

# Patriot's Effectiveness Challenged

An Israeli videotape being shown around Washington could further tarnish the image of the Patriot missile as the hero of the Persian Gulf war. Reuven Pedatzur, a missile defense expert at the Jaffa Institute for Strategic Studies in Tel Aviv who has seen the tape, says it shows the Patriot exploding ineffectively amid the debris of disintegrating Iraqi Scud missiles. Indeed, Pedatzur claims that in every case in which Israelis were able to film a Patriot-Scud encounter, the Patriot failed to stop the Scud warhead.

The tape appears to cast serious doubt on the official claims that the Patriot's success rate in blocking Scuds ranged from 44% in Israel to a near-perfect 90% in Saudi Arabia. According to Pedatzur, a select group of Israeli missile experts has concluded from the video and other information that the Patriot was not able to destroy any Scud warheads over Israel. If the Israeli analysis stands up—and the details have not yet been made public—it could undercut the promotion of the Patriots as an effective antiballistic missile system. But, as defense analyst Theodore Postol of the Massachusetts Institute of Technology—who has long challenged official claims of the Patriot's effectiveness (*Science*, 3 May, p. 640)—points out, the Israeli skeptics may have a bias, too: They hope to win funding for a new Israeli defensive missile called the Arrow that presumably would perform better than the Patriot. The important lesson, says Postol, is that the United States desperately needs an objective way to evaluate such weapons disputes.

Israeli and U.S. missile experts did make a concerted effort to collect data on the Patriot's performance in Israel, including photo images of Patriot-Scud encounters recorded simultaneously by visible light and infrared video cameras. The Israeli government has not publicized its findings, says Pedatzur, because "then the public would know that there is no defense against missiles" from Syria, and this would create "a political problem."

Spokesmen for Raytheon and the U.S. Army dismiss these reports as anecdotal, noting that the official Israeli view has not changed since April, when the 44% confirmed warhead kill rate was agreed upon. But at least one senior Pentagon scientist—as reported by *The New York Times*—claims that an Israeli official recently showed a group of U.S. experts in Washington, D.C., videotapes of 12 Patriot-Scud encounters in which the Patriot failed to hit a Scud warhead. Two senior Pentagon experts who spoke with *Science* confirmed that an Israeli

official has been showing a videotape in Washington recently, and one said the video had previously been shown to the Army's Strategic Defense Command in Huntsville, Alabama.

If the Patriot's kill rate in Israel is uncertain, the missile's claimed 90% success rate in Saudi Arabia would appear to be on even shakier ground. A Pentagon spokesman confirmed for *Science* last week that no Patriot radar information is available from Saudi Arabia because the digital recorders sent there to monitor the system were "not hooked up" to the consoles—on orders from the U.S. area commander. Instead, according to Major Peter Keating, a U.S.

Army information officer, the claimed kill ratio for the Patriot in Saudi Arabia is "based on the analysis we were able to do from what we had on the ground—fragments, missile bodies, collecting bomb damage assessments, things like that."

Postol, saying that the military had "better things to do" than hunt for craters during the war, questions the quality of this information. And a Pentagon missile expert notes that the Army gave itself credit for some successful kills even when Scuds fell in the desert outside the "footprint" being defended by a Patriot.

One way to clear up this continuing disagreement about the Patriot missile would be to have an independent technical group conduct a full post mortem. At present, however, the Pentagon has no plans to do that.

■ ELIOT MARSHALL

## A \$9-Billion Budget for NIH

The 1992 appropriation for the National Institutes of Health (NIH) has finally emerged from a House-Senate conference committee and is expected to be passed by Congress and sent to the president this week. For researchers, the bill that has emerged after 9 months of deliberations on Capitol Hill is mostly good news: NIH's total appropriation is just over \$9 billion, almost 9% ahead of last year's budget. The bad news is that the legislation contains language that would overturn the so-called gag rule—a regulation that prohibits federally funded clinics from saying anything about abortion—and President Bush has indicated he will veto the bill unless the gag rule is left intact.

Although the fight over the gag rule may delay the denouement of this year's budget warfare, congressional insiders expect that the budget figures contained in the bill will remain unchanged. The big winner is the National Cancer Institute, which received \$160 million above its planned increase largely because Senator Ernest F. Hollings (D-SC) decided that cancer should be a priority this year, the 20th anniversary of the National Cancer Act. Other winners include the aging institute, which received a significant

infusion of new money for research on Alzheimer's disease, and the director's office, which received a nearly 50% increase over last year, in part to pay for the newly instituted Shannon grants.

Researchers will not be so happy with a provision in the bill that would prevent NIH from awarding some \$400 million worth of grants until 30 September, 1992 the last day of the fiscal year (*Science*, 25 October, p. 513). The idea is to push the actual expenditure into 1993, thus holding down the size of the 1992 deficit. NIH is

NIH's (Probable) Final Budget  
Dollars in thousands

Institute	1991	1992 Request	1992 Appropriation
Cancer	1713.8	1810.2	1989.3
Heart, Lung, and Blood	1126.9	1209.9	1199.4
Dental Research	148.9	160.9	160.5
Diabetes, Digestive, and Kidney	615.3	658.6	664.1
Neurology	541.7	583.4	583.4
Allergy and Infectious Disease	907.3	976.7	971.1
General Medical Sciences	760.0	833.2	818.9
Child Health	479.0	520.6	524.5
Eye	253.2	272.3	271.0
Environmental Health Sciences	241.0	254.5	253.9
Aging	323.8	348.6	387.0
Arthritis	193.2	204.8	204.5
Deafness	134.9	146.3	149.8
Other	837.7	794.9	833.0
<b>TOTAL</b>	<b>8276.7</b>	<b>8774.9</b>	<b>9010.4</b>

not alone: The bill contains more than \$4 billion in delayed obligations scattered throughout the other agencies covered by the legislation. This huge sum might also trigger a veto from President Bush, a man who, after all, once professed disdain for voodoo economics.

■ JOE PALCA

SOURCE: HOUSE OF REPRESENTATIVES