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\$1 beyond the greater New York metropolitan

Antimissile Testing Is Rigged To Hide a Flaw, Critics Say

By WILLIAM J. BROAD

Citing the Pentagon's own plan, critics of the proposed antimissile defense and even some military experts say all flight tests of the \$60 billion weapon have been rigged to hide a fundamental flaw: The system cannot distinguish between enemy warheads and decoys.

In interviews, they said that after the system failed to achieve this crucial discrimination goal against mock targets in its first two flight tests, the Pentagon substituted simpler and fewer decoys that would be easier for the antimissile weapon to recognize.

The Pentagon's plan was obtained by Theodore A. Postol, an arms expert at the Massachusetts Institute of Technology who opposes the weapon. It covers the four tests that have taken place as well as future tests up to the system's projected deployment in 2005.

Other technical experts who have seen it, including both antimissile and decoy designers, concurred with his criticism, as did a senior government official who has examined the Pentagon's testing plan.

"It is clear to me," said the official, who spoke on condition of anonymity, "that none of the tests address the reasonable range of countermeasures," or decoys that an enemy would use to try to outwit an antimissile weapon.

While acknowledging the plan Dr. Postol obtained as authentic, Pentagon officials strongly defended the testing program. Lt. Gen. Ronald T. Kadish of the Air Force, director of the Pentagon's Ballistic Missile Defense Organization, denied that his program had engaged in any deception or dumbing down. General Kadish said that the testing program would be extremely useful and that

the resulting weapon would defeat crude warheads launched by inexperienced nuclear powers that might emerge in the future, like Iran, Iraq or North Korea.

Though unclassified, the plan is considered sensitive. Dr. Postol said he obtained it from a Pentagon source he would not identify.

Dr. Postol, who is preparing a report for the White House on what he sees as the plan's flaws, made his argument on Monday at a meeting of the State Department's advisory board on arms control, along with another antimissile critic, Nira Schwartz. Dr. Schwartz, a former senior engineer at the military contractor TRW, lost her job after challenging the claims the company made about the weapon's ability to distinguish warheads from decoys.

Dr. Postol, who worked in the Reagan administration on such issues as antimissile defense, says that the Pentagon has ignored earlier criticism like Dr. Schwartz's and instead put flawed testing methods at the heart of all its plans to develop and build a weapon. The upshot, he says,

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Critics Maintain Pentagon Has Been Rigging Antimissile Tests to Hide a Crucial Flaw

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is that any real attacker — no matter how inexperienced — would be able to easily outwit the weapon.

Pentagon officials “are systematically lying about the performance of a weapon system that is supposed to defend the people of the United States from nuclear attack,” Dr. Postol said in an interview.

General Kadish conceded that “this technology is difficult.” As a result, he said, his organization’s approach “is to walk before we run, with increasingly stressful decoys to match what we expect” by way of enemy threats. “When we get to that end point,” he said, “we’ll have the confidence to put this on alert.”

But far from increasing the complexity of future tests, the Pentagon has made them easier, military experts who examined the testing plan agreed. Two rigorous experiments, in 1997 and 1998, to have the weapon simply observe the targets, they said, have been followed by interception tests designed to make discriminating between decoys and mock warheads as easy as possible.

“They did a good fox trot for the first couple of tests and then slowed down to a crawl,” said Bob Dietz, a retired former designer of warhead decoys for American missiles. “You have to ask why they don’t build better decoys. They’ve always said they’d get better with time.”

Michael W. Munn, a retired scientist for the military contractor Lockheed and a pioneer in designing and testing antimissile weapons, said: “The only way to make it work is to dumb it down. There’s no other way to do it. Discrimination has always been the No. 1 problem, and it will always remain that way.”

He said manipulation of antimissile flight tests was nothing new. “It’s always been a wicked game,” Mr. Munn said.

The Pentagon itself is sharply divided on the testing issue. In February, Philip E. Coyle III, the Defense Department’s director of testing and evaluation, faulted the antimissile tests as insufficiently realistic to make decisions about moving from research to building the weapon.

The 16 interception test flights called for in the development program would cost at least \$1.6 billion, Pentagon experts say. So far, the two observation tests have been followed by two interception attempts, the first successful, the second a failure. Another test is scheduled in July.

The Clinton administration plans to make a decision later this year on whether to start building the antimissile system, which is to shield the United States from limited missile attacks by so-called rogue states.

Dr. Postol, a professor of science and national security studies at M.I.T. and the author of many private and federal weapon reports, was a top Navy science adviser in the Reagan administration and for decades has studied enemy countermeasures to antimissile weapons.

After the 1991 Persian Gulf war, he challenged the Army’s claims of success for its Patriot antimissile system, saying it had, in fact, destroyed no Iraqi missiles at all. Though the Pentagon at first denied his assertion, it later conceded that initial reports of the Patriot success had been exaggerated.

The current scientific fray centers on the interceptor’s 120-pound homing device, known as a kill vehicle. Fired on a rocket, it is designed to use a telescopic sensor, a computer and jet thrusters to steer itself through space toward a warhead, destroying it by force of impact.

Dr. Postol’s critique involves its hardest job, distinguishing between

actual enemy warheads and the cloud of decoys considered sure to be launched to disguise them. If unable to tell decoys from warheads, a defender would be forced to fire interceptors at every threatening object, quickly exhausting a defensive force.

Dr. Postol began digging into the first antimissile flight test, in June 1997, after reviewing Pentagon data gathered by Dr. Schwartz.

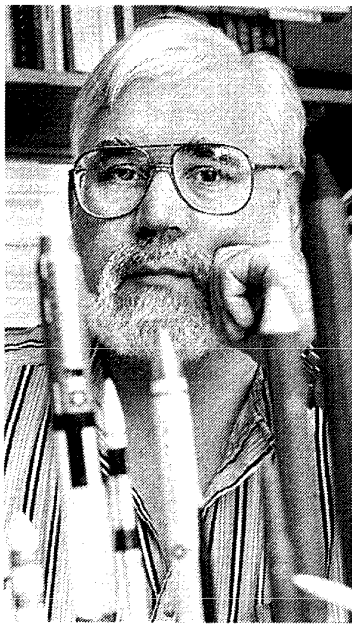
The sensors at issue are cooled to more than 300 degrees below zero and work in the icy void of space to track faint heat emissions from warm targets, just as ordinary telescopes track light. They see warheads and decoys as twinkling points of light, like stars.

The June 1997 flight test, Dr. Postol asserted, showed that the infrared twinkles were random and insufficiently different from one another to let the interceptor distinguish among them, and that the Pentagon had conspired to hide this surprising discovery. The Pentagon, he said, has altered future tests to artificially heighten any differences that could be detected between warheads and decoys.

His accusation is based mainly on a detailed chart from the Pentagon’s Ballistic Missile Defense Organization that gives an overview of its program for Integrated Flight Tests of the kill vehicle. Entitled “I.F.T. Targets Selections,” the chart is dated May 5, 2000, and at the top is labeled “For Planning Purposes.” The chart’s bottom warns, “Configuration controlled by N.M.D. J.P.O.,” or the National Missile Defense Joint Program Office. “Do not alter this document.”

The chart starts with the June 1997 test, lists another sensor flight and then goes through the 16 intercept tests scheduled for the kill vehicle’s entire development. The last flight is listed as June 2004, right before the antimissile weapon is to begin operating in 2005. In each case, the chart spells out the exact type and number of test decoys and warheads and depicts them in small pictures.

Dr. Postol said the chart shows how the initial suite of challenging decoys, the ones that twinkled a lot, making them hard to distinguish from a warhead, had been replaced by fewer and simpler decoys that twinkled as little as possible, accentuating their differences from warheads that fluctuate a lot in infrared intensity.



Rick Friedman for The New York Times

Theodore A. Postol, the M.I.T. professor who obtained the Pentagon’s antimissile testing plan.

KEEPING TRACK

Bar Reported Lowered For Missile Defense Tests

Theodore A. Postol and other critics of the proposed National Missile Defense system argue that future tests of the system are being manipulated to hide the fact that it cannot differentiate between realistic decoys and the warheads it is intended to intercept. The next test is set for July.

WARHEAD DECOYS WARHEAD DECOYS WARHEAD DECOYS

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IFT TARGETS SELECTIONS AS OF 05/05/00 (U)



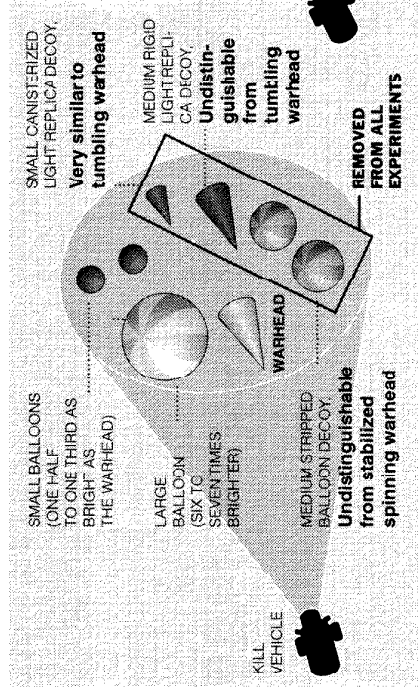
Objects Not to Scale

Date mm/yy	IFT #	EXISTING TARGETS	NEW TARGETS	WARHEAD	DECOYS	WARHEAD	DECOYS	WARHEADS
06/97	1A	1	1	1	1	1	1	1
01/98	2	1	1	1	2	2	1	
10/99	3	1	1	1	2	2	1	
01/00	4	1	1	1				
05/00	5	1	1	1				
09/00	6	1	1	1				
01/01	7	1	1	1	1	1	1	
05/01	8				1	1	1	
08/01	9							6
11/01	10							2
03/02	11							1
06/02	12							1
11/02	13							2
03/03	14							1

DECOYS REMOVED FROM EXPERIMENTS

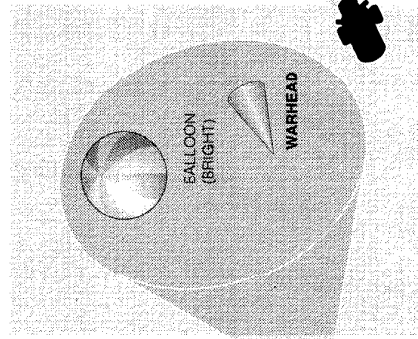
June 1997 and Jan. 98 Tests: TWO TESTS WITH CREDIBLE DECOYS

The Exoatmospheric Kill Vehicle (EKV) sees the signals from distant objects as fluctuating points of light. The light from a rotating balloon covered with stripes fluctuates like that of a warhead changing its orientation as it rotates and/or tumbles in space. If the balloon is not clearly brighter or darker it becomes undistinguishable from the target.



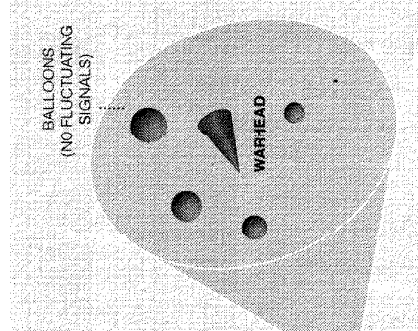
July 2000 Test: DECOYS REMOVED

After the second test, the only decoys retained were those that are spherical, and substantially brighter or dimmer than target warheads, and thus easily distinguishable.



June 2003 Test: DECOYS REPLACED

All new decoys are modified to be featureless spheres so they have no time-varying signals like those of the non-spherical spinning and tumbling warheads.



Source: Theodore A. Postol, M.I.T.

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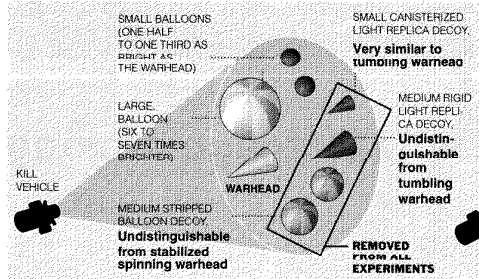
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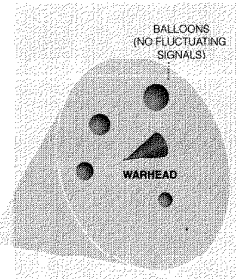
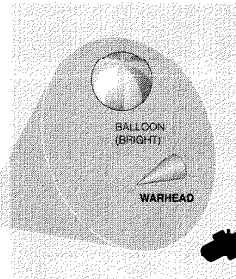
Date	IFT #	WARHEAD	DECOYS	WARHEAD	DECOYS	WARHEADS
01/97	1	1	1	1	1	1
01/98	2	1	1	1	2	2
10/98	3	1	1			
01/00	4	1	1			
02/00	5	1	1	1	1	
01/01	7	1			1	1
06/01	8				1	1
02/01	9				1	1
11/01	10				1	4
03/02	11					2
09/02	12					1
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Dr. Postol said the chart shows how the initial suite of challenging decoys, the ones that twinkled a lot, making them hard to distinguish

that looked like warheads and balloons that inflated to conelike shapes.

"These decoys," he wrote, "have brightness and time-dependent oscillating signals that can be quite similar to the signals from either warheads that are spinning around their axis of symmetry, or tumbling end over end."

The only retained decoys, he said, were spherical, uniform in materials and substantially brighter or dimmer than warheads. Their signatures, he said, "will have very uniform and controlled intensities."

All the program's interception tests, Dr. Postol said in the draft report to the White House, "have been carefully orchestrated to avoid encountering the discrimination problems." In an interview, he said he hoped to get the report, a draft of which runs to 20 pages, to the White House next week.

General Kadish, while saying the planning chart was authentic, if tentative, strongly denied that the testing program had been structured to become increasingly easy. To the contrary, he said, the decoys were selected to make the evolving tests increasingly hard.

"Complexity is increasing," he said.

Asked how a smooth balloon could be more difficult to track than a rigid decoy shaped to look like a warhead, he replied, "That's a valid technical argument," but he added that just because a decoy seemed effective "doesn't mean its credible."

The test program, he said, was structured to make the weapon flexible and robust. Testing it against decoy shapes that were too specific might allow an enemy to fool the weapon by changing them "a little bit," General Kadish said. "What we're after is a basic physics approach."

Previously, Pentagon officials have said they reduced the complexity of some antimissile testing when the government cut the program's goal from trying to knock out advanced warheads from countries like Russia and China to more primitive ones from rogue states.

Lt. Col. Richard Lehner of the Air Force, an antimissile spokesman, said the current testing diagram depicts provisional goals rather than a hard and fast plan. The only decoy configuration set in concrete, he added, was the next test flight, which has been delayed repeatedly and is now scheduled for the first week of July.

Yesterday, Dr. Postol belittled the Pentagon's retorts, saying they were misrepresenting the program's logic. "They've been caught in one outright lie after another," he said.