by the inability of the House leadership to bring the Defend America Act to the floor in May 1996, once senior Republicans had become aware of the cost estimates of the Act.

Clinton and the Democrats

The Clinton Administration entered office with the watchwords "It's the economy, stupid"—victorious in a campaign predicated on the proposition that it could lose on foreign policy issues but it could not win on foreign policy issues. Denying Republicans effective foreign policy electoral issues has extended to embracing Republican foreign policies, to the extent that such policies can be discerned. While confusion within Republican ranks has complicated this task, as demonstrated by the Defend America Act imbroglio in the

House of Representatives, for the most part Clinton Administration tactics have succeeded in denying the Republicans political advantage on foreign policy, while failing to follow sensible ballistic missile defense policies.

The Military

Each of the military services has its own institutional reasons for advancing the ballistic missile defense agenda, both to satisfy internal political difficulties as well as to advance their interests against the other services.

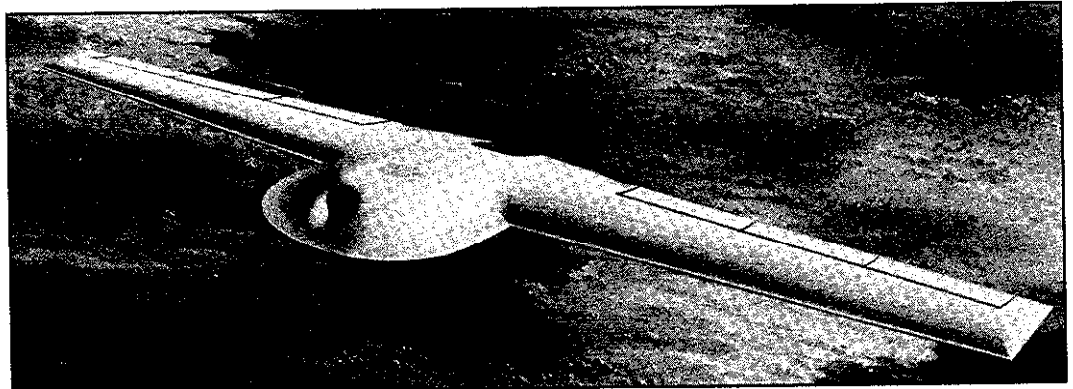
The Army fears that the possibility of casualties from even a single Scud could stay the hand of politicians contemplating military action. An Army that is unlikely to be used in combat is also unlikely to be funded in peacetime, and thus the Army as a whole must be able to not-implausibly assert that the ballistic missile threat is tractable. And ballistic missile defense remains the Army's claim to a seat at the strategic forces and military space tables otherwise occupied by the Navy and Air Force.

The Navy says that its Upper Tier interceptor will outperform the Army's THAAD—intercepting even longer range missiles. Absent this claim, the Navy might lose a skirmish in its eternal battle with the Army. Upper Tier also solves an internal political problem for the Navy as well. During the Cold War, a vast armada of cruisers and destroyers were dedicated to protecting the Navy's aircraft carriers from Soviet bombers. Absent this threat, the rational course would be to load these vessels with Tomahawk cruise missiles. This would provide a potent strike capability, free of the public relations risk of seeing captured pilots on CNN. But just as battleship admirals dominated the Navy before Pearl Harbor, today the Navy is dominated by carrier admirals, and Tomahawk-armed cruisers would render aircraft carriers largely superfluous. So another mission, such as carrying Upper Tier, must be found for the Navy's cruisers and destroyers, lest either they or the aircraft carriers join the mothballed battleships.

The Air Force has long defined itself as America's "aerospace" champion, and Star Wars and its latter-day descendants has offered an unprecedented opportunity to give operational meaning to doctrinal precepts. Air Force doctrine has long maintained that air and space are a single indivisible operational medium, and that the full panoply of air power missions and weapons should and will have space counterparts. Long frustrated in realizing these schemes, which have always foundered on the fundamental and ineradicable physical differences between air and space (doctrine notwithstanding), the Air Force has embraced ballistic missile defense as the path to future glory. To a far greater extent than the other services, the institutional Air Force is deeply divided between combat and support components, with combat components and their personnel given pride of place and preference in career advancement. The BMD mission offers the unique opportunity to transform Space Command operators and their supporting development components from second class support units to first-line warfighters, and such opportunities are not to be lightly discarded.

Contractors

Last but certainly not least in this debate is the contractor community, which views ballistic missile defense as one of the few remaining opportunities to get new contracts. Having consumed the better part of \$40 billion since 1983 with very little to show as a result, BMD offers ample opportunity for prosperity with little fear of close scrutiny. If one reads the original version of the Missile Defense Act proposed last year in the Senate and looks at all of the specific programmatic changes that were made, one could very easily call the Missile Defense Act of 1995 the TRW



DarkStar Unmanned Aerial Vehicle is a joint development of Lockheed Martin and Boeing. This and other sensors will greatly improve pre-launch targeting of theater missile launchers.

Corporate Legislative Relief Act of 1995. For each and every programmatic change that was made in the ballistic missile defense program there was an identifiable contractor which had an identifiable problem that was being solved. For example, accelerating the deployment of Brilliant Eyes or the Space and Missile Tracking System to the year 2002 ensures that TRW remains in the space-based early warning system business so that its system is being deployed at the same time as those of other contractors.

6 - Whence the Threat to Peace?

In the closing years of the Cold War, Ronald Reagan finally concluded that "a nuclear war cannot be won and must never be fought." During the Cold War there were both Americans and Russians who contested this proposition in the furtherance of their contending ideological agenda. When, as it seemed at the time, the future freedom or the liberation of all humanity for all time was in the balance, it was at least not implausible to conjure with thermonuclear extermination.

For the United States, the detonation of even a single nuclear weapon over an American city could easily result in as many dead Americans as in *all* previous wars combined. This is not a risk that any responsible American leader would face lightly. While considerable sacrifice of blood and treasure was expended in the abolition of slavery or the defeat of the forces of fascist tyranny, today the United States and its allies are mercifully free of such weighty concerns.

While the various rogue states remain an abiding annoyance to their neighbors, and to American policy-makers, even the most vivid imagination can not conflate the threats posed by these countries into disputes that would warrant gambling with the lives of hundreds of thousands, if not millions of Americans. Given the modest stakes that are at issue, even a single nuclear warhead detonated over an American city would be judged an unparalleled policy catastrophe, regardless of how many weapons were intercepted by an anti-missile system, or whatever vengeance was inflicted upon our adversary.

There is little reason to suspect that the leaders of even the rogue states will ultimately make a different calculation. Throughout the first epoch of the nuclear era, a fundamental theological schism divided those who regarded nuclear weapons as ultimately usable, not unlike other weapons, and those who held that these devices

existed only to deter their use by others. Over time, the experience of the nuclear powers inexorably contradicted the conjectures of the nuclear war-fighters, as the possessors of these capabilities consistently shied away from situations in which their use might be actually be seriously contemplated.

During the Cold War it was often said that the United States needed nuclear weapons to offset the conventional superiority of the Red Army—the semi-mythical "Red Horde." With the end of the Cold War it might not be difficult for some of the rogue states to convince themselves that nuclear weapons might be useful to ward off the "Blue Horde"—the conventional forces of the "Sole Remaining Superpower." As Les Aspin observed, the end of the Cold War has fundamentally reversed the *apparent* relationship between nuclear weapons and American security.

Some leaders in Tehran or Pongyang might sleep more soundly at night knowing that their nuclear arsenal would stay the hand of the "Blue Horde." America would be rightly disinclined to wage unlimited war against states possessed of such deadly capabilities. But it is far from apparent that these states would find nuclear weapons any more "usable" than have countries with longer experience with more abundant arsenals.

While it is frequently argued that the leaders of these countries are less rational or calculating than their great-power counterparts, evidence for such assertions is singularly lacking. There is too much loose talk today about irrational Islamic fanaticism engendering an appetite for martyrdom which would welcome national annihilation as the price of destroying even a single American city. While Islam, like many other great religious traditions, provides sanction for personal martyrdom, it does not compel national suicide.

Fortunately, in contrast to the Soviet Union, it cannot even be *argued* that the rogue states, whatever their ideological bent, pose an existential challenge to the United States. While it may seem prudent from time to time for America to chastise and rebuke (by judicious force of arms if needed) the leaders of these countries for their excesses, the conclusion of the Cold War is the template for the future of these unhappy lands. Over time, the promise of greater prosperity and personal freedom will lead to an evolution away from their adversarial stance towards the world, and the United States can await and encourage this evolution with the same patience that it awaited this evolution in other adversaries. □

<http://www.fas.org/spp/starwars/>

The Campaign to Stop Star Wars internet presence on the World Wide Web is the premier online source of information on ballistic missile defense and related issues, with nearly a thousand documents hosted at the site, and links and pointers to thousands more.

The Space Policy Project has long maintained an unrivaled hard-copy collection of research materials, and with the advent of the internet this collection is now being made directly available through an indexed and searchable online implementation.

The **Hot Documents** and **Hot Sites** sections provide pointers to the most interesting and important documents and internet web sites on ballistic missile defense and related issues.

The **Analysis** section is a comprehensive library of introductory and detailed analysis of the technical, strategic and political issues raised by the current BMD debate from FAS, other peace and security organizations, and the academic community. Complementing this coverage, the **Advocates** section includes references to online materials from such sources as the Heritage Foundation, the High Frontier organization, and Frank Gaffney's Center for Security Policy.

The executive branch **Documents** section is a comprehensive collection of primary documents from the Reagan, Bush and Clinton Administrations covering ballistic missile defense programs, strategic arms control, non-proliferation policy and export control administration. The **Election 96** section includes a variety of resources covering the ebb and flow of Star Wars as an issue in this year's Presidential elections.

The section on the **Congress** includes a growing collection, from 1991 through the present, of floor debates extracted from the Congressional Record, the text of prepared testimony from hearings, and relevant portions of committee reports. The **General Accounting Office** section is a comprehensive collection of these valuable analyses of BMD programs, including many reports that are not available elsewhere online.

The **Threats** section, hosted at the Intelligence Reform Project, is a comprehensive guide to government and other assessments of current and prospective ballistic missile and proliferation threats. Our coverage of **Doctrine, Exercises, Tests and Operations** includes both current official doctrinal documents, as well as an extensive collection of materials concerning the

performance problems of the Patriot during Desert Storm. Three additional sections on **Agencies, Programs** and **Contractors** will provide detailed material and pointers to related online resources.

The **World News Reports** section includes texts of official documents, press reports and analyses from over two dozen countries, as well as pointers to online sources of breaking news. On the lighter side, the **Fun and Games** section includes computer games such as Missile Commando II providing amusing and educational illustrations of how BMD systems work and fail to work.

Updates to our web site are regularly noted in the **What's New** section of the Space Policy Project homepage. We also maintain an email distribution list for the distribution of breaking news and particularly interesting materials (send email to johnpike@fas.org to be added to this list).

In recent months the Stop Star Wars web site has been averaging several hundred users downloading well over a thousand documents each week. This vastly exceeds our prior hardcopy distribution of material. We have found our web presence to be a particularly powerful tool in media relations, and frequently refer reporters to the site for background materials and key documents, increasing our dissemination of information while significantly reducing the burden in the process.

Other Projects

Space Policy Project

<http://www.fas.org/spp/>

While the Campaign to Stop Star Wars remains the primary focus of the Space Policy Project, a number of related activities are also in progress.

Along with colleagues at the Russian Institute of Space Policy, we have released the first part of our comprehensive profile of the Russian aerospace industry. The guide will be helpful in assessing opportunities for international cooperation, as well as managing the risks of missile technology proliferation.

We also have an online edition of our report *Attack Aircraft Proliferation-Areas for Concern* examining the international traffic in modern combat aircraft.

Building on our long-standing expertise in military

and civil space systems generally, we are compiling comprehensive guides to these programs paralleling the structure of the Stop Star Wars resources.

Within hours of learning of the impending announcement by NASA of findings suggesting the possible existence of life on ancient Mars, the Space Policy Project created a **Life on Mars** homepage on the internet. Knowing that these developments would be of interest to the global scientific community and the public at large, we provided pointers to online resources and primary documents. We also made a transcript of the news conference announcing the findings, and the first take of this transcript was available online before the news conference itself had ended. In the first two days following the announcement, over 20,000 users from nearly 70 countries (extending to Malta and the Faroe Islands) accessed this site. And in one of the most intense media blitzes in the history of the Space Policy Project, we consistently stressed the need for a cooperative international response to evaluating these provocative findings.

Intelligence Reform Project

<http://www.fas.org/irp/>

The Intelligence Reform Project is the intersection of activity between the Federation's Space Policy and Secrecy and Government Projects. In recent months this project has been the venue for our analysis of seemingly inadvertent disclosures of intelligence agency budget and personnel figures, as well as hosting threat assessment briefing materials related to ballistic missile defense and weapons proliferation issues in support of the Campaign to Stop Star Wars.

Military Analysis Network

<http://www.fas.org/man/>

In 1995 FAS initiated the Military Analysis Network as a focus for our work on military spending and related issues. The Network initiated and provided the staff support for the Military Spending Working Group of nearly two dozen peace and security community organizations. Despite significant progress in developing a long term national strategy on the military spending issue, we were unable to secure support adequate to sustain this level of activity. However, the departure of the primary staff person for the Network, Marcus

Corbin, has not ended our work. We continue to participate in the activities of the Military Spending Working Group, and to provide webmastering and other internet support services for its activities. We continue to focus our unique combination of analytical and media work on particularly wasteful examples of excessive military spending, including but not limited to Star Wars, the B-2 "Stealth" Bomber, and many intelligence related programs.

CyberStrategy Project

<http://www.fas.org/cp/>

Recognizing the unique opportunities afforded by the emergence of the internet as a pervasive new communications medium, in early 1995 FAS initiated the CyberStrategy Project as a focus of our own work on this front, as well as to serve as a resource for other organizations in our community. Over the course of the year, our webmaster extraordinaire, Michael Panetta, implemented the FAS internet presence on the World Wide Web, assisted over a dozen other organizations in getting online, and provided webmastering services for a number of community working groups. Unfortunately, these signal achievements exceeded the financial resources we were able to secure for this initiative.

Public Eye

<http://www.fas.org/eye/>

By the end of 1997 several private companies have plans for a fleet of commercial "spy" satellites which will provide high resolution global imagery surpassing in quality that available to the United States in the early years of the space age. The commercial availability of this imagery may provide FAS, other peace and security organizations, and non-profit advocacy organizations generally, with an unprecedented opportunity to monitor global developments and influence public policy. The Public Eye initiative is focused on examining these opportunities. We are using available imagery to provide imagery of Russian aerospace industry, missile, and ballistic missile defense facilities. Capitalizing on very favorable notice of our work and ideas in articles in *Scientific American* and *The New Republic*, we are exploring opportunities for obtaining support to raise awareness of these opportunities in the arms control and other policy communities.

FAS Backs CIA's FBIS Program

Following reports that the Central Intelligence Agency planned to sharply cut the budget of its Foreign Broadcast Information Service (FBIS) in 1998, FAS began a campaign to help save the beleaguered program, and our efforts appear to have paid off.

Dating back to World War II, FBIS collects, translates, and publishes translations of foreign broadcasts and press reports from around the world, monitoring over 3500 publications in 55 foreign languages. Scholars, activists, journalists and policymakers of all description rely upon this invaluable resource.

Although FBIS only deals in unclassified, open source intelligence (or perhaps for that very reason), "The information that FBIS has collected over the years has been critical to US national security decision makers," former Acting DCI Admiral William Studeman noted in 1992.

And unlike almost every other intelligence product, FBIS publications are made available to the public, where they have found an enthusiastic, even passionate audience.

In a July 2 alert to the scholarly community, Professor Gary G. Sick of Columbia University reported that the CIA was considering a 20% cut in FBIS personnel and a 38% cut in the non-personnel budget. He wrote, "This would have a crippling effect not only on the Washington, DC operations but also on the overseas bureaus and monitors. It is estimated that these cuts would result in the closure of approximately one-third of the FBIS bureaus worldwide" beginning in FY 1998.

This makes little sense, since FBIS is probably the most cost effective operation in the entire U.S. intelligence community, and undoubtedly the most widely used, providing incalculable benefits to U.S. industry, academia, and the public at large, in addition to its official government consumers.

In fact, the FBIS budget ought to be multiplied if it is to keep pace with the proliferation of foreign publications in formerly closed societies. This could be accomplished, for example, through reductions in technical collection systems which have been substantially over-funded in recent years.

"We want this program restored and expanded," wrote Federation of American Scientists President Jeremy J. Stone in a July 18 statement that was posted on the internet. "Throw out something else—anything else—from CIA's budget."

The widely circulated FAS statement elicited a warm response from all corners.

"You can not believe how welcome this statement is to me personally," wrote one senior intelligence official. "Congratulations on your effort to lobby for reversal of these terrible changes," wrote a leading East Asia scholar. "I hope your efforts mobilize a wave of protest of tsunami proportions."

Supporters of FBIS "are making their views known," CIA spokesman David Christian told FAS. And although the 1998 budget request has not yet been finalized, the unofficial word is that the severe cuts to FBIS that were proposed have now been reconsidered.

—Steven Aftergood

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