

**Union of Concerned Scientists
Technical Working Paper**

**The Target Set for
Missile Defense Intercept Test IFT-9**

David Wright

11 October 2002

Contents

Introduction	1
Test Conditions for IFT-9	2
The Target Set for IFT-9	3
Change in testing plans: No tumbling warhead for two years	6
Figure 1: Targets for Integrated Flight Tests (May 2000)	8
Appendix: Misleading Statements by Pentagon Officials about IFT-8	9
Attachment 1: 19 March 2002 Letter to Wolfowitz	11
Attachment 2: 13 June 2002 Response from Kadish	13

The Target Set for Missile Defense Intercept Test IFT-9

David Wright¹

Executive Summary

In May 2002, the Bush administration announced that it would classify information about the target sets of future missile defense tests. While the Pentagon has not released detailed information about the upcoming test (IFT-9) scheduled for October 14, this paper presents what can be learned about the test from public statements and from a technical analysis of previous tests.

Based on this information, we conclude that the decoys used in the test will appear significantly different to the kill vehicle's sensors from the mock warhead, so that the mock warhead will be easily distinguished from the decoys. As a result, the test will not be a demanding or realistic test of the ability of the defense to discriminate the warhead from decoys in realistic scenarios—which remains a key issue in the development of a missile defense system.

Introduction

The next flight test of the ground-based midcourse missile defense system is currently scheduled for the evening of October 14, 2002. This test, designated IFT-9, will be the ninth integrated flight test and the seventh intercept attempt.

In May 2002, the Bush administration announced that it would classify information about the target sets of future missile defense tests.² The upcoming test is therefore the first test for which very little information has been released. Despite the lack of official information, this paper presents what can be learned about the test from public statements and from a technical analysis of previous tests.

We show that, as in the previous tests, the kill vehicle should be able to easily distinguish the mock warhead from the decoys included in the target set, so that the test will not be a demanding or realistic test of discrimination.

In particular, based on information from previous tests, we expect that:

- the large balloon decoy and final missile stage will be about three times as bright as the warhead
- the two small balloon decoys will be roughly half as bright as the warhead.

¹ David Wright is Co-Director and Senior Scientist in the Global Security Program at the Union of Concerned Scientists in Cambridge, MA and a Research Scientist at the Massachusetts Institute of Technology Security Studies Program.

² Kerry Gildea, "MDA Classifies Missile Defense Flight Test Target, Countermeasure Data," *Defense Daily*, 15 May 2002.

While using such decoys may be appropriate for early stages of testing, the Pentagon should make clear that these tests do not provide a meaningful test of discrimination that is relevant to real-world situations. While adding decoys of this type makes the tests somewhat more complex, it does not create a more demanding discrimination task.

The new classification rules will significantly restrict the amount of information available about the target sets and other details of future tests, and are also expected to restrict the information available about what actually occurs during the tests.

While the Missile Defense Agency (MDA) argues that this new classification is needed to protect sensitive information about the missile defense system it is developing, experts disagree. For example, Philip Coyle, the former Director of Operational Testing and Evaluation at the Pentagon, has written that

“the current test program is not giving away any secrets; nor is there any danger of that for years to come. The new classification policy is not justified by either the progress in tests so far or by the realism of the tests.”³

In the past, the type of information that will no longer be available has been extremely valuable in assessing what the tests demonstrated—and did not demonstrate—about the status of the technology being developed. The limitations and artificialities of the current testing program have been analyzed in a series of UCS reports,⁴ and are summarized graphically at http://www.ucsusa.org/security/BMD_test.html

A key concern raised by the new restrictions on information is that the Pentagon has misrepresented previous tests or withheld information about them that is important for understanding the implications of the tests. For example, following test IFT-8, Deputy Secretary of Defense Paul Wolfowitz made incorrect and misleading statements about the target set in that test, which neither he nor the Missile Defense Agency have corrected. This is discussed in the Appendix.

Test Conditions for IFT-9

In most ways, the upcoming test (IFT-9) is expected to be essentially a repeat of previous tests.⁵ The interceptor and target will continue to use the same trajectories as in the previous tests. The target will be launched from Vandenberg Air Force Base in California on a modified Minuteman II missile. The kill vehicle will be launched from Kwajalein Atoll on a two-stage surrogate booster (called the Payload Launch Vehicle) that is considerably slower than the three-stage operational booster that is under development. As a result, the closing speed in the test will again be much slower than would be expected in actual engagements. The warhead will again be

³ Philip Coyle, “Why The Secrecy Shield?” *Washington Post*, 11 June 2002.

⁴ These reports are available at <http://www.ucsusa.org/security/testing-main.html>

⁵ L. Gronlund, D. Wright, and S. Young, “An Assessment of the Intercept Test Program of the Ground-based Midcourse National Missile Defense System,” Union of Concerned Scientists, 30 November 2001.

equipped with a C-band transponder that will give the defense the information on its position that is used to calculate where and when to launch the interceptor. And the attacking missile is expected to again release the objects in the target set in a special alignment so that they will be simultaneously in the field-of-view of the kill vehicle's sensor.

Moreover, as in the previous tests, discrimination will rely on the defense having detailed prior knowledge about how all the objects will appear to the defense sensors—an assumption that is highly unrealistic.

Many of the limitations and artificialities of the testing program may be appropriate at this early stage of development of the system. However, because of these limitations and artificialities the tests say essentially nothing about the capability of the system against a real attack in a real operating environment.

The Target Set for IFT-9

The target set in test IFT-9 will reportedly consist of five objects:

- a new or modified mock warhead
- a large, spherical balloon decoy (1.7 meter diameter)
- two small, spherical balloon decoys (0.6 meter diameter)
- the final stage of the target missile, called the Multi-Service Launch System (MSLS), which releases the warhead and decoys.

The three balloon decoys will reportedly be identical to those flown in the previous test in March 2002 (IFT-8).⁶ Moreover, it is expected that the bus that releases the objects in the target set (called the Multi-Service Launch System or MSLS) will also be the same as that used in previous tests.

Quantitative information about the appearance of these objects is available from data gathered in previous tests, some of which has become available as a result of the controversy over the initial integrated flight test, IFT-1a.

As noted above, the discrimination technique being developed requires that the defense system know in advance how the objects in the target set will appear to the kill vehicle's sensors, since the kill vehicle will compare the infrared signals (called here the "brightness") of these objects to one another and to pre-programmed information on the expected appearance of each object.⁷

⁶ Thomas Duffy, "MDA Will Use Surrogate NMD Booster For At Least Four More Tests," *Inside the Pentagon*, 2 May 2002.

⁷ According to a recent report by the US General Accounting Office (*Missile Defense: Review of Results and Limitations of an Early National Missile Defense Flight Test*, GAO-02-124, February 2002), the defense is provided with a set of "reference data," which is "a collection of predicted characteristics, or features, that target objects are expected to display during flight" (p. 5, footnote 14). The discrimination software then tries to identify the various target objects "by comparing the target signals collected from each object at a given point in their flight to the target signals it expects each object to display at that same point in the flight" (p. 20). Thus, the discrimination methodology used in the tests assumes that the defense will have detailed information—in advance of an attack—about the appearance of the warheads and decoys used by the attacker. To discriminate, the defense will then

We discuss the appearance of the objects in the target set below.

Mock warhead

The primary change between IFT-8 and IFT-9 is that the upcoming test will use a mock warhead that is described as “smaller” than that used in previous tests. The mock warhead used in the previous tests is referred to as a “medium reentry vehicle” (MRV), and is described as being “less than two meters in length and less than one meter in diameter across the base.”⁸

Gen. Kadish, Director of the Missile Defense Agency, was quoted as saying that IFT-9 “will use a surrogate enemy missile warhead smaller than that used in previous tests.” He stated that the new mock warhead has “a different set of characteristics” than the MRV and said, “These targets are relatively small. It will be difficult for the system in different ways.”⁹

It is not clear exactly what these statements mean about the target. They may mean that the physical size of the warhead is slightly smaller than the MRV used in previous tests, or that the same warhead is being used but with a different surface coating that decreases the infrared signature that would be detected by the sensors on the kill vehicle. In either case, it appears that the changes will not be substantial, and as discussed below, the warhead will continue to be readily distinguishable from the decoys in the target set.

Large balloon decoy

The large spherical balloon decoy that was used in tests IFT-6, 7, and 8 has a diameter of 1.7 meters. It appeared about three times brighter to the kill vehicle’s infrared sensors than did the mock warhead used in those previous tests, so it will appear even brighter relative to the “smaller” mock warhead that will be used in IFT-9, and will be easily distinguished from it.

The large balloon decoy used in the fly-by tests (IFT-1a and IFT-2) and the first three intercept tests (IFT-3 through IFT-5) was 2.2 meters in diameter.¹⁰ In these tests, the balloon appeared about six times brighter to the kill vehicle’s infrared sensor than did the “medium RV” (MRV) used in those tests.¹¹ For this reason, the kill vehicle could easily distinguish the balloon from the

compare what its sensors see with the data it has stored in its computer and attempt to find a unique match that will identify the warhead. (For more information on the planned discrimination technique, see David Wright and Lisbeth Gronlund, “Decoys and Discrimination in IFT-8,” Union of Concerned Scientists, 14 March 2002. Available at <http://www.ucsusa.org/security/Decoys.pdf>.)

⁸ Michael Sirak, “Next NMD Flight Test to Feature Less-Complex Target Suite,” *Inside Missile Defense*, 29 December 1999. This article states that the mock warhead “will be equipped with motion and attitude control instrumentation, a photonic hit indicator to determine the impact point of the collision with the NMD kill vehicle, and a Global Positioning System translator.”

⁹ Tony Capaccio, “Lockheed Ship Radar Gets First Use In Next Missile Defense Test,” Bloomberg.com, 19 August 2002.

¹⁰ The 2.2 meter balloon was an existing decoy that BMDO had in its inventory, and BMDO reportedly intended to switch to the 1.7 meter balloon when it depleted its inventory of the old one. In the original plans, the new balloon was to have been used first in IFT-7. However, the 2.2 meter balloon used in IFT-5 did not inflate properly, and BMDO may have decided not to use the last balloon of this size because of reliability concerns.

¹¹ This figure comes from comparing the central values of the predicted one-sigma ellipses for the infrared intensity of the objects for one of the sensor bands, as shown in Figure 5 of the POET Study 1998-5 (M-J. Tsai, L. Ng, G. Light, C. Meins, “Independent Review of TRW Discrimination Techniques, Final Report”); Theodore Postol, personal communication, February 2002.

reentry vehicle. Indeed, a Pentagon briefing about IFT-3 stated that the kill vehicle first saw the large balloon by itself and recognized that it was the balloon rather than the warhead. This means that “discrimination” was not even based on comparing the relative brightness of the two objects, but on the absolute brightness of the balloon itself.¹²

The 2.2-meter balloon apparently had a set of stripes on its surface so that its brightness would fluctuate slightly as it rotated (see Figure 1). Such fluctuations are apparently intended to appear similar to those that would arise from the motions (such as nutation or precession) of a spin-stabilized warhead. For all of the tests conducted so far, the mock warhead has been spin-stabilized.

Unlike the 2.2-meter balloon, the 1.7-meter balloon apparently has a uniform surface rather than stripes (see Figure 1). If this balloon has the same average surface properties as the original balloon, then based on the ratio of cross-sectional areas of the two balloons, it would appear more than three times brighter than the MRV used in those tests.

Small balloon decoys

Test IFT-8, conducted in March 2002, included two small spherical balloon decoys that were apparently similar to those that were used in the fly-by tests IFT-1A and IFT-2.¹³ The balloons used in the fly-by tests, called the canisterized small balloons (since they were released from canisters), were 0.6 meters in diameter.¹⁴ These balloons were one-half to one-third as bright as the MRV used in IFT-1A.¹⁵ They apparently had different surface coatings from one another (see Figure 1) and stripes on their surfaces to create a fluctuating signal.

While the warhead to be used in the upcoming test will be somewhat less bright than previous warheads, it appears likely that it will still be significantly brighter than these two balloons, and will continue to be easily distinguished by the kill vehicle.

That these balloons were included in IFT-8 is not surprising, for several reasons.

First, adding these small balloons was the next step in the target selection plan that was developed in mid-2000. The chart in Figure 1 shows that the first four intercept tests (IFT-3 through 5) were intended to use the MRV and a single large balloon, as they in fact did. For IFT-6, the chart shows that the plan was to add to the target suite the two small balloons that were used in the fly-by tests. However, the kill vehicle did not separate from the interceptor booster in IFT-5, and the test was repeated as IFT-6, so the two small balloons were not used in that test. Following that test, BMDO announced that the next test would be a repeat of IFT-6, so IFT-7 again used only a single large balloon in addition to the mock warhead.

¹² Special Defense Department Background Briefing on Upcoming National Missile Defense System Test Launch, 14 January 2000.

¹³ Lt. Col. Rick Lehner, personal communication, March 2002.

¹⁴ Sirak, “Next NMD Flight Test.” Unlike the large balloon, the small balloons reportedly contain “sophisticated instruments that collect flight data.”

¹⁵ Figure 5, POET Study 1998-5 (see footnote 11). If these balloons had roughly the same surface coating as the 2.2 meter balloon, then their brightness relative to that balloon would suggest they had a diameter of 0.5-0.6 meters, in good agreement with their actual size.

Thus, the next step according to the chart in Figure 1 would have been to include in IFT-8 the target suite originally planned for IFT-6 (with the 2.2 meter balloon replaced by the 1.7 meter balloon, as discussed above).

Second, by using balloons similar to the ones used in the fly-by tests, the Pentagon would have data on the appearance of these objects that it had collected in those tests. Having such data is important since the discrimination method used by the kill vehicle is to match what it sees in the test to data it has been given in advance.

Third, because these small balloons are expected to appear several times less bright than the mock warhead to the kill vehicle's infrared sensor, the kill vehicle should have a relatively easy time distinguishing them from the MRV. As Gen. Kadish and others have stated,¹⁶ the Pentagon wants to keep the discrimination task relatively simple at this early stage of testing.

Multi-Service Launch System (MSLS)

Based on information from the fly-by test IFT-1A, the MSLS appears about three times as bright as the MRV to the kill vehicle's infrared sensor, and should therefore also be easy for the kill vehicle to distinguish from the warhead in IFT-9.¹⁷

Change in testing plans: No tumbling warhead for two years

It is interesting to note that this test apparently does not involve a tumbling warhead. According to the testing plan developed under the Clinton administration, a tumbling warhead was expected to be included in the testing program around this time (see Figure 1).

In response to a question in Congressional testimony in June 2002, Gen. Kadish stated that a test with a tumbling warhead is now not expected for two years or longer. Kadish said:

“...we're looking very carefully at when exactly we can do a tumbling decoy, and my intention would be if at all possible, to do it before we get the test bed operational. Whether that's in September '04 or later the -- what's interesting about that tumbling decoy or that tumbling RV, however, is that we're going have to design that. Our systems don't do that right now. So that's another complicating factor in this process. You just don't go out and tumble those things reliably enough for a test.”¹⁸

A tumbling warhead would present a significantly different signal to the kill vehicle, since its motion would be expected to create significant fluctuations in the brightness of the mock warhead.

¹⁶ Robert Wall, “Missile Defense's New Look To Emerge This Summer,” *Aviation Week & Space Technology*, March 25, 2002, p. 28.

¹⁷ Figure 5, POET Study 1998-5 (see footnote 11).

¹⁸ Joint Hearing of the Military Procurement Subcommittee and the Military Research and Development Subcommittee of the House Armed Services Committee, 27 June 2002.

Such a fluctuating signal would be very easy to distinguish from the relatively uniform signals of the decoys currently being used, but could be very difficult to distinguish from decoys that give a similarly varying signal by design or otherwise. Three cone-shaped decoys that gave signals similar to a tumbling warhead were included in the target set for the fly-by tests IFT-1a and IFT-2 (two Medium Rigid Light Replica (MRLR) decoys and one Small Canisterized Light Replica decoy (SCLR)—see Figure 1).

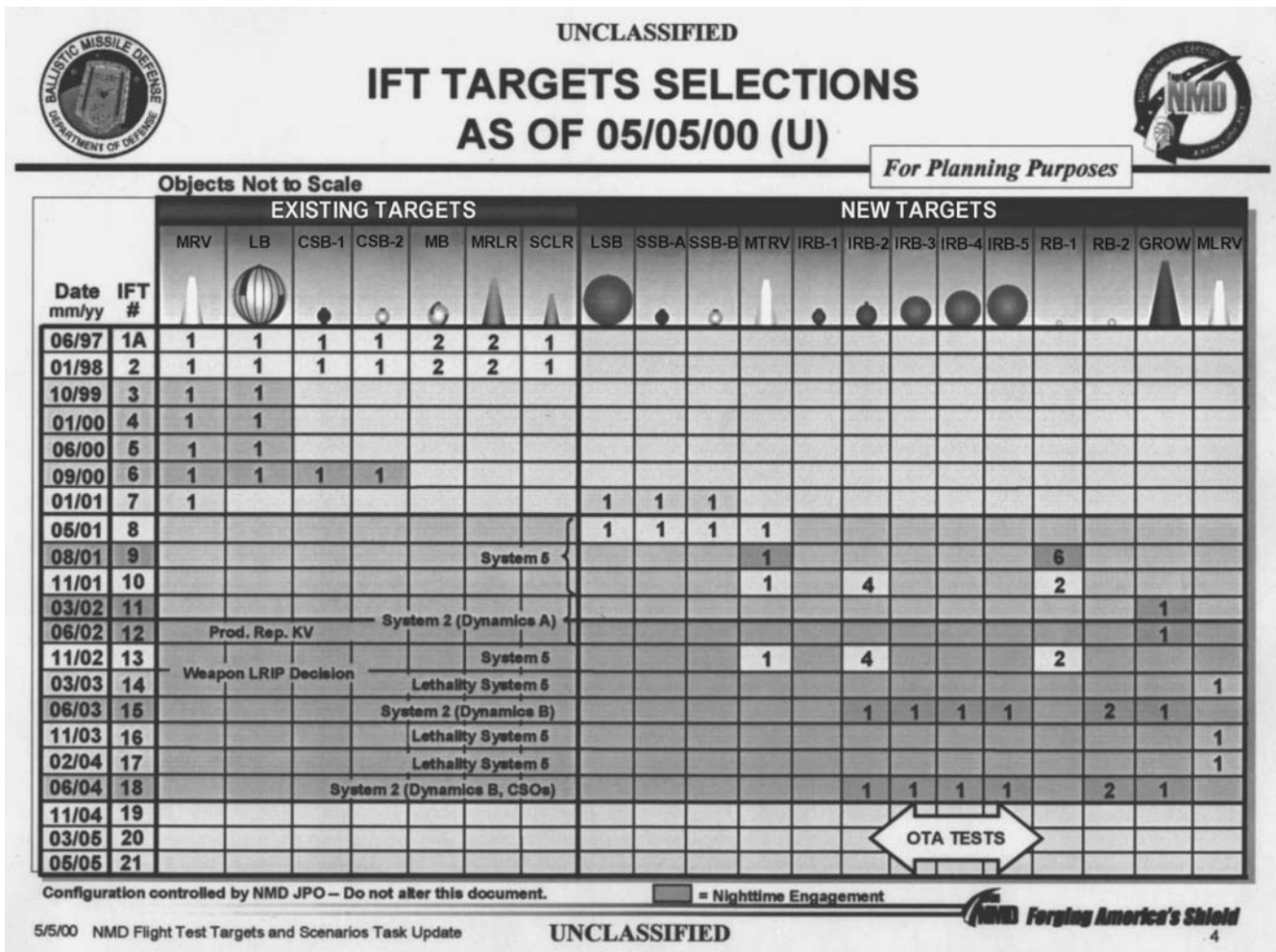
Figure 1: Targets for Integrated Flight Tests (May 2000)

This chart shows the planned target suites for tests of the ground-based midcourse system planned by the Pentagon as of May 2000. It appeared in the New York Times in June 2000 (William Broad, "Antimissile Testing Is Rigged To Hide a Flaw, Critics Say," *New York Times*, 9 June 2000, p. A1).

According to this chart, several of the objects used in the fly-by tests—the medium balloons and the medium and small replica decoys—were dropped from all future tests. One possible motivation for removing these targets is that the analysis of IFT-1A showed that the medium balloon could appear to the sensors to be very similar to the mock warhead that is being used in the current tests, and that tumbling replica decoys could appear very similar to a tumbling warhead. Notice in particular that according to the plans in the chart, those tests involving a tumbling warhead, which could lead to large fluctuations in brightness, would contain only spherical decoys, which would be expected to have much smaller fluctuations (if the surface was not uniform) or no fluctuations (if the surface was uniform).

Acronyms:

- MRV—Medium Reentry Vehicle (RV)
- LB—Large Balloon
- CSB—Canisterized Small Balloon
- MB—Medium Balloon
- MRLR—Medium Rigid Lightweight Replica
- SCLR—Small Canisterized Lightweight Replica
- LSB—Large Spherical Balloon
- SSB—Small Spherical Balloon
- MTRV—Medium Tumbling RV
- IRB—Infrared Balloon
- RB—Radar Balloon
- GROW—Generic Rest-of-World RV
- MLRV—Medium Lethality RV



Appendix: Misleading Statements by Pentagon Officials about IFT-8

It is important that Congress and the public have clear, accurate assessments of the testing program for the midcourse missile defense system—assessments that allow them to understand what the tests indicate about the maturity of the technology and the likely effectiveness of a deployed missile defense system. However, the Pentagon’s new classification rules on missile defense tests may preclude such accurate assessments from being made publicly available.

Unfortunately, there are several cases in which Pentagon officials withheld information, made misleading statements, or mischaracterized past tests. For example, following the first intercept test (IFT-3) the Pentagon did not reveal that there had been anomalies in the test that led to the kill vehicle initially being unable to find the mock warhead.¹⁹ This information was made public over three months after the test, and only as a result of outside scrutiny of the tests.

Similarly, the Pentagon did not reveal an anomaly in IFT-6 with the X-band radar, which became overwhelmed with data and locked up 64 seconds before intercept.²⁰ This incident also became public due to outside scrutiny of the tests.

These two test anomalies may or may not indicate significant problems with the technology. However, the fact that the Pentagon chose not to report this information, despite holding detailed press briefings after both of these tests, raises serious questions about whether the Pentagon is committed to full disclosure of all relevant information and to accurate assessments of the test results. In these two cases, the information was only made public after outside scrutiny, which will be made much more difficult—if not impossible—by the Pentagon’s new classification rules on missile defense tests.

Wolfowitz statement concerning IFT-8

An additional example of Pentagon misrepresentation of test results concerns test IFT-8. The day following that test, Deputy Secretary of Defense Paul Wolfowitz appeared on CNN and stated, “I’ll say right off the bat before some critic discovers it, this was not a, quote, ‘realistic’ test of exactly what intercepts would have to do. But it’s the first time we have had anything that looked like a decoy warhead, and it picked out the real warhead from the decoys. They’re not as good a decoy as we would expect to face later.”²¹ (emphasis added)

Mr. Wolfowitz’s statement is important since it comes from a high-ranking administration official—the number-two man at the Pentagon—and implies that the system had successfully distinguished between decoys and warhead under a demanding set of test conditions. Moreover, by stating that this was the “first time” such a test had taken place, Mr. Wolfowitz implies that this test represented a marked improvement in realism over previous tests. Since past tests have

¹⁹ James Glanz, “Flaws Found In Missile Test That U.S. Saw As A Success,” *New York Times*, 14 January 2000.

²⁰ Peter Pae, “Crucial Radar Failed Missile Defense Test,” *Los Angeles Times*, 18 July 2001; James Dao, “Missile Interception Test Was Hit-and-Miss, Pentagon Reports,” *New York Times*, 19 July 2001.

²¹ Interview on CNN’s Novak, Hunt and Shields, 16 March 2002. The first two sentences of this quote were reported in an Associated Press story that ran in many newspapers (Matt Kelley, “Analysts: Missile Shield Success Just Early Step,” 17 March 2002).

not included a demanding test of discrimination, and such discrimination will be essential if the system is to be effective, Mr. Wolfowitz's claims would be important—if true.

However, Mr. Wolfowitz's statement is wrong, as shown by an analysis of the infrared signatures of the decoys used in test IFT-8, as we discussed in a previous paper.²² That paper concludes that all of the objects in the target set would be easily distinguishable: the large balloon decoy and final missile stage would appear three times brighter than the mock warhead, and the two small balloon decoys would appear two-to three-times less bright than the warhead.

Moreover, Mr. Wolfowitz's statement was contradicted by statements made by Missile Defense Agency Director Kadish shortly after the test. *Aviation Week and Space Technology* reported an interview with General Kadish about the significance of the test in the following way:

“The Pentagon has tried to explain the relative significance of the added balloons. ‘It adds more complexity to the overall test process as well as [presenting a] data-gathering opportunity for the kill vehicle; and it challenges [the EKV] a little bit,’ Kadish said. However, he stressed that the balloons were not trying to spoof the EKV. In fact, what the MDA really has been trying to accomplish is gather data on balloons of different sizes rather than perform ‘discrimination’ between them and the warhead, he noted.”²³

On March 19, 2002 UCS faxed a letter to Mr. Wolfowitz asking for clarification of his remarks on CNN (see Attachment 1). We received a response to that fax on June 15, 2002 from Gen. Kadish, who wrote on behalf of Mr. Wolfowitz (see Attachment 2).

Gen. Kadish's response did not answer the questions raised in the UCS letter, and his response is misleading. The clear implication of Mr. Wolfowitz's statement on CNN is that the decoys looked similar to the mock warhead used in that test. This is specifically the point UCS asked him to clarify, since it appears not to be true.

Yet in his response, Gen. Kadish states that Mr. Wolfowitz's statements “are an accurate representation of IFT-8” because the balloon decoys had “infrared signatures that more closely resembled a class of reentry vehicles.”²⁴ What is relevant, of course, and what UCS asked, is whether the decoys resembled the particular warhead used in IFT-8, not a theoretical “class of reentry vehicles.”

This lack of clarity from officials at the highest level of the missile defense program should serve as a warning to Congress and the public that the information they receive about the program in the future may be incomplete or misleading.

²² Wright and Gronlund, “Decoys and Discrimination in IFT-8.”

²³ Wall, “Missile Defense's New Look.”

²⁴ Gen. Kadish has previously discussed this idea. In a press briefing on 30 November 2001, just before test IFT-7, he stated “these are class-representative type of decoys and warheads. What that means is, is that the large balloon does not, and there is no intention of, actually replicating the warhead signatures that are in this particular target warhead. It's a class of warheads and a class of decoys. So it gives us valuable information. But I want to make sure everybody understands, they're not operational realistic in the sense that the balloon on this flight test is supposed to replicate the warhead on this flight test. That's not the case. But it's a very valuable set of information that we have to go against.”

Attachment 1

March 19, 2002

Mr. Paul Wolfowitz
Deputy Secretary of Defense

Fax: 703-697-7374
2 pages total

Dear Mr. Wolfowitz,

On March 16, after the recent intercept test (IFT-8) of the ground-based midcourse defense system, you appeared on CNN's Novak, Hunt and Shields and stated:

“I'll say right off the bat before some critic discovers it, this was not a, quote, ‘realistic,’ test of exactly what intercepts would have to do. But it's the first time we have had anything that looked like a decoy warhead, and it picked out the real warhead from the decoys. They're not as good a decoy as we would expect to face later.”

While you indicated that the test was less than realistic, you nevertheless made a strong claim about the new decoys used, stating that they “looked like a decoy warhead” and that this was the first time such decoys were used. Your statement clearly implies that the new decoys in this test appeared sufficiently similar to the mock warhead to present the kill vehicle with a stressing discrimination task.

However, our analysis, “Decoys and Discrimination in Intercept Test IFT-8,” (available on the web at <http://www.ucsusa.org/security/Decoys.pdf>) shows that the two small decoys added to this test were as different in appearance from the warhead as was the large balloon decoy that has been used in the previous tests. Assuming that the balloons inflated correctly, all three of the decoys would have infrared signatures that were quite different than that of the mock warhead. We estimate that the large balloon would have been three times brighter than the warhead, and the two small balloons would have been two to three times dimmer than the warhead. Therefore, all three decoys would have been readily distinguishable from the mock warhead by the sensors on the kill vehicle. This would not have presented a stressing discrimination task.

Moreover, because all of the decoys are spherical and the mock warhead was conical, the decoys would have appeared quite different from the warhead to the ground-based radar that was sending updates to the kill vehicle.

Of course, it is to be expected that tests conducted at this early stage of development will have many limitations and artificialities. But it is important that members of Congress and the public have a clear understanding of these limitations so that they can understand what these tests do—and do not—imply about the maturity of the technology and its readiness for deployment. Because your comments were widely quoted by the media, it is particularly important that you clarify this issue.

We are therefore requesting a clarification of your remarks. In particular, did the small balloons in IFT-8 appear similar enough to the mock warhead to make the discrimination task significantly more stressing than that of previous tests? More specifically, in what way and to what extent did the two small balloon decoys “look like” the warhead in the test?

Sincerely,

David Wright
Senior Staff Scientist
dwright@ucsusa.org

Lisbeth Gronlund
Senior Staff Scientist
lgronlund@ucsusa.org

Attachment 2



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301-7100

JUN 13 2002

Dr. David Wright
Dr. Lisbeth Gronlund
Union of Concerned Scientists
Two Brattle Square
Cambridge, MA 02238-9105

Dear Dr. Wright and Dr. Gronlund:

The Deputy Secretary of Defense, The Honorable Paul Wolfowitz, has asked me to reply to your March 19, 2002, letter concerning his televised comments regarding Integrated Flight Test-8 (IFT-8) of the Ground-based Midcourse Defense element.

The Deputy Secretary's remarks, as quoted in your letter, are an accurate representation of IFT-8. The balloons did have infrared signatures that more closely resembled a class of reentry vehicles. We are still early in the process of testing this capability. Our tests against countermeasures will be increasingly more complicated in the future, and we plan to test more stressing engagement scenarios in future threats.

If you have additional questions, please contact my Director of External Affairs, Ms. Pamela Bain, at 703-697-8472.

Sincerely,


RONALD T. KADISH
Lieutenant General, U.S. Air Force
Director