

The Problems and Prospects of the New Alaska Missile Interceptor Site:
Ten Fallacies About Missile Defense

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In recent speeches, U.S. President George W. Bush and his Secretary of Defense Donald Rumsfeld have lauded their planned deployment of a national missile defense system in Alaska and California called the Ground-based Midcourse Missile Defense (GMD) system.

For example, on August 17, 2004, while speaking about missile defense during campaign remarks in Ridley Park, Pennsylvania, Bush said, "We say to tyrants who believe they can blackmail America and the free world, 'You fire, we're going to shoot it down.'"

Is this true? Can we shoot 'em down? Should we say to the rogue nations of the world, "Bring 'em on?"

After all, Lt. Gen. Ronald Kadish, then-head of the Missile Defense Agency (MDA), said last June, "In calendar year 2004, there will be a [missile defense] system in place that will defend the United States. We will have the capability in September [2004]." Was that true?

No. Not all the pieces will be in place in 2004, nor are they in place now, and even if they were, the system has no demonstrated capability to defend against a real attack. Let me say that again. The system being deployed has no demonstrated capability against a real attack and is missing most of its major elements. Here I'm referring to:

1. The X-Band radar, which is missing,
2. The satellite constellations SBIRS-High and SBIRS-Low, the latter now called STSS, all of which are missing, and
3. Adequate discrimination capability by its exo-atmospheric kill vehicle interceptor, the EKV, which is also missing.

The President went on to say, "I think those who oppose this ballistic missile system really don't understand the threats of the 21st Century."

Really? Missile defense doesn't work against car bombs, improvised explosive devices, assault weapons, and rocket-propelled grenades, the tragically real threats in the hands of urban terrorists and "tyrants" in many countries today.

What's surprising about the President's statements now is that three years ago, when asked in a NATO press conference if he would deploy a missile defense system that that didn't work and that had not been adequately tested, President Bush replied, "And those who suggest my administration will deploy a system that doesn't work are dead-wrong. Of course, we're not going to deploy a system that doesn't work. What good will that do? We'll only deploy a system that does work in order to keep the peace."¹

Unfortunately, three years later, that's exactly what President Bush is doing: he is deploying a system that doesn't work and hasn't been adequately tested.

This is like deploying a new military jet fighter with no wings, no tail and no landing gear. And without testing it to see if it could work with no wings, tail or landing gear.

The President has been ill-informed by his advisors, but the President's remarks are the least of the problem.

The problem has been that the Missile Defense Agency, and other missile defense proponents, keep making -- and repeating -- statements which are not true. Here are 10 examples.

1. In their press release on GMD deployment, **the Pentagon's Missile Defense Agency hailed this as "the end of an era where we have not been able to defend our country against long-range ballistic missile attacks."**

Is this true? Have we not been able to defend ourselves? And can this system defend us now?

No, it's not true.

If North Korea began assembling an intercontinental ballistic missile, which would necessitate moving huge rockets around fixed launch facilities and would be highly visible to U.S. spy satellites, our military would blow it up on the ground. Our military would never wait to see if it could intercept the missile when it was flying thousands of miles per hour in space. We would blow up the whole ICBM launch facility with the same weapons that we have seen work so effectively in Iraq and Afghanistan, satellite- and laser-guided bombs and missiles. With those weapons, we already have a missile defense.

But suppose the launch surprised us? Would our missile defenses protect us then? No, because our missile defenses depend on our seeing the enemy missile first with satellites, too.

¹ Press availability with President Bush and NATO Secretary General Lord Robertson, NATO Headquarters, Brussels, Belgium, June 13, 2001.

2. The Missile Defense Agency often says **it can't test the system realistically without deploying it first**. This also is not true. The Missile Defense Agency was testing the system from Kwajalein and Vandenberg when I was in the Pentagon, well before the construction began at Fort Greely. And they could still be doing that without Fort Greely. But as soon as President Bush announced his decision to deploy the system, the priority went to construction and deployment, and the bottom fell out of the test schedule.

There hasn't been a flight intercept test since December 2002, now 21 months ago, one week before the President announced his decision to deploy. But not because they couldn't have continued the test program as planned.

Instead, half of the flight intercept tests that had been scheduled were cancelled, and the other half have been delayed for years.

And they don't actually plan to use Fort Greely for missile test launches anyway because of environmental and safety concerns. They'll continue to test from coastal locations out over the Pacific Ocean, exactly what they could have been doing all along.

3. The third statement being made is that **the system being deployed works and is "better than nothing."** As I and my colleagues wrote in the May 2004 report sponsored by the Union of Concerned Scientists, "Technical Realities: An Analysis of the 2004 Deployment of a U.S. National Missile Defense System," the system being deployed has no demonstrated capability to defend against a real attack, and there is no basis for knowing the system being deployed will have the capability to defend against a real attack.

This is because all of the flight intercept tests so far have been more tightly scripted than a modern political convention.

In these tests, the target launch time and location, the flight trajectory, the point of impact, what the target looks like, and the make-up of other objects in the target cluster have all been known in advance to plot the intercept. No enemy would cooperate by providing all that information in advance.

And the target reentry vehicle has carried a radar beacon, showing the defenses, "Here I am." That's not something an enemy would do, either.

If I am a contestant on *Who Wants to Be A Millionaire?*, and I "phone a friend," and as my friend you tell me the answer to a question, and having been told the answer, I then get it right, that proves nothing about how well I'll do on the next question without your help. In my case, without your help in advance, I'd surely be guessing.

If you want to make me look smart, give me the answers in advance. And if you want to find out how dumb I am, start asking me questions to which I haven't already been told the answers. Missile defense works the same way.

Considering all the artificial targeting aids in these tests, what's surprising is not that some of these tests have succeeded, but that some have failed. This includes the most recent test, held in December 2002, which failed just one week before Bush announced his decision to deploy the GMD system in Alaska.

If you have a copy of our *Technical Realities* report, please look at page 32. It shows an image of blurry pixels less than two seconds before intercept, after the exo-atmospheric kill vehicle (EKV) has had to commit. That picture illustrates the difficulty the EKV has telling one object from another.

But more to the point, the Missile Defense Agency has no intention of testing the system the way it is being deployed, that is, with so many of its intended elements missing. It would be foolhardy to conduct a test where the interceptor had to find the target with no X-band radar, without the SBIRS-High or STSS satellite constellations in place, without prior warning, and by relying instead on existing AEGIS ships, radars, and DSP satellites. The interceptor would miss, the President and the Pentagon would be embarrassed, and this scarecrow deployment would be shown for what it is.

4. Kadish and the MDA have told the Congress and the press many times that **they were going to increase the pace of flight intercept testing**. Did that happen? No. The last flight intercept test was 21 months ago, and reportedly the next one, IFT-13C, which is being billed as a “fly-by,” will not be until late November or December. With 20 or 30 developmental flight intercept tests to go before we get to realistic operational testing, at this rate it could take 50 years before we will see what the system can do without warning and without targeting aids.

5. Kadish and the MDA have told the Congress and the press many times that **they were going to increase the difficulty of the tests to begin to make them more realistic**. Did that happen? No. The eight flight intercept tests so far were basically the same. The most recent of those was to have been the first nighttime test, but it failed.

IFT-13C, referred to earlier, has been slipping roughly day-for-day since it was first scheduled.

With respect to complexity, however, the target set for IFT-13C has been gutted. Originally it was to have been a complex cluster of decoys for data collection and phenomenology measurements. Now it is to be only a single, bare reentry vehicle. Worried about the visibility of the test even though it is billed only as a “zero offset” fly-by, the MDA has removed the complexity that they need if they are ever to demonstrate the capability of the system to work under realistic conditions.

However, the next test, IFT-13C, is supposed to be different from the earlier flight intercept tests. It is to be the first flight intercept test at longer range and higher velocity, albeit still with advance information used to plot the intercept, and with targeting aids -- the beacon -- on the reentry vehicle. A success in this test will be significant, but won't demonstrate -- as the MDA may claim -- that now the system is ready for deployment.

This is because this test also will be conducted under highly scripted conditions with the defense given details of the attack in advance.

6. Another statement that is often made is **of course we're not finished testing but we're conducting dozens of tests**. In a speech last month in Huntsville, Rumsfeld used this analogy: "I was in the pharmaceutical business, and we would send our research and developers out to try to develop therapies that could help people live longer and live better. And they would proceed to experiment and try this and try that and fail and fail and, quote, unquote, 'fail and fail,' and in the end of that process learn from each of those activities what works and what doesn't work. And that is why you end up with products that can help people live longer, because of that series of things that get characterized in your business, in the newspaper, as a failure, as something that's bad and wrong or unfortunate or suggesting there's no way to get there from here. And I think people who've been involved in cutting-edge endeavors understand trial and error, and they understand the learning process."

If the way the MDA is testing missile defense were how Rumsfeld's pharmaceutical company tested its products, G.D. Searle would have gone out of business long ago. What the Secretary described is exactly what the MDA ought to be doing, but they're not.

7. Still another statement is that you can never have enough tests, and besides, **we're relying on modeling and simulation**. I'm all for modeling and simulation, but the capabilities of today's missile defense models and simulations don't begin to capture what goes on with these systems.

Nevertheless, Kadish has said, "Modeling and simulation predicts with great precision what would happen if it works as designed. The problem we have been having from time to time in our flight test program is a very frustrating one. It does not always work as designed because somebody made a mistake in the process. What needs to be achieved in modeling and simulation is to make sure that the designs match the manufacturer's capability."

Kadish knows better than this. Modeling and simulation of missile defense has never predicted actual system performance with great precision. This is not because somebody made a mistake, nor because of the manufacturer's capability. Current models and simulations simply do not capture the most significant variables in a missile defense engagement, and aren't likely to any time soon. The battle environment is highly complex, the software programming requirements are daunting, and the models don't begin to capture the real physics.

Here I recommend you to the March 2004 Defense Science Board Report on Missile Defense Modeling and Simulation. The overall report is very compelling and lays out well a vital task for MDA. I agree completely with the DSB report. But it is a huge task and one that will challenge MDA.

The DSB says that modeling and simulation is needed to see if ballistic missile defense system (BMDS) engagements can in truth be executed in the time available. Accordingly, planning for GMD multiple engagements is still just theory. They don't really know what's possible and what isn't.

The DSB report says that is difficult to see how a missile defense system could be put on alert without an end-to-end systems model. This means that U.S. Strategic Command (STRATCOM) has no end-to-end systems engineering basis to deploy the GMD system even if all the pieces were there, which they aren't.

The report makes the point that the MDA has been using legacy or old models which aren't up to the task. This means a major effort in model development for future models that will include realistic physics and provide real operational military utility.

The DSB report points out that modeling and simulation is needed for investment planning or to support acquisition strategies (read "budgeting") and to know when they have reached the point of diminishing returns on investments. Since they've delayed flight intercept testing and also don't have realistic models, they have no real basis to show the Congress why they need the money they say they need.

And the DSB report points out that flight testing is needed to anchor the models. Without realistic flight tests, the models will just be theoretical.

8. Senior Pentagon and MDA officials have told Congress and the press that the system will be 70, 80, 90 percent effective.

For example, when the members of the Senate Armed Services Committee pressed Undersecretary of Defense Pete Aldridge in 2003 to explain how the system could be 90 percent effective as he had just claimed in his testimony, he couldn't. The SASC members knew that the classified performance requirements were not that high. Later, Aldridge told the House Armed Services Committee that he had assumed that they would shoot four or five times at each incoming enemy ICBM. The idea was that if the first interceptor missed, the next wouldn't, or the next or the next. But for this to be true, each individual interceptor has to have a very high probability of kill in a single engagement, which certainly hasn't been demonstrated. And the capability to conduct multiple intercept attempts has not been demonstrated -- or even tried -- anyway.

A question I'm often asked by reporters is: how good is it? Reporters want a number. What I've said is that deploying the system in pieces is like building a picket fence one picket at a time, over the course of several years. Until the fence is complete, it's not going to keep out the wolves. You may be happy that 10 percent of the pickets have been put up, or 50 percent or 90 percent, but it's not going to keep out danger until it's finished.

But even when it is complete, you still need to test it in realistic ways. With no realistic experience, you really can't assess effectiveness on a percentage basis. That is why my successor, Tom Christie, has said he can't assess GMD system performance. Tom is

correct. With the current test data, there is no technical basis to assess system effectiveness, percentage-wise or any-other-wise.

9. This is also why **U.S. Strategic Command and U.S. Northern Command have not been able to complete their planned GMD Military Utility Assessment, and not - as asserted - because “the system has not yet been fully scrubbed” or because crew training or operational procedures are lacking.**

STRATCOM is responsible for operating the GMD system, and STRATCOM's requirements for an operational system have not been met. Not surprisingly, MDA, which has always taken the position that there is no single architecture for the overall BMDS, is acting a little defensive now that the defense trade press is reporting that STRATCOM needs to know which elements of the system are operationally effective for which missions, and what requirements those elements can meet when operating together as a system-of-systems.

This leaves STRATCOM in an unenviable position, where it doesn't want to criticize the MDA, but is frustratingly going to be held accountable for a system whose performance it has no way of knowing

Meanwhile, MDA officials keep trying to find new words -- residual, rudimentary, incremental, initial, limited -- to define what the capability will be, when the word they could be looking for is “nil.”

Together, all of these issues explain why neither the administration nor the Pentagon will be able to credibly declare that the GMD system is operational, least of all by the end of next week, the goal for deployment set by MDA, nor even by the end of this year. Nor even when all of the interceptors are in place!

10. Last month in Huntsville, Rumsfeld predicted, **“By the end of this year we expect to have a limited operational capability against incoming ballistic missiles.”** Is this true? Unfortunately, no. Last week, MDA officials announced that the third interceptor had been installed at Fort Greely. But even if every single missile silo held an interceptor, still, with the major systems elements missing, with no demonstrated capability to defend against a realistic attack under realistic conditions, and without testing the system the way it is being deployed, it would be misleading to declare even “incremental” operational capability. Because not even “incremental” operational capability -- or “limited” or whatever you wish to call it -- has been demonstrated with the system the way it is being deployed.

Conclusion

To summarize, the GMD system, what used to be called National Missile Defense, is taking billions of dollars from other defense and homeland security priorities (e.g., the war in Iraq), doesn't work, and could be dangerous. If China believes this system actually works, it will likely do just what Russia did during the Cold War and build up

arsenals of hundreds of ICBMs so they can overwhelm our defenses, just as Russia still can do today.

So, with its missile defense story, the MDA is misleading members of Congress, reporters, and just about everybody else. First, it is hoping American voters will believe that Bush has actually fulfilled his campaign promise to build an effective missile defense system that works. But Bush hasn't been able to deliver a system that works because the MDA hasn't been able to deliver a system that works.

Second, the MDA is hoping our allies, countries like Canada, Australia and Japan, believe the system works so that they too will spend billions of dollars on our missile defense hardware.

Third, the MDA is hoping North Korea will believe our missile defense works and thus be deterred from pursuing long-range missiles that might reach the United States.

But, contrarily, the MDA is hoping China will know that our missile defenses don't work, that our missile defenses are a sham, so that China won't build up its nuclear arsenals in response. Today China only has about 20 ICBMs that can reach the United States.

Just a year ago I wrote an article for *Arms Control Today* entitled, "Is Missile Defense on Target?" If I were to write that article again today, I would have to say that the GMD system has fallen even farther behind schedule than it was then, while at the same time the rhetoric and claims being made for the system by its proponents have become more certain and astonishingly misleading. A year ago, we didn't see Bush or Rumsfeld making claims that had already been overtaken by events.

It's time for some straight talk about missile defense, including the scientific and technical challenges which it faces and which, if not solved, will prevent the system from being effective, no matter how much money is spent on heavy construction, re-bar and concrete.

Thank you.