

Congress
of the
United States
House of Representatives

JOHN F. TIERNEY
MASSACHUSETTS
SIXTH DISTRICT



June 22, 2001

The Honorable Christopher Shays
Chairman
Subcommittee on National Security, Veterans Affairs and International Relations
Committee on Government Reform
B372 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Shays:

I was pleased to learn in our conversation earlier today that the subcommittee will make available to the public copies of a report by Philip Coyle, formerly the Director of Operational Testing and Evaluation at the Pentagon. The report was completed during the NMD Deployment Readiness Review (DRR) process in August 2000. By your own order in the subcommittee hearing of September 8, 2000, this report was made part of the public record months ago. Unfortunately, due to the Pentagon's longstanding refusal to deliver this report for the hearing record, it has only come into the subcommittee's possession recently. It is my understanding after speaking to you that copies of the report will be publicly available early next week from both the subcommittee offices, and from individual members.

As you are aware, the report highlights severe deficiencies in the test program, the more alarming of which I have outlined below. In general, the report demonstrates how the program fails to test basic elements of the system and how the tests have been altered to make successful intercepts easier. It is for these reasons that I have worked over the last 8 months to bring this unclassified report into the full light of public attention. Public debate about the cost and capabilities of such a system — and its potential dangers if deployed prematurely — is urgently needed. I applaud you for facilitating such a debate and for continuing to assert the subcommittee's authority to obtain and place on record the report as far back as September 8, 2000 by the Department of Defense witness. I repeat my request that you schedule hearings on this study and its implications as expeditiously as possible.

I. Deficiencies in the Testing Program

The internal study raises fundamental problems with the missile defense testing program. Not only is the program far behind schedule, but it is slipping further. The test program is severely deficient, failing to test basic elements of the system. In fact, the study details how the Pentagon, after numerous failures, actually altered the test program to make it easier. Despite these changes, the program has continued to fail repeatedly.

As you may know, the *Washington Post* reported that the "Bush Administration is considering a crash effort to put into place a rudimentary missile defense system before the end of President Bush's

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Printed on recycled paper.

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17 PEABODY SQUARE
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current term in 2004.”¹ This proposal seems to ignore the testing problems highlighted by the study and appears virtually certain to waste billions of dollars by requiring subsequent alterations when deficiencies manifest themselves after deployment.

The study explains that test failures and schedule slippages make deployment even by 2011 unlikely because “[n]one of the major NMD [National Missile Defense] elements . . . are mature enough to provide an adequate performance evaluation.”² The study contains numerous statements describing the immature status of the program:

Given the immaturity of ground testing, the delays in ground-test capabilities, the limitations in flight testing, and the inadequacy of available simulations, a rigorous assessment of potential system performance cannot be made. That is, no one can reliably predict that the NMD system will perform at the [required] levels.³

The NMD system’s ability to defend all fifty states from attacks . . . can not be satisfactorily assessed, primarily because the simulations that were to demonstrate this with confidence and high fidelity have not developed as planned.⁴

[T]he ability to perform a credible assessment of NMD design maturity is confounded by the current immature state of ground test facilities and models and simulations.⁵

The report finds that no analyst can conclude presently that the system will work, and it describes several ways the system may not work. One of the system’s key technical problems is its inability to defend against decoys. The study considers “discrimination” against countermeasures the system’s greatest challenge:

Discrimination is perhaps the most challenging aspect of national missile defense program. As discussed extensively in open literature, the enemy could employ various types of countermeasures to overwhelm this function.⁶

Decoys that provide a close representation of the RV [reentry vehicle] or modify the RV signature have only been minimally investigated.⁷

¹Steven Mufson and Mary Pat Flaherty, *Missile Defense Speedup Weighed: Implementing System By 2004 Considered*, Washington Post (June 8, 2001).

²Phil Coyle, *Operational Test and Evaluation Report in Support of National Missile Defense Deployment Readiness Review* (Aug. 10, 2000) (hereinafter “Coyle Report”) at 46.

³*Id.* at 42 (emphasis in original).

⁴*Id.* at 4.

⁵*Id.* at 5.

⁶*Id.* at 49.

⁷*Id.* at 57.

Potential adversaries may use a variety of countermeasures, ranging from relatively unsophisticated decoys to more sophisticated measures. Currently, the program includes flight tests with only a single balloon decoy — the simplest of countermeasures. The study warns that the test program “does not consider other simple unsophisticated countermeasures” which are “simple to implement, e.g., tumbling RVs and non-spherical balloons.”⁸ There are also no flight tests against more mature countermeasures that rogue states could purchase or otherwise acquire. According to the study, “the ability to discriminate more sophisticated countermeasures needs special consideration. Discrimination is a high-risk area that if left unresolved could prevent NMD from meeting its requirements.”⁹

By omitting flight tests with countermeasures other than a single balloon, the system could be unable to fulfill another of its core functions — to defend against an accidental or unintended launch. Although a missile accidentally fired from Russia or China most likely will be armed with some of the most sophisticated countermeasures available, the study finds that the flight test program ignores this possibility and foregoes flight tests for these countermeasures. According to the study, “the target suites in flight tests will have at most unsophisticated countermeasures, even though the threat from accidental or unauthorized launches could employ sophisticated countermeasures.”¹⁰

Rather than addressing these fatal errors, the Pentagon has hidden them by dumbing down testing requirements. Over time, the Department has been making flight tests easier rather than more difficult. According to the study:

The target suites flown in IFTs [Integrated Flight Tests] 3, 4, and 5 each contained only two objects — a Medium Reentry Vehicle (MRV) and a Large Balloon — a significant reduction in complexity from the original plan. Target requirements . . . called for nine to ten objects in flight tests IFT-1 through IFT-5, suites that contained both unsophisticated and sophisticated decoys. In 1998, target requirements were pared down to three balloons (one large and two small balloons) and the MRV. Then, in July 1999, less than three months before IFT-3, the target suite was further reduced to two objects, as indicated above.¹¹

Now, instead of discriminating between a reentry vehicle and nine or ten decoys, the system tests only against a reentry vehicle and one decoy — a large balloon that “does not mimic in any way the current test RV.”¹² In fact, the study warns that not even one flight test will include “objects with radar signatures designed to mimic those of the [reentry vehicle].”¹³ This trend was compounded further during a flight test last summer when even the single balloon decoy failed to deploy. According to the study, the

⁸*Id.* at 5.

⁹*Id.* at 49.

¹⁰*Id.* at 19.

¹¹*Id.*

¹²*Id.* at 53.

¹³*Id.* at 44.

balloon “was never deployed because of some unknown failure of the deployment mechanism.”¹⁴

The Department also has been providing interceptors with key discrimination information ahead of time. As the study explains, interceptors were “provided with detailed information about the target suite — required to execute the discrimination algorithm — before the flight test was performed.”¹⁵ Because the system will not have the benefit of advance information once deployed, the study recommends that “[r]ehearsed engagements with *a priori* knowledge of target complex, target trajectory, and time of launch need to be discontinued during operational testing.”¹⁶ Despite the need for more rigorous testing, the study finds that “there are no plans as yet to withhold detailed information about target signatures in an intercept test.”¹⁷

In another example of flawed testing, the study criticizes the software used for simulations. According to the study, the contractor’s software suffers from the same drawbacks as the flight tests — an unfounded reliance on unrealistic and overly optimistic parameters:

Boeing will provide users with canned scenarios, including fixed launch points, aim points, ICBMs, debris, and apogees. The Operational Test Agencies had been planning to run hundreds of digital simulation scenarios, varying such parameters as raid size, trajectories, atmospherics, debris, nuclear effects, threat launch and impact points, threat types, and Penetration Aids (PENAIIDS). [The simulator] will not have the flexibility to support such studies.¹⁸

According to the study, the current testing program has no plans to consider other, extremely basic elements of the system, such as conducting flight tests with multiple targets or interceptors, even though “multiple engagements are expected to be the norm.”¹⁹ Such testing is critical for discerning “unanticipated synergistic effects” between simultaneously deployed interceptors.²⁰ The study concludes that “many questions or issues simply cannot be resolved from the testing of 1-on-1 engagements.”²¹ Again, the study criticizes the current test program for its lack of realism and its inability to provide useful assessment information:

Since such engagements are expected to be common during NMD missions, this capability will need to be demonstrated in an integrated flight test before IOC [Initial Operational Capability].

¹⁴*Id.* at 28.

¹⁵*Id.* at 44.

¹⁶*Id.* at 54.

¹⁷*Id.* at 44 n.29.

¹⁸*Id.* at 35-6.

¹⁹*Id.* at 20.

²⁰*Id.*

²¹*Id.*

Such engagements are currently not included in the defined test plan.²²

II. Potential Security Risks of Premature Deployment

In addition to documenting deficiencies in the testing program, the study also describes security dangers that could arise from prematurely deploying a technically immature system. One problem raised in the study relates to a phenomenon described as “phantom tracks:”

Phantom tracks arise when radar coverage . . . transitions from one radar to a second (known as “handover”), and the [system] mistakenly interprets the new radar returns as originating from a second R.V.²³

In other words, the track of the “old” threat object splits into two tracks thereby creating a phantom track.²⁴

When this occurs, according to the study, the system “automatically allocate[s] interceptors against this phantom object.”²⁵ The study explains that the system is designed to launch approximately five interceptors for every incoming warhead. It also explains how operators engaged in these simulations were unsuccessful in taking emergency actions: “When NMD operators believed that interceptors were allocated against phantom tracks, they tried a variety of techniques to override the automated battle manager.”²⁶ According to the study, this condition was “particularly frustrating” and made “NMD operators anxious” because “there was no tool that could definitively warn operators when a phantom track appeared.”²⁷ The study concluded: “Although such actions should have worked, they were unsuccessful in all cases. The system simply was not behaving according to operator actions.”²⁸

One can imagine the potential hazards that could arise in future deployment scenarios if the United States launches multiple interceptors against missiles that do not exist. One immediate danger in these types of situations is that adversaries may interpret these launches as a hostile first strike and respond accordingly.

Many countries already have expressed fear that the United States missile defense system is in fact designed for offensive purposes. Some have suggested that they will respond to United States deployment by placing their arsenals on hair-trigger alert. With such heightened tensions, system

²²*Id.* at 53.

²³*Id.* at 48.

²⁴*Id.* at 33.

²⁵*Id.*

²⁶*Id.* at 34.

²⁷*Id.*

²⁸*Id.* (emphasis added).

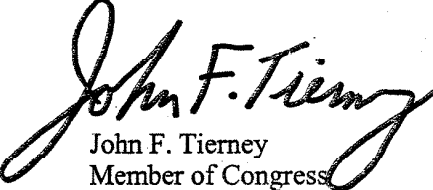
malfunctions could have potentially catastrophic consequences. Yet the Administration has publicly and repeatedly asserted that it will move ahead to deploy a "rudimentary" system even sooner than expected. The *Washington Post* reported these comments from an Administration official:

"It is a simple question: Is something better than nothing?" a senior defense official said. "The president and the secretary [of defense] have made it pretty clear they believe that some missile defense in the near term is in fact better than nothing."²⁹

This statement rests on two underlying assumptions: (1) that "something" in fact works; and (2) that deployment will not subject the country to even greater security dangers. As the study demonstrates, the system's effectiveness is not yet proven, even in the most elementary sense. The study also raises grave concerns regarding disturbing side-effects, such as uncontrollable launches and their attendant risks to world security.

The costs of ignoring findings such as these could be quite significant, and the issues raised clearly need to part of the public debate on this subject. I thank you for your work to bring these issues to light by conducting hearings and, now, by completing the public record with the filed report. I urge you, once again, to hold public hearings to review its contents and implications for the NMD program. At such hearings, I would ask that qualified scientists not currently associated with the Department of Defense be asked to testify and provide their expert opinions on matters pertaining to the testing process to date and as projected.

Sincerely,



John F. Tierney
Member of Congress

JFT:ds

cc. Hon. Henry A. Waxman

²⁹*Washington Post*, *supra* note 8.