

LETTERS

US Terrorist Vulnerability Exposed Years Ago

The Issues and Events piece on the potential revival of the Office of Technology Assessment (PHYSICS TODAY, October 2001, page 24) was excellent, timely, and important. I would particularly like to point out the Web site the writer mentioned: <http://www.wws.princeton.edu/~ota/>, where all of the more than 700 OTA reports may be found. These reports are outstanding syntheses of information on many complex issues. Being science-based and therefore densely factual, they have an enduring quality that is mostly independent of the policy oscillations that characterize our political debate.

In particular, and in light of the recent airborne terrorist attacks, the OTA reports *Technology against Terrorism: Structuring Security* (January 1992) and *Technology Against Terrorism: The Federal Effort* (July 1991) make for chilling reading and a sad sense of déjà vu. The lack of coordination among intelligence agencies; underpaid, bored, poorly trained baggage screeners; passenger profiling and privacy issues; and much more—they're all analyzed in detail, and specific action items are discussed for Congress, the Federal Aviation Administration, and others.

A great many detailed analyses of security lapses and intelligence failures, together with recommended improvements, have been published since the 11 September disasters. Almost all of them could have been lifted in toto from these OTA reports, now nearly 10 years old. To me, that is almost as frightening as the events themselves.

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Defense Work Is Physicists' Tradition

I was struck by the juxtaposition of Robert K. Adair's letter "Defending One's Country Is Moral, Too" (PHYSICS TODAY, September 2001, page 78) just following the obituaries section. All of the distinguished scientists who are memorialized there found "a moral dimension . . . in con-

tributing to the defense of their country."

Ugo Fano's obituary says of him, "World War II intervened, so he began work on ballistics at the US Army's Aberdeen Proving Ground." Of Minoru Oda, it is said that "in 1944, he was recruited to the Japan Naval Research Laboratory's Shimada branch." Harry Brumberger "served in the US Army in the ski troops." And "during World War II, Arnold [Boris Arons] was a group leader in the Underwater Explosion Research Laboratory at the Woods Hole Oceanographic Institution."

A society is at its greatest peril when its members do not feel they have the moral obligation to defend the very society that nurtures them.

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Rarely does a scientist speak out as a citizen with the moral force that animated Robert K. Adair's low-key letter (PHYSICS TODAY, September 2001, page 78) on the subject of his military service in World War II. I wonder how many men who had occupational deferments gave them up as Adair did to volunteer for military service in that war. Surely it was that kind of moral commitment, as much as our armaments, that defeated Adolf Hitler and the threat he represented to all that is best in modern civilization.

Perhaps not all our wars have been waged for ends as incontestably admirable as World War II, but those who take a pacifist stance today should read Adair's letter, review the history of that war, and rethink their position.

It is simply an ugly, continuing fact of life that there are people in the world who do evil, vicious things. There are likely to be times in the lives of all of us when we must be willing to deal with such people with all the force at our command, as citizens in our private lives, and to avoid combat is to surrender to evil.

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Greenhouse Gases Warm Things Up

I have read the short article "Warming Oceans Appear Linked to Increasing Atmospheric Greenhouse Gases" by Barbara Goss Levi (PHYSICS TODAY, June 2001, page 19) and find the logic quite flawed. There is no evidence for rising temperatures in the atmosphere above the boundary layer. How the mean atmospheric temperature can remain essentially constant while warming the oceans is never explained (no phase change is involved). The idea that a rising ocean temperature, if indeed the ocean is warming, must be due to greenhouse gases because the proponents cannot think of anything else is not science. It's pseudoscience!

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Goss-Levi REPLIES: In asserting that "there is no evidence for rising temperatures in the atmosphere above the boundary layer," Robert Whitten is touching on a discrepancy between different measurements of atmospheric temperature trends: The temperatures above the boundary layer (that is, above roughly 3 km), as recorded by satellites, have not shown the same 0.25-0.4°C temperature rise seen over the past two decades in the low- to mid-troposphere (up to 8 km), as determined from land- and sea-based measurements. However, a National Academy of Sciences panel concluded in 2000 that "the warming trend in global-mean surface temperature observations during the past 20 years is undoubtedly real."¹ The panel also concluded that "the troposphere actually may have warmed much less rapidly than the surface from 1979 into the late 1990s, due both to natural causes [such as volcanic eruptions] and human activities" such as chlorofluorocarbon-induced ozone depletion, which cools the upper troposphere.

Whitten asks how the oceans can warm if the atmosphere does not. Additional greenhouse gases added to Earth's atmosphere absorb infrared radiation emitted by Earth's surface and reradiate part of it to the surface. This radiation can warm the surface directly without warming the atmosphere first.

Whitten's assertion that attributing a rising ocean temperature to green-