

RAND REVIEW

Summer 2002

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Hitting Home

What We've Learned Since 9/11 and What We Should Do About It

GLOBAL PRIORITIES



OVERSEAS DEPLOYMENTS



HOMELAND SECURITY

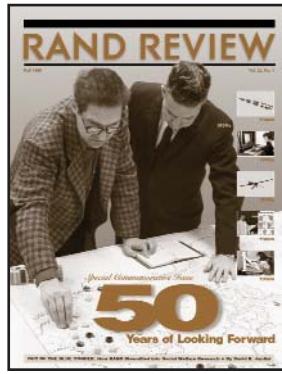
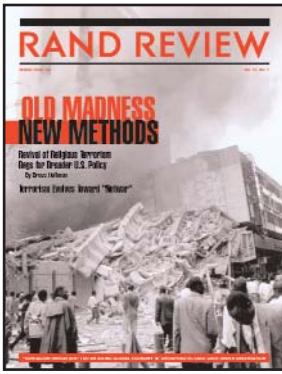
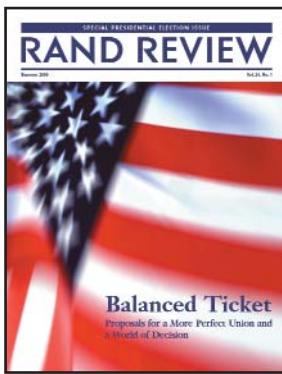
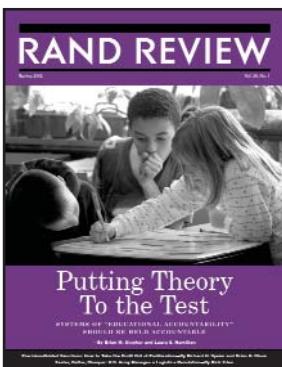
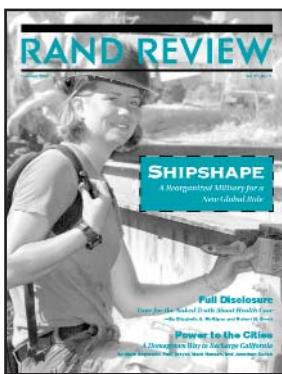


STATE AND LOCAL INITIATIVES



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covers the
big issues with
an eye for
the important
details.



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Our Contribution

The last time America defeated an adversary with global reach, research played an essential role. The research conducted here at RAND helped to unlock the political mysteries of the Soviet Politburo, to extrapolate details about the otherwise enigmatic Soviet economy, to compare the effectiveness of alternative U.S. military strategies, and to sharpen the performance of military operations.

America's new war—against another adversary with global reach—will require an even greater analytical effort. Terrorism is an enemy much more inscrutable than the former Soviet Union. If research was crucial before, it is absolutely indispensable now.

This issue of *RAND Review* offers a sampling of what we are contributing on a wide range of fronts to help fight terrorism. In the year since Sept. 11, 2001, we have examined the dimensions of the terrorist threat—and the potential responses to it—in greater detail than ever before in our three decades of counterterrorism research.

James Thomson and Brian Jenkins set the stage for this issue. Thomson describes four troubling global trends that we urgently need to understand better so that we can counteract terrorism better, while Jenkins offers a unique historical perspective on the pioneering role of counterterrorism research at RAND.

In the 27 essays that follow, RAND authors offer specific policy recommendations when they can. When they cannot, they outline the important questions that need to be answered before recommendations can be made. All of these essays represent work done within the past year.

Here are some of our initial findings:

- Global health care is vital to global security. America has an unprecedented opportunity to make a lasting difference in the world and to fight terrorism at the same time.
- Social and economic development programs around the world can inhibit terrorism only when they are adequately funded and properly implemented.
- The U.S. military needs to prepare for more frequent deployments and more long-term deployments to far-flung regions. It also needs to add new offensive capabilities to its arsenal.
- It is often more effective to target the mid-level core of a terrorist organization than its top-level leaders.
- Airport security at home should be rebuilt from the bottom up, with the federal government coordinating locally designed solutions.

If research was crucial before, it is absolutely indispensable now.

- The veterinary science curriculum in the United States needs to place greater emphasis on the recognition and treatment of animal diseases of exotic origin so that livestock and people can be defended against the terrorist use of biological weapons.
- Local emergency responders need equipment that is more durable and training that is more representative of extended response activities.
- Many hospitals and local public health departments should conduct terrorism drills more frequently and do a better job of integrating their preparedness plans with those of other local emergency response agencies.

Here are some of the questions that still cry out for answers:

- What are the roots of anti-American violence? Stemming the violence requires an honest examination of what drives others to lash out against America.
- How should victims of terrorism be compensated? Neither private insurance, the tort system, private charities, nor government aid alone is likely to provide a satisfactory solution.
- What makes individuals and communities resilient in the face of terrorism? Many local institutions could salve psychological wounds.

Our work proceeds on additional fronts not covered in these pages. Research on demographic trends in Afghanistan, Pakistan, and Central Asia could inform U.S. military plans and international development programs. Research on educational reform in the Middle East could yield promising strategies for diverting youth away from anger and frustration.

America needs research in all of these areas to help win the war against terrorism. We consider our counterterrorism research of the past year—and of the past 30 years—to be just a start.

—John Godges

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AP/WIDE WORLD PHOTOS/VICTOR R. CAIVANO

Overseas Deployments: Light armored vehicles from the 15th Marine Expeditionary Unit head east toward Kandahar on Dec. 9, 2001.
U.S. MARINE CORPS/SGT. JOSEPH R. CHENELLY

Homeland Security: Dairy cows amble through a pasture in Nash County, N.C., on July 12.
AP/WIDE WORLD PHOTOS/BOB JORDAN

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Role model, south of Gaza City, February 2002.

AP/WIDE WORLD PHOTOS/CHARLES DHARAPAK

Tent city, undisclosed location, Southwest Asia, December 2001.

U.S. AIR FORCE/STAFF SGT. CECILIO RICARDO

Hope Creek Nuclear Generating Station, Lower Alloways Creek, N.J., July 2002.

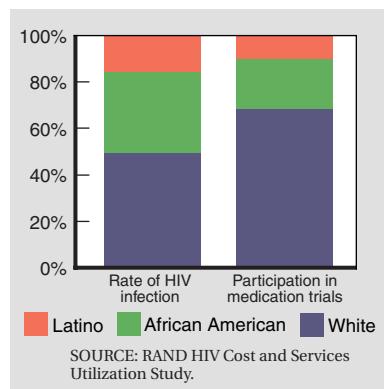
AP/WIDE WORLD PHOTOS/BRIAN BRANCH-PRICE

Emergency training of army personnel with local hospitals and ambulance services, Marshall Army Air Field, Fort Riley, Kan., April 2002.

AP/WIDE WORLD PHOTOS/DAILY UNION/JOHN PETROVIC

African Americans, Latinos Less Likely to Enroll in HIV Clinical Trials

Although African Americans and Latinos account for nearly half of the people with HIV in the United States, they are less likely to be enrolled in clinical trials or to get experimental drugs as compared with their white counterparts, according to a recent report in the *New England Journal of Medicine*.



"Race and ethnicity influence access to research trials and experimental therapies," said lead author Allen Gifford, of the U.S. Department of Veterans Affairs San Diego Healthcare System and the University of California, San Diego. "Even when whites and minorities had the same amount of education, type of health insurance, and degree of illness, whites were about twice as likely to be enrolled in research trials as were minorities."

According to the study, whites were more than twice as likely as black patients to try to obtain an experimental medication—and were slightly more likely to succeed. Among patients who said they actively sought out experimental

drugs, 77 percent of whites (but 69 percent of blacks) received them.

"The underrepresentation of some groups among those getting experimental treatments is a problem for two reasons," said the study's senior author, Sam Bozzette, of RAND; the University of California, San Diego; and the Veterans Affairs San Diego Healthcare System.

"First, clinical trials are most useful in guiding future medical care if the patients enrolled in them are similar to those who will use the new treatment once it is released. Second, the use of experimental treatments outside of clinical trials should be equally available to all those who need them." ■

Letter to the Editor

The article "Cry, the Derided Country: A Friendliness Index for a Lonely America" (*RAND Review*, Spring 2002) describes a project of Vladimir Shlapentokh, of Michigan State University, to assess the friendliness of various groups in different countries toward the United States. The project will attempt to answer the question, "Why do they hate us so much?"

The main cause is the U.S. Middle East policy, which has alienated the Muslim world and triggered anti-Semitism in Europe. It has been interesting to see how even Tony Blair has to equivocate to defend this U.S. policy. The latest blip has been the demand by President Bush that [Palestinian Chairman Yasser] Arafat be replaced. If Arafat is reelected, Bush and the United States will be left in an awkward position.

The friendliness survey is far from complete, but the *RAND Review* summary has one surprising

item. While England is the most favorable in Europe, Greece and Spain are the most hostile. Greece one can understand; it is the result of U.S. support for its NATO ally, Turkey. But Spain? There would seem to be two causes. The United States views Latin America as its backyard and acts accordingly, with no regard for Spain's promotion of an Iberian union to preserve its historic links with the area. Spain hopes to serve as a bridge between Iberoamerica and the European Union. The second reason is the heavy hand of the United States in the Arab world, with which Spain feels it has a special link.

Ronald Hilton

Visiting Fellow

Hoover Institution

Stanford, California

Pakistani General Looks East, West for Help

The United States and China can play a critical role in the conflict between Pakistan and India by providing mediation and technical assistance, said Brigadier General Feroz Hassan Khan, director of the Arms Control and Disarmament Affairs Division of the Joint Services Headquarters of Pakistan. He recently spoke at RAND.

Khan asserted that Pakistan's nuclear program is inextricably tied to its security. The country's threats include an unstable Afghanistan to the west, internal turmoil, and a hostile India to the east.

The United States and China, he said, could be instrumental in bringing peace to the region. He suggested that the United States

and China could create a basic code of conduct, agreed upon by Pakistan and India. Such conduct would require immediate consultations among the four countries during crisis situations.

He added that Pakistan and India should commit to refrain from using, or threatening to use, force against each other. Finally, he proposed the creation of a program to guard against accidental or unauthorized use of nuclear weapons.

Ultimately, Khan said, a doctrine of nuclear deterrence based on the concept of "mutually assured accommodation" would be the most viable path for peace in South Asia. ■

Russian Corruption

The average Russian citizen offers a bribe about once a year. Top reasons for offering a bribe include resolving an issue with the traffic police or getting better government-provided health care.

These are some of the findings of Georgiy Satarov, founder and president of the INDEM Foundation, an independent center of policy analysis and research in Russia.

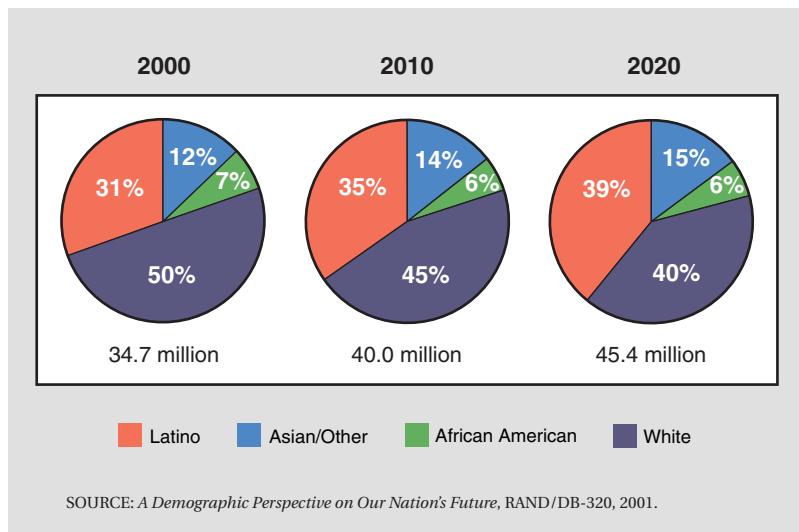
Satarov, who spoke recently at RAND, interviewed businessmen and private individuals in Russia. The private individuals were first asked if they had ever found themselves in a situation where they were asked to pay a bribe (monetary or nonmonetary) and, if so, whether or not they paid it. Almost 40 percent of total respondents reported they had paid the bribe.

Satarov also discovered that the biggest market for corrupt services was within the university system. He said that corrupt services represented just under \$445 million of the system's total estimated \$2.8 billion annual market—or almost 16 percent of the market. Enrolling in college to avoid military service was a top motivator for men to offer bribes.

Businessmen were more reluctant to admit to "giving any kind of incentive" (or bribe) to government officials. Still, the researchers found that over 66 percent of businessmen offered such bribes.

Satarov estimated that the annual total dollar figure of bribes paid by businesses was over \$33 billion in 2001. The federal budget of Russia in 2001 was \$40 billion. ■

California: A Proving Ground for U.S. Policies?



Many future national policy challenges are already becoming evident in California, with its exceptionally large and diverse population. According to RAND researchers, major national policy challenges over the coming decade will include balancing competing interests within ethnically diverse areas, nurturing human capital for the nation's scientific pursuits, and addressing impediments to individual opportunity, including educational disparities and remnants of a "digital divide." See page 8 for projections of U.S. demographic diversity through 2050.

A Call to Action Against Childhood Asthma

A panel of health experts recently called for policy changes to improve asthma care for children.

An estimated five million children in the United States live with asthma, the most common chronic childhood illness in the country.

An estimated five million children in the United States live with asthma, the most common chronic childhood illness in the country, according to a RAND report recently published in the journal *Pediatrics*. Among U.S. children under age five, the number of cases has increased 160 percent between 1980 and 1994. African Americans and some Latinos, particularly Puerto Ricans, suffer the highest asthma rates.

“Although children with asthma can live normal lives when they receive effective treatment, too many children with asthma are suffering unnecessarily, and some are even

dying,” said Marielena Lara, lead author. “This report is a call to action to leaders in the public and private sectors to make substantial, coordinated efforts to solve this problem.”

The proposed actions include expanding insurance coverage and benefits for children with asthma and creating “asthma-friendly” communities and policies. Such efforts would include more quickly diagnosing asthma; better equipping health care facilities, schools, and social agencies; and ensuring that children are safe from risks that exacerbate the condition.

Additional recommendations are meant to strengthen the public health infrastructure. These include the development of a national asthma surveillance system, which would expand the roles of private and public stakeholders at the local, state, and federal levels. ■

Class Size Matters

It's hard to say if California's program to reduce the size of kindergarten through third-grade classes is responsible for increases in student test scores, but the program is highly popular anyway, says a consortium of researchers evaluating the program for the California Department of Education.

While achievement scores have risen significantly in California's elementary schools in the past five years—the same period when the Class Size Reduction (CSR) program was implemented—the researchers found little evidence that CSR had played a significant role in the rise.

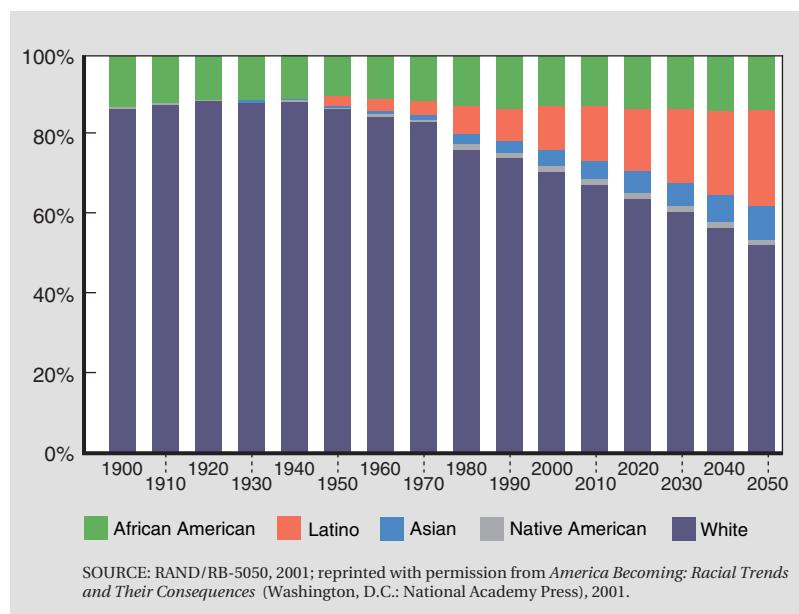
In spite of their inconclusive findings, the researchers noted that CSR remains highly popular among parents and teachers in California, where elementary school classes were among the largest in the country prior to CSR.

“Parents and teachers overwhelmingly feel that smaller is better,” said Brian Stecher, a researcher at RAND, which is a member of the consortium. “In part, this may be due to students getting more individual attention in smaller classes and teachers feeling they know their students better and can better respond to their needs.”

While class size reduction is likely to remain a priority for the state, the researchers have suggested improvements. One is to create incentives for some districts to experiment with variations of CSR as a way to meet local needs and to gain knowledge about the cost-effectiveness of alternative class-size arrangements for different student populations. ■

America's population will become increasingly diverse. The changing demographics will have implications for many public policies, such as affirmative action, early childhood investments, housing, health care, criminal justice, and civil rights laws.

America's Changing Ethnic Diversity



Harvard Business Scholar Asks: “Globalization for Whom?”

Popular economic theory holds that globalization should help poor countries get richer. The problem, according to Bruce Scott, professor at Harvard Business School, is that popular economic theory works best in rich countries.

Speaking recently at RAND, Scott contended that the golden opportunities of globalization glitter for only about 15 percent of the world’s population. So rich countries get richer, and Third World countries are little or no better off.

The key to a country’s wealth, he said, is the integrity of a country’s underlying social structures and government institutions—such as democratic elections, educational systems, and judicial systems. Such foundations uphold economic markets, not the reverse. Economic theory works where the foundations are already in place.

He challenged the notion that disadvantaged countries could compete on an even playing field with advantaged countries. “It’s equivalent to saying, ‘We all know how to play cards.’ But the Third World is playing ‘go fish,’ and the rich countries expect everyone to know how to play bridge. Globalization creates opportunities only if you have the foundations. If all you can do is play ‘go fish,’ it does you no good to get invited to a bridge game. For much of the world, those are the circumstances.”

The stakes appear to be growing as markets become more sophisticated and globalized. According to Scott, part of the problem is that rich countries insist on barriers to immigration and to agricultural

imports. Another part of the problem is that most poor nations have been unable to attract much foreign capital due to their own government failings.

“By forcing poor people to remain in badly governed states, immigration barriers deny those most in need of the opportunity to ‘move up’ by ‘moving out.’”

Scott also rejected the notion that low labor costs offer the best opportunities for people in poor countries. “If the rest of the system doesn’t work, the labor advantage doesn’t matter much.”

Even if a country musters popular support to modernize its institutional foundations, it takes ongoing and accountable political authority to keep the systems humming. The age-old predicament with political authority, Scott said, is keeping it accountable over the long term.

“Sovereignty is a funny problem for poor countries,” said Scott. “You can be a lousy manager of a country with little to fear [from the rest of the world] unless you get caught committing genocide, human rights violations, or bombing lower Manhattan.”

The disadvantage of globalization is most acute for Muslim countries, where religious and cultural values hinder the formation of more effective institutions, said Scott. He argued that Muslim countries generally do not revamp their laws and institutions without going back to the Koranic scriptures to “rediscover what the law was.”

For poor Muslim countries, Scott offered one source of reform: Increase the skills, not just the



AP/WIDE WORLD PHOTOS/TEH ENG KOON

incomes, of the low-skilled part of the population. He also noted that the best way for the United States to promote reform in some Muslim countries would be to highlight existing and successful examples of reform in other Muslim countries.

One model is Malaysia, a relatively savvy, higher-income Muslim country. “The Malays have been really sophisticated in trying to avoid a confrontation with [Islamic] fundamentalists. It would be a whole lot easier to have Muslims from Malaysia say, ‘Look at us. We can do this, and we’re still Muslims.’”

Otherwise, said Scott, the writing is on the wall. “If Americans don’t pay more attention to the difficulties of poor countries, I think we are likely to become targets for terrorists in many, many countries.” ■

An investor reads a local newspaper and studies the share index at a private stock gallery in Kuala Lumpur, Malaysia.

“If the rest of the system doesn’t work, the labor advantage doesn’t matter much.”

Saving Grace

A Timely Warning from Easter Island

IN FIFTY YEARS, the biggest problem facing us will be our relationship with the environment. So predicts Jared Diamond, Pulitzer Prize-winning author and professor of physiology at the University of California, Los Angeles, who recently spoke at RAND.

"The most important variable that determines the future is how well we succeed at integrating human communities with natural environments," said Diamond. He said that the course we're on today cannot be sustained for more than a few decades. Eventually, environmental problems will be resolved—either by our actions or by our inaction.

Diamond listed several environmental problems that threaten societies today: deforestation, soil erosion, unavailability of fresh water, excessive fishing, loss of biodiversity, depletion of the ozone layer, accumulation of toxins, climate change, and overconsumption of resources by humans.

"Think of these problems, and one can get pessimistic," said Diamond. "But one can be hopeful, because the risk we face today is not the risk of an asteroid—something beyond our control. These problems are entirely of our own making. So the outcome will depend entirely on our laws and policies."

We're lucky because we can learn from the past, he said. Thousands of past societies all serve as experiments. People in those societies lived in different environments, had different laws, and arrived at different outcomes. The results offer many lessons for today's laws and policies.

Why Some Societies Die

"There have been societies that have gone on for thousands of years where there has been no sign of environmental decline—for instance, Japan, Java, and the Inca empire,"

said Diamond. On the other hand, "there were societies where everyone ended up dead for failure to solve their environmental problems."

Cannibalism ensued, because there was only one source of protein left on the island: humans.

The simplest example of an environmental disaster is Easter Island. An isolated scrap of grassland about 2,000 miles off the coast of Chile, it was the easternmost outpost of Polynesia. Today, it's a barren island without native trees, known primarily for its gigantic stone statues.

The native people had developed the sophistication to carve their 80-ton monoliths with stone tools and transport them miles down a mountain to erect them on platforms. But when Europeans arrived in 1722, the native society was in a state of collapse. The residents were even pulling down their own statues.

The mysteries surrounding how this society evolved and why it collapsed have recently been solved. According to Diamond, when Polynesians arrived around the year A.D. 400 the island supported a subtropical forest and the world's biggest palm tree variety. Once settled, the Easter Islanders began chopping down the trees for agriculture, canoes, fuel, and monuments. The inhabitants carried on this deforestation for hundreds of years.

Then one day, they chopped down the last palm tree. Without trees, the soil eroded, agriculture declined, and canoes disappeared. The people stopped erecting statues. The island was transformed from a traditional Polynesian society to one dominated by military cliques. Ultimately, cannibalism ensued, because there was only one source of protein left on the island: humans.

What went wrong on Easter Island seems obvious to us today. But Diamond maintains that future generations will similarly shake their heads at us and at our laws and policies if we continue to make a mess of things. He predicted that a hundred years from now, people might ask, "How on earth did those Americans and Europeans not see the obvious environmental things going on?"

Why Some Societies Survive

Diamond cited two reasons why some societies survive longer than others do. The first is the lucky absence of

bad advice. "Today, Western experts frequently go out to dry areas of Africa and Asia and tell the nomads to settle down. In about 10 or 20 years, the result is disaster, because settling down makes sense in Europe or the United States, but it doesn't make sense in a relatively dry area. Nomadism is a response that's evolved over thousands of years to avoid these problems."

The second reason for a society's longevity is the fairness of its laws and policies, specifically those that can reconcile clashes of interest. Diamond categorized disputes into three types: those between the powerful elite and the rest of society, those between regions, and those between generations.

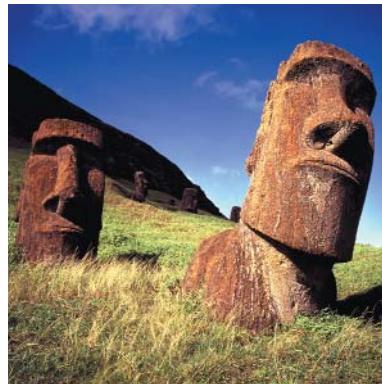
Clashes between the elite and the rest of society can be seen in the United States today, especially if the policy of the current administration is to insulate members of the elite from the consequences of their actions, said Diamond. "But this is not just a governmental issue. It's also an issue of business law and policy." He said that recent corporate scandals—including Enron—demonstrate how the interests of the corporate elite can be at odds with the interests of the rest of the company.

The elite cannot be insulated forever against the damage that it causes, however. If nothing else, Enron proved that the actions of the elite could bring down not only the company, but also the elite itself. "What's good for the elite in the short run is likely to be bad for the rest of society in the short run," said Diamond, "and bad for everybody in the long run."

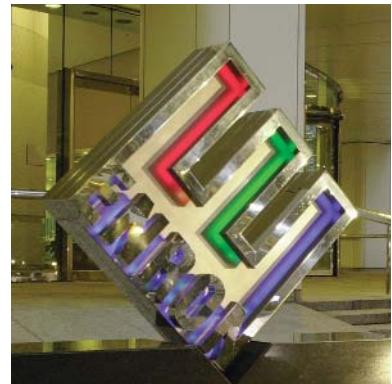
Regional disagreements also need to be resolved. What's good for one area may be bad for another. If Iowa farmers dump toxic runoff into the water table, the water ends up in the Mississippi River and then in the Gulf of Mexico. Fishermen in the Gulf lose income because of farmers in the Midwest.

The third type of clash is between generations. "What's good for us may be bad for our children—if we draw down our environmental capital, making it unavailable to them," said Diamond. He cited aquifers, forests, fisheries, and topsoil as assets that we are exploiting too quickly. This kind of unsustainable consumption, he warned, is "ultimately what did in all the past societies that failed."

To resolve these conflicts between classes, regions, and generations, Diamond urged that governments



CLIFF WASSMANN



AP/WIDE WORLD PHOTOS/PAT SULLIVAN

Easter Island monoliths and Enron logo: icons of fallen cultures.

begin by removing subsidies that reward people for environmentally destructive behavior. "Much local development in the United States involves governments supporting developers by putting in roads and water. Much agriculture in the United States—and most major fisheries in the world—would not be economical without government subsidies." He further suggested that governments subsidize environmentally friendly services instead.

"There are two big things today that might make one want to jump out the window or decide not to have children," said Diamond. "Today, there are far more people alive with far more destructive power than at any time in the past. Easter Islanders managed to ruin their environment with 10,000 people and stone tools. Today, there are six billion with metal tools."

The other cause for pessimism today is globalization. "When Easter Island collapsed, it didn't affect anybody else in the world," said Diamond. "Today, when the most remote country in the world collapses, say Afghanistan or Somalia, it's not just a local collapse. Because of globalization, every part of the world is connected to another part through diseases, terrorism, etc. The risk we face today is not like Easter Island—but a collapse of global society."

The good news is that we can learn from the past. "When I'm asked whether I'm an optimist or pessimist about the future, I say that I'm a cautious optimist," said Diamond. "We have problems, but the problems are ones of human making. Therefore, if we choose to solve them, we could." ■

Profits and Prejudice

Why We Regulate Some Drugs but Not Others

DRINK A BOTTLE OF WINE, and you may get nothing more than a hangover. Smoke a marijuana cigarette, and you may get jail time. Determining why this is the case is the concern of David Courtwright, professor of history at the University of North Florida and author of a recently completed book, *Forces of Habit: Drugs and the Making of the Modern World*.

Speaking at a recent RAND seminar on drug policy, Courtwright offered new perspectives on why societies wage war on some psychoactive substances but not on others—and the potential lessons for policymakers.

He defined the term *drugs* in a larger sense to include psychoactive substances such as alcohol, caffeine, and tobacco. He called this group the “big three,” because they “matter most in global psychoactive history.” Marijuana, cocaine, and heroin he called the “little three.”

The global spread and commercialization of the big and little threes provoked measures to restrict or prohibit them during the past century and a half. However, such policies have been highly uneven, noted Courtwright. Governments regulate the big three more lightly than the little three.

“During the last five centuries, people everywhere on this planet have discovered very powerful means of altering their everyday waking consciousness,” he said. “But the ‘drug problem’ hasn’t really been a problem until the last 150 years.”

Medicines, Markets, and Morals

Psychoactive substances always begin their careers as medicines. Courtwright outlined the early histories of distilled alcohol, tobacco, and tea—all of which were introduced as exotic and expensive medication. Over time, slave labor and plantation production in the New World made the substances profitable for manufacturers and distributors and cheaper for buyers. With the democratization of drugs, they spread beyond medical circles.

In the late 19th and 20th centuries, drugs were enormous commercial successes, but nations eventually began to change their policies toward them. “No one questions the use of narcotics for terminally ill

patients,” said Courtwright, “but a 17-year-old kid on the street corner sniffing heroin is a different proposition.” He noted some exceptions for tribal cultures, but for developed nation-states, the distinction between medicinal and other uses is basically clear.

The distinction is the basis for the global regulatory environment. However, instead of applying consistent legislative standards to all substances, governments have selectively restricted certain ones. According to Courtwright, five primary factors drive this discrimination: direct harm to self and others, social costs, religious fervor, deviant associations, and group survival.

Harm to the drug user is not usually enough to prompt a prohibition, especially in the United States, where individualism reigns, said Courtwright. In societies where paternalism rules, self-harm is enough to spark regulation. However, the single most common and powerful argument against drugs is that innocent third parties are harmed.

One 19th-century example was the observation that heavy drinkers were hurting more people than just themselves. They were spending their wages on alcohol and impoverishing their families. Or take tobacco. For centuries, people had complained about the nuisances of tobacco. But regulations increased dramatically only after it was confirmed that secondhand smoke was carcinogenic. Tobacco opponents then translated the polite question, “Mind if I smoke?” to a more derisive rhetorical question: “Mind if I give you cancer?”

Social costs are another source of opposition to drugs. The contention is that private gains, however large, often produce unacceptably high costs to society. Profits by merchants and taxes for governments are not sufficient to justify drug sales if the harm to society outweighs the benefits.

Modern econometric techniques have made it possible to estimate those social costs with some precision. Using complex calculations—involving variables such as wages, taxes, potential opportunities for farmers, and even uncollected pensions from dead people—experts realized the bottom line: Billions of dollars

were being lost. "Heavy drinking becomes everyone's business in a society where a liver transplant costs a quarter of a million dollars," said Courtwright.

Religious opposition stems not from the act of altering consciousness, but rather from perceived spiritual laziness. "Religions are all about altering consciousness," said Courtwright. "They want you to alter your consciousness through prayer, fasting, meditation, and other spiritual means. Drugs are regarded as forms of cheating, like chemical shortcuts."

"Suspicion of drugs is strongest among the true believers," he continued, citing the most committed, conservative, and fundamentalist religious individuals as those most likely to favor prohibitions. "Most people on the planet regard drug abuse as a moral failure, requiring punishment," he said. "You may not like it, but this is an incredibly powerful force in determining drug policy."

The association of a particular substance with a disliked or deviant group also plays a role in policy-making. American history is luridly rich with examples: Liquor was associated with lower-class Catholic immigrants, opium smoking with Chinese laborers, heroin with urban delinquents, and cocaine with black men.

In every instance where an unpopular group was associated with a substance, prohibitive legislation of that substance followed. The legislation may not have been based exclusively on prejudice, but prejudice played a role. According to Courtwright, "If Viagra had been created in a clandestine inner city drug lab and nicknamed 'Hardy Boy,' its subsequent regulatory history might have been very different."

Opposition to drugs also stems from the perception that their use endangers the future of the group, whether the group is defined as the tribe, the community, or the nation. This perception is the basis for concerns about teenagers. "The biggest anxiety is usually what drug abuse is doing to young people," said Courtwright, "and with good reason."

He also underscored the influence of the political elite as a secondary factor in driving uneven drug policies. Courtwright cited a well-known 1945 photograph of Winston Churchill, Franklin Roosevelt, and Joseph Stalin at Yalta. "As the photo was taken, Roosevelt—with cigarette in hand—was dying of congestive heart disease exacerbated by the fact that he smoked four



BETTMANN/CORBIS

packs of cigarettes a day. There's a saying that the leader's religion determines the religion of the people. To some degree, the leader's vices determine the vices of the people."

Winston Churchill, Franklin Roosevelt, and Joseph Stalin share a joke and a smoke at Yalta in 1945.

A Smarter Prohibition

Of course, the generalizations above don't completely explain the prohibition or regulation of every substance in every nation, said Courtwright. Instead, they offer a framework to understand restrictive movements in modern times.

Using a rating system originally developed in the 1950s, Courtwright assessed the relative danger posed by individual drugs. He discovered that policy is way out of alignment with the potential danger of a drug. "I'm not here to preach against hypocrisy," said Courtwright. "I'm only here to explain it."

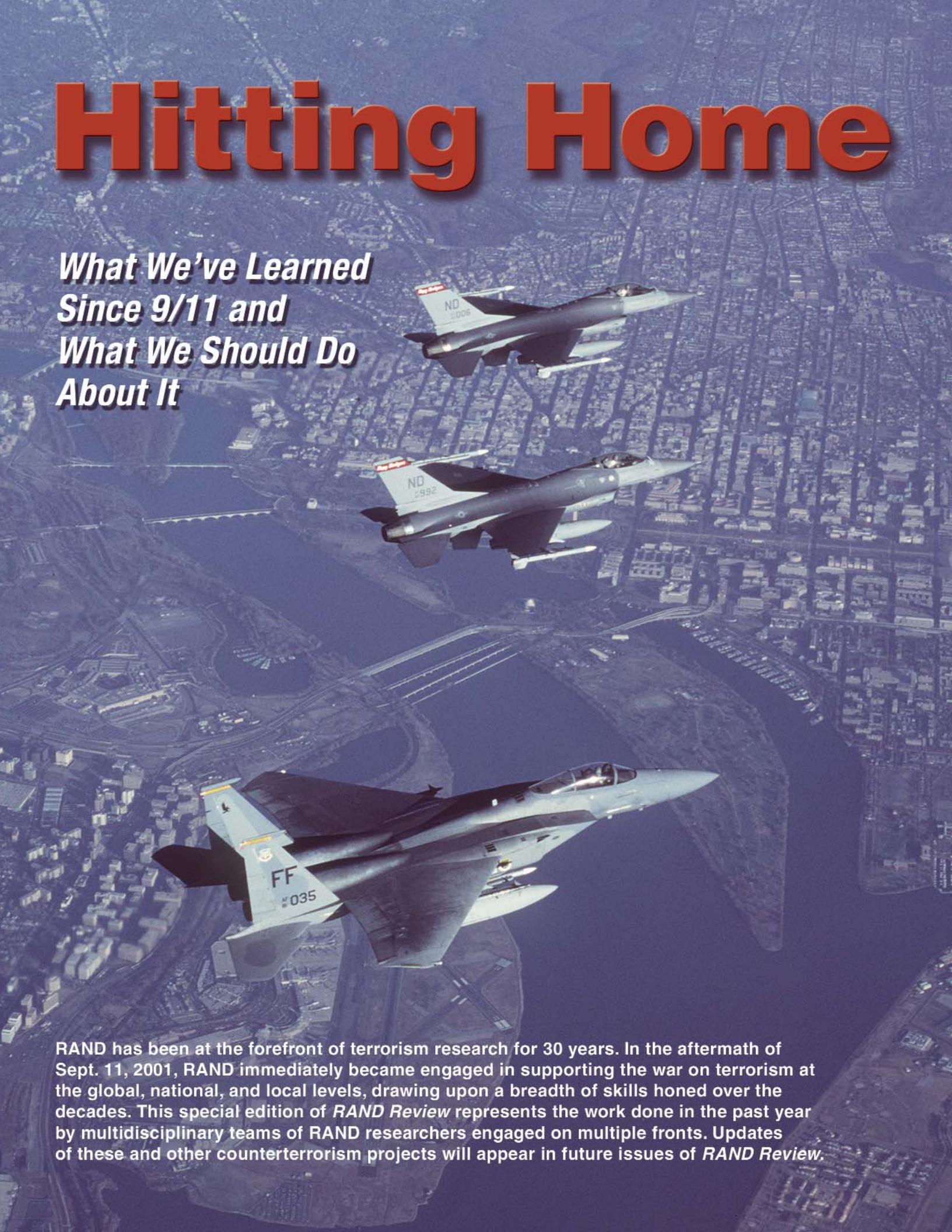
Still, when queried about potential policy directions, he said that a prime offender throughout history has been tobacco smoking, which he suggested may have paved the way for an increase in the use of all other psychoactive substances.

"Other kinds of drug abuse increased after smoking was introduced," said Courtwright. "From a policy perspective, I think the drug to attack is the cigarette. And, well, I'll just leave it at that." ■

"If Viagra had been created in a clandestine inner city drug lab and nicknamed 'Hardy Boy,' its subsequent regulatory history might have been very different."

Hitting Home

*What We've Learned
Since 9/11 and
What We Should Do
About It*



RAND has been at the forefront of terrorism research for 30 years. In the aftermath of Sept. 11, 2001, RAND immediately became engaged in supporting the war on terrorism at the global, national, and local levels, drawing upon a breadth of skills honed over the decades. This special edition of *RAND Review* represents the work done in the past year by multidisciplinary teams of RAND researchers engaged on multiple fronts. Updates of these and other counterterrorism projects will appear in future issues of *RAND Review*.

We're Here for the Duration

By James A. Thomson

James A. Thomson is president and chief executive officer of RAND.

After nearly a year, the war on terrorism remains a work in progress. There are really two wars: the war against Al Qaeda, the perpetrator of the Sept. 11 attacks, and the longer-term struggle against terrorism. Much more progress has been made on the former than the latter. The same is true on the research front. Although we have been working in the field of terrorism for 30 years (see the article by Brian Jenkins), there is much about the longer-term struggle we still do not know.

The war on Al Qaeda relies more on the U.S. military instrument of policy than does the long-term struggle. We at RAND have had numerous opportunities to help our clients in the defense department deal with the military challenges of Al Qaeda and prepare for other future terrorist groups. Several articles in this *RAND Review* draw on that research.

In the earliest stages of the war, as the United States sought to oust the Taliban from Afghanistan and to disrupt Al Qaeda's operations, U.S. policy relied almost exclusively on its military forces. Even allies and friends were not critical, except for base access and overflight rights. The United States is well positioned to conduct this kind of operation. A single agency, the U.S. Department of Defense, is responsible for military operations, and U.S. forces are by far the most powerful in the world.

But the war on Al Qaeda is now merging into the long-term struggle against international terrorism. The

continuing effort to defeat the surviving elements of Al Qaeda around the world requires other policy instruments—including intelligence, police, and finance—to work alongside the military effort. Key actors in this broader struggle are spread across the federal government. The effort also depends more heavily on the cooperation of the international community.

Success will rely heavily on innovative research, particularly because the struggle

- is long-term
- cuts across national boundaries and jurisdictions within nations
- involves threats that have not yet become apparent and are poorly understood
- poses the risk of major economic and social costs.

Four Troubling Trends

Unfortunately, outside the military realm, innovative research is just starting to develop. Four global trends have heightened both the threat of terrorist attacks and their potential destructiveness. Each trend calls for innovative policy research to reduce the probability of attacks and to ameliorate their destructiveness.

First, *there are dissatisfied, angry, and disoriented people all over the world, especially youth.* They are potential supporters of, and foot soldiers for, terrorist groups. Their dissatisfaction frequently stems from the poor public policies of their own governments—corruption, poor education, and poor public services, such as health. This situation provides openings for terrorist organizations to provide social support in the place of governments and to be an outlet for anger.

*Opposite:
Two F-16A
Fighting Falcons
from the North
Dakota Air
National Guard
lead an F-15C
Eagle from
Langley Air Force
Base, Va., during a
combat air patrol
mission over the
nation's capital.
Visible landmarks
include the
Lincoln Memorial,
Jefferson
Memorial, White
House, and the
damaged
Pentagon.*

**There are
dissatisfied, angry,
and disoriented
people all over the
world, especially
youth.**



AP/WIDE WORLD PHOTOS/AARON FAVILA

Students protest in Manila on Jan. 24 against U.S. military intervention in the Philippines in pursuit of the Muslim extremist group Abu Sayyaf, which is believed to be linked to the Al Qaeda network.

Could the United States and its allies reverse this trend? This question has received remarkably little attention. Perhaps it is too hard to answer right now. Our own research suggests that it might be. Nevertheless, we are grappling with this question in a number of research projects. Our Center for Middle East Public Policy (CMEPP) is focused on improved public policy in that region. Along with CMEPP, RAND Education is helping with education reform in the Middle East. The RAND Center for International and Domestic Health Security was recently founded, in part, on the concept that improved health policy could reduce the discontent that breeds support for terrorism (see the article by Robert Hunter, Ross Anthony, and Nicole Lurie).

It is hard for non-Americans to avoid the United States—a power that seems to be everywhere and thus responsible for everything.

Despite much journalistic speculation, the causes of anti-American hatred are not fully understood. So the United States has no good idea of what to do about it. At RAND, we believe that a careful, systematic inquiry into the causes of anti-Americanism is needed



AP/WIDE WORLD PHOTOS/ADEL HANA

Young Hamas supporters wield a model of a homemade mortar shell (left) and a belt holding what was meant to resemble a bomb (center) during a June 28 demonstration in Gaza City.

in order to find solutions. Such an inquiry is sure to touch on several politically explosive issues, such as U.S. relations with Saudi Arabia, Israel, and several other countries. We are seeking foundation support for such an effort. In his article, Richard Neu outlines the questions such a study would have to address.

Third, *the advance of technology makes it possible for terrorist groups to cause catastrophic damage*. As we saw on 9/11, terrorists can do a great deal using “conventional” means, but so-called CBRN (chemical, biological, radiological, and nuclear) weapons, especially biological and nuclear, pose the threat of extreme catastrophic damage with potential deaths in the millions. The United States has a major interest in the effective control of nuclear and biological materials in the former Soviet Union and in stopping the nuclear and biological programs of hostile countries such as Iraq.

Fourth, *the vulnerability of the United States (and other developed countries) to terrorism is growing*, largely as a consequence of economic growth and integration—divisions of labor, globalization, and economic reliance on such key infrastructures as transportation, energy, and information. Because of greater global interdependence, terrorist attacks—especially with CBRN



U.S. DEPARTMENT OF DEFENSE/U.S. ARMY/SGT. 1ST CLASS WILLIAM A. JONES

An Afghan woman teaches a class of girls in the Rukhshana School in Kabul on March 11. The Rukhshana School will become the first Coalition Joint Civil Military Operations Task Force project funded in Kabul.

weapons—would disrupt the global economy in a major way. One important reason is the mass psychological effect that is fostered by the global media and instant communications.

No Time to Waste

Determining how best to reduce these vulnerabilities is a huge challenge that cuts across federal, state, and local governments and the private sector. The nation's analytical challenge is to discern the strategies of terrorists, especially as they adapt to our efforts to protect ourselves; to assess our vulnerabilities; to gauge the effectiveness of our measures to protect ourselves and recover from an attack; and to weigh the costs of those measures, including the economic and social ones. In this situation—characterized by numerous vulnerabilities but constrained resources—it is as important to decide what *not* to do as what to do.

The analytical challenge is of the same magnitude as developing a cold war strategy toward the former Soviet Union. It cuts across almost all policy domains and makes a mockery of the idea that national security and domestic policy are separate. It requires a large vision of the research agenda and a comprehensive approach to the problem so that U.S. citizens can be assured that their government is focusing a sensible amount of resources on key vulnerabilities.

Here at RAND, we are working on several aspects of this large problem, often with the assistance of donors. We believe that long-term research on this problem should be part of the mandate for the new Department of Homeland Security so that major resources and the nation's best talent can be marshaled.

Today, the United States seems to lurch from one threat and vulnerability to another as an event occurs or a new piece of intelligence emerges. One week it's a radiological bomb, the next it's an airport shooting. No doubt considerable progress on reducing vulnerabilities has been made. But one cannot help but wonder if we are wasting a lot of effort on small problems while missing some big ones. A comprehensive analytical approach is essential. This was a key point of the president's homeland security strategy. This comprehensive approach is what we hope to provide in the coming years, drawing on our talented people from many policy domains and disciplines, ranging from international security to public health, from operations research to psychology. ■

The analytical challenge is of the same magnitude as developing a cold war strategy toward the former Soviet Union.

30 Years and Counting

By Brian Michael Jenkins

Brian Jenkins is a senior adviser to the president of RAND.

**The separation
between the
victim of the
violence and the
target of the
intended
psychological
effect was the
hallmark of
terrorism.**

to increase and become increasingly international, but we had only a dim notion of terrorism's spectacular future. Anyone at the beginning of the 1970s who forecast that terrorists would blow up jumbo jets in midair with all of their passengers on board, kidnap a head of state, run a boat filled with explosives aground on a crowded beach, set off a bomb weighing several tons in the heart of London's financial district, release nerve gas in a subway at rush hour, unleash biological

RAND's research on terrorism formally began in 1972. Two bloody terrorist incidents that year—the Japanese Red Army attack on passengers at the Lod Airport in Israel and the seizure of Israeli athletes by Black September terrorists at the Munich Olympics—signaled dramatically to the world that a new mode of warfare had begun. Reacting to this new threat, President Nixon created the Cabinet Committee to Combat Terrorism. In turn, the committee commissioned RAND to examine the phenomenon and how it might affect American security interests.

Having been present at the initiation of RAND's research on terrorism 30 years ago, I now have an opportunity for review and reflection, as well as for pointing out some of the unanticipated consequences of our endeavor.

We thought then that terrorism reflected a unique confluence of political events and technological developments that made it likely

weapons, hold a city hostage with a stolen or improvised nuclear weapon, or crash hijacked airliners into the Pentagon and the World Trade Center would have been dismissed as a novelist. Yet all of these events were perpetrated, attempted, or threatened.

One of our first tasks in 1972 was to construct a chronology of terrorist incidents to provide an empirical foundation for the subject of our research. The selection of entries for inclusion in the chronology required us to define terrorism.

We concluded that an act of terrorism was first of all a crime in the classic sense, like murder or kidnapping, but with political motives. We also recognized that terrorism contained a psychological component: It was aimed at the people watching. The identities of the victims of the attack often were secondary or irrelevant to the terrorists' objective of spreading fear and alarm or gaining concessions. The separation between the victim of the violence and the target of the intended psychological effect was the hallmark of terrorism. This definition offered useful distinctions between terrorism and ordinary crime, other forms of armed conflict, or the acts of psychotic individuals.

We defined *international terrorism* as encompassing those acts in which the terrorists crossed national frontiers to carry out attacks—or attacked foreign targets at home, such as embassies or international lines of commerce, as in airline hijackings. Defining international terrorism was a necessary prerequisite for mobilizing international support against terrorism and could be viewed as a noble effort to extend the international rule of law and the conventions governing war.

These definitions enabled us to initiate a long-term analysis of terrorism that RAND has continued to the present day. In the early years, the annual chronologies illustrated trends in terrorist tactics, targets, motives, lethality, and other developments, which in turn provided useful information about various countermeasures. Successive chronologies showed

that physical security measures worked: The frequency of terrorist attacks declined where targets were hardened. But then terrorists merely shifted their sights to other, softer targets. Over time, the lethality of terrorist attacks gradually increased as terrorists motivated by ethnic hatred or religious fanaticism revealed themselves to be demonstrably less constrained and more inclined to carry out large-scale indiscriminate attacks. All these conclusions, now common knowledge, came out of the simple quantitative analysis made possible by the assembled data.

RAND examined the history of embassy takeovers, a terrorist tactic that declined as embassies became better protected and governments became more resistant to terrorist demands, more skillful in negotiating with terrorists holding hostages, and more willing to use force when negotiations failed. RAND also developed a more sophisticated mathematical basis for assessing the risk posed by car bombs, which was used in developing new design and construction criteria for U.S. embassies.

Amid growing concerns about the possibility of nuclear terrorism in the 1970s, the U.S. Department of Energy and Sandia Laboratories asked RAND to analyze the motives and capabilities of potential adversaries of U.S. nuclear programs. Fortunately for society, we did not have a rich history of serious events of nuclear terrorism to examine. Instead, we looked at the combinations of motives and capabilities displayed in analogous events: the most ambitious terrorist attacks, wartime commando raids, high-value heists, incidents of industrial sabotage, and the careers of mad bombers. These analog case studies provided useful insights and suggested a strategy: Nuclear security systems should strive to compel attackers to possess a combination of dedication, know-how, and resources not previously seen outside of national wartime efforts. The Department of Energy later credited RAND with having designed the threat upon which its security programs were based.

Today, U.S. and other world leaders describe terrorism as "war." We must examine the requirements of force protection and the utility of military force to



AP/WIDE WORLD PHOTOS

International Olympic Committee President Avery Brundage speaks at a memorial ceremony on Sept. 6, 1972, for 11 members of the Israeli Olympic team slain by Palestinian terrorists at the Munich Olympic Games.

counter terrorism and to preempt the use of weapons of mass destruction by terrorists or state actors. In addition to military force or the threat of force, the United States has employed sophisticated diplomacy and the manipulation of political and economic payoffs to combat terrorism.

Yet our current arsenal seems inadequate. We must develop new and more effective diplomatic tools and unconventional ways to combat terrorism. We need to understand better the underlying conflicts that give rise to terrorism and to exploit in a systematic fashion the experiences gained in managing and resolving conflicts that have led to terrorism in the Middle East, Northern Ireland, Bosnia, and Kosovo. We also need to do a better job of integrating counterterrorism strategy with other aspects of U.S. strategy.

There is still much to be learned. ■

Related Reading

Countering the New Terrorism, Ian O. Lesser, Bruce Hoffman, John Arquilla, David Ronfeldt, Michele Zanini, Brian Michael Jenkins, RAND/MR-989-AF, 1999, 176 pp., ISBN 0-8330-2667-4, \$15.00.

Make World Health the New Marshall Plan

By Robert E. Hunter, C. Ross Anthony, and Nicole Lurie

Robert Hunter is former U.S. ambassador to NATO and a senior adviser at RAND. Ross Anthony is associate director of the Center for Domestic and International Health Security at RAND. Nicole Lurie, the center's associate director for public health, is a physician at RAND and Paul O'Neill Alcoa Professor of Policy Analysis.

To shape a world congenial to the United States, the American people must put behind them any antiquated illusions of retreating from world affairs and become truly internationalist. This fact was obvious to most, though not all, Americans prior to Sept. 11. Now, the perception should be inescapable. Along with the rest of the world, the United States has entered a new era. Isolation and insulation are gone forever.

For the United States, the challenge today is to turn its unprecedented, incipient power and position in the post-cold war world into lasting purpose and influence by building institutions, attitudes, and relationships that will work for us over the decades ahead because they also work for and benefit others. For America's friends and allies in Europe, helping to turn such a vision into reality will be a critical test of whether the European Union can fulfill its own promise as a major actor in shaping the world of the 21st century. Other U.S. partners in Asia—such as Australia, Japan, and South Korea—are also increasingly concerned with developments in the outside world that relate to health issues.

In this swiftly globalizing world, health issues have risen in significance and must now be integrated into the broad structure of national security. The United States may have the world's most powerful military forces, but they will not suffice if the country can be attacked by bioterrorists or if drug-resistant diseases, crossing borders with migrants and travelers, cannot be contained. The United States may have the world's most powerful economy, but that will not suffice if income disparities continue to widen, health deteriorates, and hopelessness spreads—eroding stability within countries, reducing their ability to play a positive role in the world, and fueling support for terrorism.

Today presents a historically unmatched opportunity for the United States and other advanced nations to take the lead in sharing their capabilities in health and health care with millions of people around the world, especially in poorer countries. Such a vision can become an inspiration of the age—comparable to the vision that created the Marshall Plan for Europe at a time not only of great need but also of great determination to make a fundamental difference in people's lives and in the world's future.

For this idea to take hold, though, something else must happen: an awareness that promoting health abroad is not just a matter of "doing good" or of advancing moral purposes about the future of humanity. Rather, promoting health abroad is also a critical aspect of foreign policy and, indeed, of national security—both for now and for the future.

To shape a world congenial to the United States, the American people must put behind them any antiquated illusions of retreating from world affairs and become truly internationalist.

How Health Changes the World

Better health care is a vital seed of global security. Better health care leads to better-nourished mothers and children, thus lowering infant and child mortality rates. The lower mortality rates, in turn, will ultimately reduce fertility, limit population growth, and raise per capita income. Rising incomes will further improve health status, as individuals are better fed, housed, and educated—and as countries and individuals invest more in public and curative health. Better health, stable population growth, higher incomes, and more education will produce societies that are more likely to be democratic, peaceful, socially tolerant, and valued partners in the world community. These developments would certainly enhance our security and that of other countries.

In contrast, deteriorating health and a dearth of health care in much of the world cripple our own country as well as others. The cross-border spread of disease poses increasing dangers to public health at home as people travel more freely around the globe. In broader terms, poor health hinders the ability of governments to deal effectively with other national challenges, such as education, crime, ethnic tensions, economic development, and political stability. In Afghanistan and large parts of the Middle East, health and health care are woefully inadequate. This predicament stalls economic development, fuels misery and alienation, impedes governance, and helps to breed violence and terrorism.

But now is the moment of opportunity. The United States and the countries of the European Union together represent the largest repository of resources, skills, talents, potential leadership, and international interest in dealing with health as a matter of foreign policy and national security. These countries hold a historically unmatched capacity—in terms of their economic development, sophisticated health systems, medical knowledge, advanced drugs, and other therapies—to make positive contributions to poorer countries facing temporary or chronic health challenges.

For the United States in particular, such an initiative would help offset perceptions of America as a "hegemon," by demonstrating to the world that the United States is taking the lead, with its European partners, to address basic human needs that are no respecters of nationality, geography, doctrine, creed, or ideology. At issue is whether the need will be recognized, the leadership developed, effective means of delivery devised, and the resources mobilized.



AP/WIDE WORLD PHOTOS/B.K. BANGASH

First Patient: Pakistan

Pakistan is an excellent example of how we could use health as a foreign policy tool. The foreign policy stakes in Pakistan are extremely high. It has become a key ally in the fight against terrorism in Afghanistan and beyond. It is hard to conceive of long-term success in Afghanistan without the active support of Pakistan. The country is a nuclear power in confrontation with India, another nuclear power. Pakistan is also a poor country with tremendous health needs and few resources to meet them. For these reasons, U.S. foreign policy seeks to promote a stable Pakistani society—economically, politically, and socially—and to strengthen its ability to deal with extremism and the seedbeds of terrorism.

Health is a critical tool for achieving these goals. Health-based efforts in Pakistan could involve health education programs, provision of clean water and sanitation systems, and concurrent initiatives to build cultural bridges, reduce regional risks, and spur economic and military cooperation with the West. Specific efforts could include the following:

- Prenatal care and nutrition programs for mothers and children. For the greatest foreign policy benefit, these programs should be targeted to areas where Al Qaeda has had

Caught in the crossfire: Amina Bibi, an Afghan refugee mother, holds her malnourished child in Islamabad, Pakistan, at the departure point for Afghanistan on June 19. Bibi was looking for medical help for her child before embarking on the long journey back home.

Making health and health care a centerpiece of U.S. foreign policy would call on the best that America has to offer.



AP/WIDE WORLD PHOTOS/P. ANIL KUMAR

Not the most advanced treatment: An asthma patient is administered traditional medicine inside a live fish at a clinic in Hyderabad, India, on June 8. The medicine is given out only once a year on an auspicious day determined by astrological calculations. Nearly 700,000 patients were expected to receive the treatment this year.

support. Some programs should take the form of partnerships between U.S. and Pakistani health providers to improve understanding between the countries.

- Provision of limb prostheses and other efforts to restore physical function. Because of widespread permanent injury inflicted by the Taliban, these programs could be especially salient.
- Sponsorship of local and regional health care conferences. Ideally, these would engage Pakistani, Indian, American, and other health professionals on neutral soil to share clinical knowledge and build cultural bridges.
- Partnerships between U.S. Air Force medical teams and Pakistani military health facilities.
- Programs to reduce the spread of HIV through intervention and education.

- Programs to transfer advanced pharmaceuticals and medical technologies.
- Incentives to stop or slow the brain drain of health professionals from Pakistan.
- Internet, radio, and television programs to disseminate health information.

Many other interventions are possible. What is important is to set the correct criteria, namely: Are the health interventions likely to fulfill Western foreign policy objectives while at the same time fulfilling the basic human needs of the Pakistani people? Designing health policies in ways that increase human and group freedom can lead to lasting change abroad consistent with our foreign policy objectives.

Since the terrorist attacks, America's first task has been to defend the nation and to end the scourge of international terrorism. The American people are doing what they have always done at times of crisis: They are acting decisively to defend their vital interests and fundamental, democratic values. But at times of crisis, the American people have also done much more: They have seized the moment to create a vision of something far better for the future, even if it cannot be realized at once.

Making health and health care a centerpiece of U.S. foreign policy would call on the best that America has to offer. Treating health as foreign policy is the positive vision of a better world that should complement the defensive actions that we must now take against terrorism. Compared to health, no other area today offers the United States a greater chance to pursue a purposeful vision of the future, to exercise leadership, and to promote our core values and interests. If we are wise—and rarely has wisdom been more called for—promoting health and health care will play a steadily increasing role in our foreign policy. ■

The Role of Social and Economic Development

By Kim Cragin and Peter Chalk

Kim Cragin and Peter Chalk are policy analysts at RAND.

Three countries—Israel, the Philippines, and the United Kingdom—have enacted social and economic development policies to inhibit a resurgence of terrorism within their jurisdictions. The efforts of these countries demonstrate the potential benefits and shortcomings of using social and economic development as a counterterrorism tool.

In each case, social and economic development initiatives were considered integral parts of wider peace processes:

- In Israel, the Paris Protocol of Economic Relations, which provided Palestinians in the West Bank and Gaza Strip with various economic and trade incentives, accompanied the 1993 Oslo Accords for establishing the Palestinian Authority.
- In the Philippines, the 1996 Davao Consensus, which created a limited Autonomous Region of Muslim Mindanao, was underpinned by a wider Zone of Peace and Development dedicated to the enactment of social and economic programs.
- In the United Kingdom, the 1998 Good Friday Accords for establishing home rule in Northern Ireland included a social and economic commitment from the British government as well as special arrangements for communal “peace money” from the European Union.

Each case offers its own unique lessons that lead us to six overall conclusions about the role of social and economic development in countering a resurgence of terrorism.

1. Social and economic development policies can weaken local support for terrorist activities.

Social and economic development policies can contribute to the expansion of a new middle class in communities that have traditionally lent support to terrorist groups. In many cases, this section of the population has recognized the economic benefits of peace and, as a result, has worked to inhibit local support for terrorist activities.

In Northern Ireland, for example, a new middle class (and business elite) has directly benefited from the development programs.

Members of this particular demographic sector have formed important mediation networks to reduce violence between supporters of militant Protestant groups and those sympathetic to the cause of the Real Irish Republican Army. Commercial interest groups have also acted as a brake on Republican and Loyalist violence, discouraging the retaliatory riots and attacks that traditionally occur during Northern Ireland’s tense marching season.

2. Social and economic development can discourage terrorist recruits.

Many terrorist organizations attract new members from communities in which terrorism is generally considered a viable response to perceived grievances. Some terrorist groups also offer recruits financial incentives and additional family support. Social and economic development policies can help to reduce the pools of potential recruits by reducing their perceived grievances and providing the members of these communities with viable alternatives to terrorism.

In Northern Ireland, a new middle class has directly benefited from the development programs.

For example, two development projects in the southern Philippines—asparagus and banana production—have been particularly effective in providing economic alternatives to communities that have traditionally lent a high degree of support to local terrorist groups. In the latter case, private investment has resulted in almost 100 percent employment and transformed an area previously known as “the killing fields of Mindanao” into a largely peaceful community.

Of course, not all terrorist recruits come from poorer communities. Depending on the region and the nature of the conflict, terrorists can just as easily come from the middle or upper classes as well as from the poorer sections of society. In the countries we examined, extremist groups recruited across the class spectrum, with general support from local communities. In several instances, however, inductees were attracted to the financial opportunities that were provided by terrorist organizations, among other motivating factors.

3. Social and economic policies inhibit terrorism only when they are funded adequately.

For social and economic policies to be effective, they need to be funded according to the relative size, geography, and needs of targeted communities. If development initiatives lack sufficient financial support, they are likely to act as a double-edged sword, erroneously inflating the hopes and aspirations of local communities. When these expectations are not met, there is a high chance that social and economic policies will backfire, triggering resentment and renewed support for terrorist violence.

Consider the positive example of Northern Ireland, where considerable public expenditures have

been set aside to target social needs. Since 1997, the United Kingdom has spent an average of \$869 million annually on these efforts. The European Union has added another \$48 million annually, generating a total aid package that has amounted to roughly \$543 per person per year (see table).

The main focus for much of this investment has been large-scale projects dealing with education, health, housing, infrastructure, and urban redevelopment. Many of these initiatives have borne significant dividends. For example, there is now virtually no difference between Catholics and Protestants in terms of access to schools, hospitals, and suitable domiciles. Inner cities in Belfast and Londonderry have been transformed on the heels of sustained regeneration schemes.

A negative example is the southern Philippines, where social and economic aid totaled only \$6 per person per year over a period of five years (see table). This meager sum helps to explain the dismal failure of most of the development policies instituted in Mindanao to inhibit support for terrorism. Compounding the situation, most of the money was channeled to Christian-populated areas, merely exacerbating already existing wealth differentials between Christian and Muslim communities. The combined effect has been to nurture and, in certain cases, intensify support for local insurgent and terrorist groups.

4. The ability of development policies to inhibit terrorism depends on their implementation.

The most successful social and economic development policies are those that are (1) developed in consultation with community leaders, (2) based on needs assessments that reflect the specific requirements of

Social and Economic Development in Northern Ireland, Mindanao, and West Bank/Gaza Strip (annual per capita funding in U.S. dollars)

	Northern Ireland (1997–2001)	Mindanao (1996–2001)	West Bank/Gaza (1993–1999)
Central government	\$515	\$2	\$69
International community	\$28	\$4	\$74
Total	\$543	\$6	\$143

SOURCES: *Executive Budget of Northern Ireland, 2001/02 to 2003/04*; estimates from interviews on the amount of money delivered to Mindanao; Ishac Diwan, Radwan A. Shaban, *Development Under Adversity: The Palestinian Economy in Transition* (Washington, D.C.: World Bank), 1999; Rex Brynen, *A Very Political Economy* (Washington, D.C.: United States Institute for Peace Press), 2000.

targeted communities, and (3) accompanied by disbursement mechanisms that ensure proper fiscal management and nonpartisanship.

For example, the European Union has administered its programs in Northern Ireland in such a way as to avoid inadvertently reinforcing intercommunal hatred. This has been achieved by involving local residents in the design of specific projects and by including a transparent distribution and oversight system. Many schemes also hold local Catholic and Protestant representatives accountable for implementing the projects jointly with members of the “opposing” community. As a result, funding and implementation of particular programs are generally not perceived as underhanded or manipulative.

By contrast, most development policies in the Philippines and in Palestinian areas have failed to meet the needs of local communities, have been plagued by poor project choices, or have been marred by corruption.

In Mindanao, most of the large-scale development schemes funded by Manila were determined without comprehensive, community-based needs assessments. Programs tended to focus on high-profile initiatives that offered a quick return on investment—not projects that communities needed the most. The central government also failed to establish adequate mechanisms to ensure accountability for the development aid that was transferred to Mindanao, much of which was misappropriated as a result of bribery and kickbacks.

In the West Bank and Gaza Strip, development money paid for such large-scale infrastructure projects as the Gaza port and airport, as well as for a high-profile housing complex known as the Karameh Towers, which offered 192 apartments for sale in Gaza for \$30,000 each. That price is far above what an average family in Gaza can pay for a home; the average annual income in Gaza fluctuates between \$1,200 and \$600. Thus, these development schemes had little, if any, relevance to the everyday needs of ordinary Palestinians. While other “quality of life” projects were also instituted, most suffered as a result of mismanagement and corruption.

5. Social and economic development policies can be used as a “stick” to discourage terrorism.

Development assistance can be made conditional on the absence of violence, creating a useful “stick” to discourage support for terrorists. For example, Israeli

authorities have frequently closed off Israel to Palestinian commuters in response to surges of violence from militant groups. Similarly, as a punitive measure for increases in terrorism, the Israeli government has withheld tax revenue due to the Palestinian Authority. To a certain extent, these policies have been instrumental in triggering communal pressure against such groups as the Palestinian Islamic Jihad and Hamas to limit their attacks.

Overuse of this tool, however, carries the risk of negating the overall positive effect of development policies. Indeed, Israeli authorities have used the “closure” tool so often that it has cost the Palestinian economy more than twice the amount of development aid channeled to the area since 1993. This outcome has caused many Palestinians to view the peace process as detrimental, rather than beneficial, to their interests, welfare, and security.

6. Social and economic development policies do not eliminate terrorism.

Although social and economic development—when properly supported and implemented—can inhibit terrorism, development alone cannot eliminate it. Development is most effective when it is incorporated into a multipronged approach that includes wider political, military, and community-relations dimensions. These qualifications aside, there is a noteworthy potential for development policies to reduce the threat of terrorism.

These conclusions have particular relevance to the United States as it embarks on its continuing war on global terrorism. In several regions (e.g., in the Philippines, Pakistan, Indonesia, and Central Asia), the judicious use of foreign assistance could reduce local support for terrorist groups, including organizations that have been tied to wider transnational Islamic extremism. The lessons derived from Northern Ireland, the Philippines, and the West Bank and Gaza strongly suggest that development assistance should be designed within a strategic political and military framework that goes beyond simply distributing aid and remains acutely sensitive to the risks associated with poor implementation and support. ■

In Mindanao, most of the development schemes were determined without community-based needs assessments.

Treat Europe as a Full Partner, and It Will Be

By David C. Gompert

David Gompert is president of RAND Europe.

As President Bush has often said, the United States cannot defeat global terrorism alone. America does not control the global aviation, shipping, financial, energy, health, and information systems that terrorists can exploit and target.

Other than the United States, no global actor is as vital to combating terrorism as Europe, given its economic weight, openness, global connections, and alliance with the United States. Whether in finding terrorists, seizing their money, conducting operations against them, or safeguarding critical infrastructure, what Europe does—and therefore, what Europeans think—matters vitally.

At present, European views of the United States and its policies more closely resemble those of *Sept. 10, 2001*, than the sympathy and solidarity that followed the attacks of Sept. 11. This is *not* because Europeans oppose counterterrorism measures taken, or asked of them, by the United States. Rather, the prevailing view can be traced to an undercurrent of general unease among Europeans about whether the United States is handling its extraordinary power responsibly.

Before 9/11, Europeans perceived their mighty friend as increasingly prone to do what it deemed best for itself regardless of the opinions of and effects on others. In European eyes, U.S. rejection of the Kyoto protocol on climate change, the global land-mine ban, the Anti-Ballistic Missile Treaty, and other international agreements revealed a penchant for unilateralism and an aversion to being constrained—worrisome traits for

the world's superpower. Consequently, Europeans were relieved when the United States struck back at its 9/11 attackers calmly, proportionately, and precisely, and Europeans appreciated that the United States chose to form and work within a broad coalition.

Subsequently, however, smoldering suspicions among Europeans about U.S. intentions have burst into flames because of what has appeared to them to be a ploy to settle an old score with Saddam Hussein by force, using specious claims of Iraqi complicity in the 9/11 attacks. Tangentially, the escalation of the second Palestinian intifada has heightened European concerns that the United States winks at Israeli violations of the Oslo peace accords. And thanks to bad timing, Washington's 30 percent increase in steel tariffs and its almost ebullient rejection of the new International Criminal Court, though unrelated to terrorism, have sharpened the European image of an America engorged with power, living by "the rules" only when convenient.

Yet the record shows that the United States has been scrupulous about multilateral legitimacy and involvement in its counterterrorism campaign:

- The military action in Afghanistan is based squarely on the U.N. Charter and Security Council resolutions.
- U.S. treatment of captured terrorists has been consistent with the laws of war.
- America's efforts to strengthen transnational law enforcement have involved working closely with others and respecting international law and differences in legal systems.
- Even though acting in self-defense, America has gone the extra mile to consult with others in the United Nations, NATO, the Group of Eight, and the Middle East. Streams of U.S. leaders and officials

have come to consult Europeans about every facet of counterterrorism.

For their part, Americans seem to think that Europe has been less than stalwart in countering terrorism. This opinion is as incorrect as it is for Europeans to overlook U.S. multilateralism. Europeans have taken some major steps:

- Aviation safety has been significantly tightened.
- The forces of several allies joined U.S. forces during Operation Enduring Freedom and now play key roles in the International Security Assistance Force in Afghanistan (led by Turkey).
- Several European nations have provided invaluable intelligence on Al Qaeda.
- Most have enacted strong legal, surveillance, and anti-money-laundering measures.
- Most have improved the security of their borders and infrastructure.
- Europeans have increased their preparedness to respond to bioterrorism.
- They have intensified efforts to protect their information networks against cyberterrorism at national and European levels.
- Self-conscious of their limited combat roles in Afghanistan, some allies are modifying their defense plans to transform their forces for expeditionary warfare.

Despite this solid practical record on *both* sides with respect to counterterrorism, the U.S.-European political climate has turned increasingly foul. Much mud has been slung in both directions. Influential Americans have accused Europe of anti-Semitism, while some Europeans whisper that U.S. policymaking is under Jewish control. Such hurtful, harmful charges suggest that this is not just another transatlantic tiff. It reflects the cumulative effects of post-cold war divergence in strategic outlooks, disparity in global responsibilities, and differences in domestic socioeconomic priorities. Unlike previous U.S.-European episodes of discord, this one is not so easily washed away by the reservoir of European gratitude for liberation and protection during the cold war. Anti-Americanism is loudest among those born after D-Day and who barely recall the Iron Curtain.

What accounts for the solid European performance in counterterrorism so far, despite the high-decibel transatlantic bickering? It's simple: Europeans fear large-scale terrorism, too. Their heads, contrary to American cartoons, are not in the sand. Europeans are



AP/WIDE WORLD PHOTOS/CRISTIANA PALLOTTA

An Italian police officer keeps watch as an inspector emerges from a manhole outside the U.S. Embassy in Rome after examining a utility tunnel near the embassy on Feb. 26. Italian police were investigating if holes found in the tunnel walls were linked to a suspected chemical attack. Four Moroccans were arrested.

not countering terrorism to please the United States. U.S. leadership is not propelling European actions. In many European countries, doing America's bidding is not smart politics, given the tarnished U.S. image.

Whether on terrorism or on other matters, Europeans no longer care to be treated like followers. While this may be a hard pill for Americans to swallow, it is more sustainable for Europeans to decide to do *for their own reasons* what the United States would prefer they do. A U.S.-European partnership should be based on shared interests rather than on one partner's kowtowing to the other.

The responsible question to ask now is what the United States can do to sustain and increase European counterterrorism efforts and cooperation. Can counterterrorism be shielded from the ups and downs—mostly downs, lately—in U.S.-European relations? Or must the broader relationship be put on a solid, new footing if the long struggle is to be won?

Whether on terrorism or on other matters, Europeans no longer care to be treated like followers.



AP/WIDE WORLD PHOTOS/SERGEI GRITS

Turkish peace-keepers wait for orders before moving out on a three-hour patrol through western Kabul on June 25. Turkey took over command of the 19-nation International Security Assistance Force from Britain the week before.

The answer is both. Because Europeans will want to strengthen preparedness for their own safety, routine transatlantic cooperation on counterterrorism—expanded U.S.-allied intelligence sharing, technical exchanges, and functional coordination—will go a long way. But the United States needs to understand that the Europeans have their own views on implementation. Rather than expecting the Europeans, the closest of its allies, to be the most complaisant, the United States must expect them to be the most strong-minded, given their capabilities and their own exposure to terror. American flexibility will be at a premium.

Moreover, a new political bargain must be reached if cooperation on counterterrorism is not to become a casualty of wider U.S.-European discord. This bargain should assuage both U.S. concerns about European shirking and European concerns about U.S. unilateralism. Europeans expect a say in addressing the strategic issues surrounding global terrorism, especially in the Middle East tinderbox.

Why should the United States give

them one? Because since 9/11, the Europeans have, in fact, assumed more international responsibility, just as the United States has asked. As Europeans accept a greater burden, the failure to hear and heed their voices

will either discourage them from accepting still greater responsibilities or encourage them to pursue their interests separately.

It should not be assumed that the United States must compromise its security interests in order to act in concert with allies who hold their own views. Americans are not innately right, and Europeans perpetually wrong, when it comes to security problems, including terrorism. For instance, the Europeans may have a point when they argue in favor of differentiating Iran from Iraq instead of lumping the two together. The Europeans also have more economic leverage than the United States in the Middle East.

The next test for U.S.-European security partnership may well be Iraq—a test that could either firm up or undermine the coalition's ability to defeat global terrorism. The Atlantic partners should make clear, with one voice, that Saddam Hussein must either permit prompt, unconditional, and unrestricted inspections of his weapons of mass destruction or face destruction of his power base and, consequently, his rule. If the United States were to accept this as a necessary precondition for military action and the Europeans were to agree to join that action if the ultimatum were not met, a threat to international security could be eliminated and a new model for U.S.-European strategic partnership established.

If the Iraqi menace can be removed by the United States and Europe acting jointly, the prospects for success in the struggle against terrorism, as well as other new dangers, would be brighter than they are today. If not, the days of unity following 9/11 could prove to be the last hurrah of both the counterterror coalition and the Atlantic alliance.

The United States needs at least one strong, reliable partner to deal with terrorism, Iraq, the Israeli-Palestinian conflict, and other perils of the new era. If this was not apparent when the dollar was flying high, when U.S. corporations were the envy of the world, when the American information technology sector defied gravity, and when the federal budget was awash in surplus, it is surely apparent now. There is only one legitimate candidate. The war on terrorism will require the United States to find the humility, and Europe to summon the nerve, to become genuine partners. ■

The Europeans may have a point when they argue in favor of differentiating Iran from Iraq instead of lumping the two together.

Beware of Cracks in the Coalition

By Jerrold D. Green

Jerrold Green is director of the Center for Middle East Public Policy and of International Programs and Development at RAND.

A number of regional challenges that have arisen in the Middle East since Sept. 11 have complicated the ability of U.S. policymakers to focus on the global war on terrorism. Although this war is clearly the first priority of the United States, effectively waging such an ambitious and wide-ranging military campaign depends on extensive global diplomatic, political, intelligence, and economic efforts as well. U.S. military initiatives can potentially be affected by U.S. initiatives in these other spheres.

An overarching concern of those charged with conducting the war on terrorism is the importance of building and maintaining a global coalition. This priority is enormously important both symbolically and practically. For despite the awesome power of the United States, it is inconceivable that even Washington could tackle this monumental task on its own.

What is worrisome today is that U.S. policymakers are involved in a series of political engagements throughout the Middle East, many of which may unintentionally operate at cross-purposes with one another. Although Washington's primary commitment is to the war on terrorism, which is of necessity sustained by a broad-based international coalition, those in Washington must also confront a number of other challenges in the Middle East, the successful execution of which may possibly come at the expense of the same antiterrorism coalition that the United States has so painstakingly

constructed. Granted, not all crises can be resolved by the same coalitions, and some partnerships can be sustained only at a cost to others. But nowhere in the world is this complexity more evident or perilous than in the Middle East.

Afghanistan: Where Cracks Can Lead to Chasms

The United States has committed itself not only to the destruction of the Taliban and Al Qaeda but also to the reconstruction of Afghanistan. The successful *loya jirga*, or traditional assembly, paved the way for the government of Hamid Karzai to exercise power with the support of the United States.

With the ascent of Karzai, as opposed to other Afghan competitors, tensions have inevitably arisen within Afghanistan as well as among some of its neighbors. These tensions complicate U.S. involvement in Afghanistan to some degree and potentially even U.S. relations with the neighboring states.

Perhaps the country most outspoken about its concern with events in Afghanistan has been neighboring Iran. As the Karzai government consolidates its power, other regional actors are likely to express concerns of their own, including possibly Pakistan, with its deep, long-standing, and not necessarily constructive interests in and ties with Afghanistan.

The process of nation building, particularly in a setting as fractious as Afghanistan, necessarily provides power to some while depriving it of others.

U.S. policymakers are involved in a series of political engagements throughout the Middle East, many of which may unintentionally operate at cross-purposes with one another.

Invariably, these internal groups and interests have external corollaries. Thus, although we cannot predict with any certainty who will lose and who will win in

The U.S. quest for regional support against Saddam

Hussein may be at odds with the U.S. campaign against terrorism.

Afghanistan, we can be certain that the ensuing power struggle will affect Afghanistan's neighbors and thus Washington's ability to keep intact a regional coalition against terrorism as well.

To complicate matters further, signals from the White House seem to indicate that the United States may cease its attempts to engage the moderate wing of the Iranian government as represented by

President Mohammad Khatami. These signals echo President Bush's earlier assertion that Iran, along with Iraq and North Korea, belongs to an "axis of evil" hostile to the United States. The implications of these messages are unclear; however, President Khatami has already responded to them in stinging language. At the very least, policymakers must now consider how the increased tensions between Washington and Tehran

could possibly interfere with U.S. aspirations in surrounding countries.

Iraq: Where the Coalition Collapses

The Bush administration has made no secret of its eagerness to see the reign of Saddam Hussein and his clique come to an end. Although Saddam has few admirers in the Arab world or in Europe, Washington's aversion to him has become increasingly aggressive, whereas the others' aversion is theoretical rather than practical.

A serious debate is raging in Washington over the degree to which the United States should forcefully hasten the political demise of Saddam. The debate in Washington obscures a larger problem: The U.S. quest for regional support against Saddam Hussein may be at odds with the U.S. campaign against terrorism. It is highly revealing that although a number of senior members of the Bush administration have traveled the Middle East in general and the Arab world in particular to seek support for U.S. military action against Iraq, the results have been uniformly disappointing.

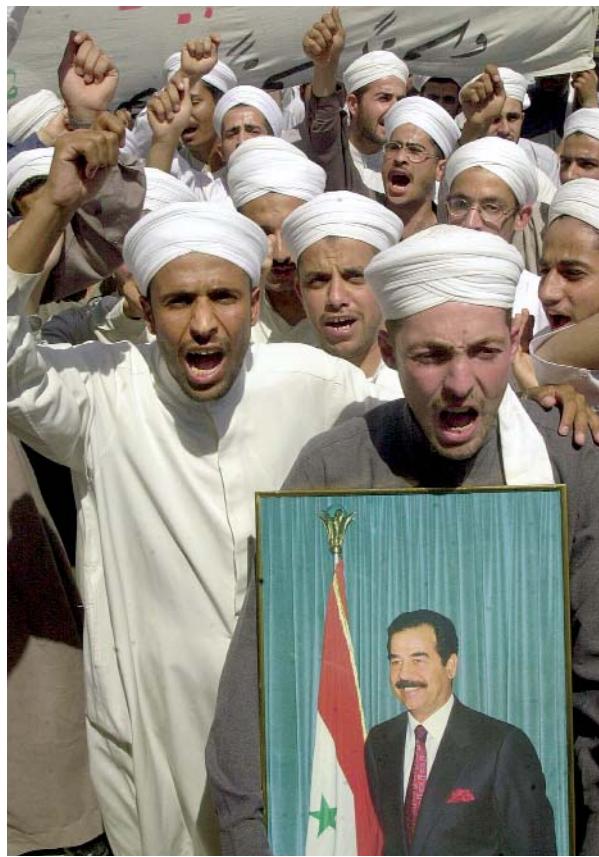
Most Arab leaders argue that the United States should make progress on the Palestinian front before storming the Iraqi front. This recommendation is somewhat disingenuous, largely because the Arab leaders themselves offer little tangible assistance to the Palestinians, and their admonition is offered simply as an excuse to justify their opposition to U.S. military action against Iraq. What the Arab leaders really fear, of course, is the response of their own people and the ensuing fallout should they support U.S. military action against a fellow Arab state.

While the debate on military action against Iraq is complex, one clear policy consideration emerges. That is, any attempt by the United States to forcefully unseat Saddam Hussein must be weighed against the possible risks to the U.S.-led coalition against international terrorism. In that coalition, support for the United States by an assortment of regional powers in the Middle East is imperative but far from certain or immutable.

Israel and the Palestinian Lands: Where There Is Not Yet a Coalition

Here again, U.S. policymakers are confronted with tensions and cross-pressures, which make U.S. regional diplomacy on behalf of the coalition against international terrorism exceedingly difficult. The United States has been confronted with serious deterioration in the

Students of Islamic studies in Baghdad, Iraq—one carrying a picture of Iraqi leader Saddam Hussein—chant slogans in support of the Palestinians on April 21.



AP/WIDE WORLD PHOTOS/JASSIM MOHAMMED

Palestinian-Israeli sphere, with a spate of catastrophic suicide bombings against Israel and a correspondingly forceful Israeli military response. We've seen the military reoccupation of parts of the West Bank, the building of a wall between Israel and its Palestinian neighbors, mass arrests, restrictions on the movements of Yasser Arafat, and other attendant military actions.

Although the United States wishes to play the role of an honest broker, its Arab coalition partners are more sympathetic to the cause of the Palestinians than they are to the plight of the Israeli people and Ariel Sharon. This situation further complicates U.S. attempts to defuse the growing crisis between the Israelis and Palestinians.

President Bush has offered a new U.S. peace plan, but it is highly controversial and seems certain to influence his ability to operate elsewhere in the Middle East. Put simply, Bush has come out in favor of the gradual creation of a Palestinian state, which raises concerns in Israel. At the same time, Bush is insisting that the Palestinians replace Yasser Arafat with another leader who is less duplicitous and more amenable to making peace. The latter part of the formulation has discomfited an Arab world that is concerned about Washington trying to decide who should lead the Palestinian people, regardless of Washington's unambiguous support for a Palestinian state. In addition, the Arab world is concerned about Washington's inability as yet to provide details about a Palestinian state or a timetable for this effort.

How and if these divisions will affect other U.S. regional interests is as yet unclear. There is something in the Bush peace plan to satisfy both Israelis and Arabs, and yet there is ample room for disagreement and conflict as well. Although the new Bush plan may appear to threaten U.S. ties with Israel and/or with the Arab world, the ties are unlikely to unravel. The situation is so potentially inflammatory that most parties appreciate the need for Washington to do something. Beyond that, however, whatever Washington does may be subject to criticism within the Arab world.

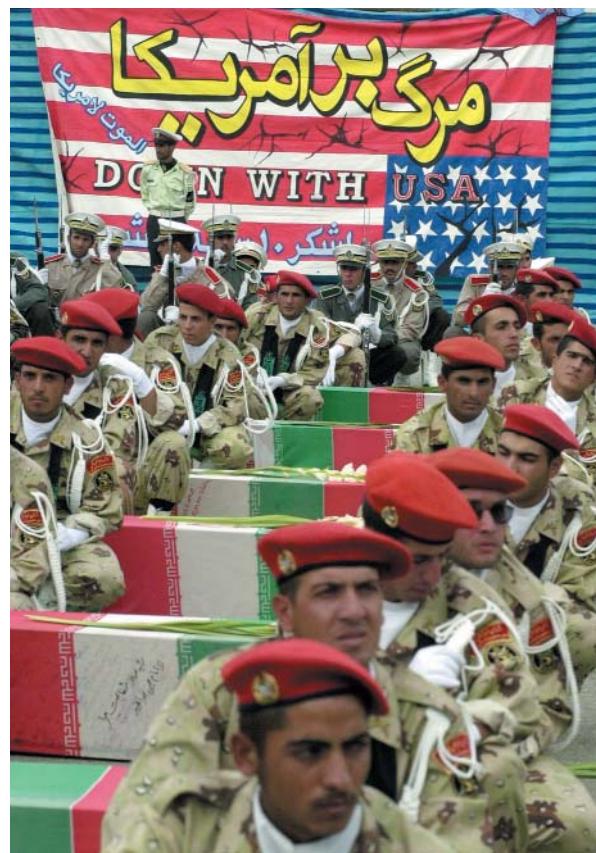
Washington: Where Cross-Purposes Collide

Although none of the above challenges are new, the fact that they have arisen simultaneously presents the Bush administration with a unique and particularly difficult set of policy decisions to juggle. There is a good deal of uncertainty within the administration on how

to deal with each of these issues individually. When aggregated into an entanglement of regional foreign policy challenges with global implications, they become much more complicated and potentially even baffling.

Will progress be made on the Palestinian-Israeli front at the expense of the international coalition against terrorism? Or at the expense of U.S.-Arab or U.S.-Israeli relations? To what degree does the threat of Saddam Hussein justify jeopardizing the coalition against terrorism or other U.S. regional interests? For example, action against Saddam might make it more difficult to negotiate an end to the Palestinian-Israeli conflict, because Arab antipathy to the United States could drive Arab states to oppose the Bush peace plan—which itself is not free of controversy.

An endless number of possible scenarios of this sort can be played out, all of which highlight how difficult the situation is for the Bush team. It is forced to deal with the daunting dangers of international terrorism, a newly confident Iraq, and a festering Israeli-Palestinian conflict. It remains to be seen how effectively President Bush and his advisers can make their way through this enormously threatening regional environment. ■



In a July 24 ceremony in Tehran, Iranian soldiers carry coffins of prisoners killed during the Iran-Iraq war of 1980-88. The two countries exchanged the remains of soldiers on July 21, 2002. In the background, an upside-down American flag reads, "Down with USA."

Anti-American Violence

An Agenda for Honest Thinking

By C. Richard Neu

Richard Neu is assistant to the president of RAND for research on counterterrorism.

Military action is an essential element of the struggle against terrorism. But military action alone cannot neutralize all those who wish America ill. Improved defenses against terrorist attacks are also essential. But free societies will always remain vulnerable to determined attackers. Making America safer from terrorists will also require determined action to get at the root causes of anti-American violence. What motivates terrorists to perpetrate violence against Americans? Who supports or tolerates such violence, and why? And most important, what can Americans do to reduce the motivations for this violence? An effective long-term strategy to defeat terrorism must be built on honest thinking about these potentially painful questions. But to date, these topics have attracted little systematic analysis.

America and Islam

Certainly, not all Muslims wish America ill. Just as certainly, not all of those willing to unleash or to tolerate violence against Americans are Muslims. Nonetheless, distrust, suspicion, misunderstanding, and animosity between America and at least some parts of the Muslim world cannot be ignored. Today's uncomfortable reality is that the most dangerous terrorist threats to Americans seem to arise from societies and groups where Islam is the dominant religion. A good initial focus for thinking about the roots of anti-American violence will be a consideration of the divide that seems to have opened between America and some

parts of the Islamic—and especially the Arab—world.

The challenge of understanding and resolving differences between Americans and Muslims is a daunting one. But good works and good luck have won over populations that were once distinctly anti-American to an appreciation, if not a full acceptance, of American values: Japanese and Germans after World War II, Vietnamese after the Vietnam War, Russians and East Europeans after the cold war. And most recently, perhaps, the Chinese.

The Key Questions

Understanding the root causes of Islamic anti-Americanism and crafting policies to discourage its violent manifestations will require consideration of at least seven fundamental questions:

1. *How extensive is anti-American sentiment in the Muslim world?* Is a proclivity toward anti-American violence characteristic of only isolated rogue groups that might, at least in theory, be hunted down and destroyed? Or are such sentiments widespread in the Muslim world, requiring a broad campaign of action and public diplomacy to win over hearts and minds?

2. *Too much modernity, or not enough?* Some writers have focused attention on the disappointments and humiliations suffered by Muslims—and especially Arabs—in recent years. Many Muslims recognize that something has gone wrong with their once-proud and once-successful culture. And an increasingly strident debate has sprung up about the causes of recent impotence and dysfunction. Often, this debate pits Western-oriented modernizers against Islamic fundamentalists who seek closer adherence to traditional Muslim principles. How much of what is manifested as rage against America grows out of a desire to recapture past Arabic and Islamic glory? Can Americans help to reconcile Western modernity with Muslim tradition and achievement?

3. Are American values a threat? In many eyes—and not just in the Muslim world—America represents an aggressive manifestation of a particular set of political values: democracy, economic liberalism, individual rights and responsibilities, strict separation of religion and governance, and a willingness to question established beliefs and practices. More invasive may be American popular culture with its secularism, consumerism, promiscuity, freedom for women, and suspicion of authority. America's dominance in the modern world makes American values impossible to ignore. Can modernist American values and traditional Muslim values coexist? Or are Muslim fundamentalists correct that the dominance of American values poses an existential threat to Muslim societies? We cannot, of course, change our values. Can we convince Muslims that our values pose no threat?

4. Does poverty breed terrorism? Not all those who wish to harm Americans come from the ranks of the poor, the unemployed, or the uneducated. Yet it is hard to dismiss the hypothesis that forced idleness, little or no hope for a materially better future, and the sense of impotence that comes from deprivation will breed at least sympathy for those who attack the richest and most powerful country in the world, a country whose wealth and power depend crucially on energy resources derived from the Muslim world. Can economic development and poverty reduction decrease support for terrorists?

5. Is it the company we keep? Some Muslims find themselves estranged from their own governments, which they see as corrupt, oppressing their own peoples, and selling out to false Western ideals. U.S. support for these regimes is sometimes seen as a cynical exchange for access to energy resources and military basing rights. To what extent does anti-American sentiment in the Muslim world reflect not a rejection of American values and policies but outrage at American support for regimes of dubious competence or legitimacy? Can we—should we—push these governments toward effective reform?

6. Can Americans be secure if Israelis and Palestinians are not? Certainly, the continuing conflict between Palestinians and Israelis complicates relations between America and the Muslim world. If the Israeli-Palestinian conflict persists, must America remain a target for terror? And if this conflict were somehow resolved, how much Muslim antipathy toward America would still remain?

7. How can we fight terrorists and still win friends? Military action against terrorists, pressure on foreign governments to round up suspected terrorists and their sympathizers, and more aggressive efforts to defend Americans against terrorism will inevitably harden some hearts against America and create propaganda opportunities for those who portray America as unjust, biased, or evil. Indeed, suspicion of—if not hatred for—the United States in the Muslim world may well have increased in the past year. How can we pursue the necessary war against terrorists without losing the broader struggle against anti-American sentiment?

Why This Is Hard

These questions are intellectually challenging. The Muslim world is extremely diverse. Few conclusions about the roots of anti-Americanism will be generally valid. And the extreme exceptions may be the most relevant cases in thinking about how to counter terrorism.

Moreover, candid discussion of these questions—discussion that reflects the broad diversity of relevant viewpoints—will not be easy.

- Difficult and potentially awkward questions relating to the conflict between Palestinians and Israelis will have to be faced.
- Consideration of some key U.S. bilateral relations—with Saudi Arabia, with Egypt, with Pakistan, and with Israel, for example—cannot be avoided. The governments involved may not welcome this kind of scrutiny.
- Candid consideration of the strengths and weaknesses of various Muslim societies will be essential. Just as essential will be unsentimental reflection on what American values and culture do and do not offer to the rest of the world.

These are touchy subjects, and the boundary between clear-eyed honesty and cultural myopia is narrow.

Throughout its history, RAND has taken on the hard analyses that are key to the national interest. Understanding the root causes of anti-American violence and what can be done to eliminate them will require all of RAND's intellectual rigor, our objectivity, and our ability to reach out to the international community. We're looking forward to the challenge. ■

The boundary between clear-eyed honesty and cultural myopia is narrow.

Control Biological Weapons, but Defend Biotechnology

By John Parachini

John Parachini is a RAND policy analyst.

The fall 2001 anthrax attacks in the United States posed a number of unprecedented policy challenges that have yet to be resolved. The very nature of the attacks has highlighted the critical need for greater synergy among the fields of security, public health, law enforcement, science, and biotechnology. Specifically, given how biological weapons can be clandestinely produced and delivered much more easily than other weapons, the biological threats present unique challenges for defense, intelligence, arms control, and public health.

While the attacks did cause five tragic deaths, the greatest impact was psychological and political. Despite several years of exercises preparing to respond to such attacks, government authorities at all levels seemed ill prepared for the crisis. We must improve our public management of bioterrorism incidents. Effectively managing the psychological impact of such incidents may largely reduce the value of biological weapons as a means of terror.

Fortunately, some measures to address these challenges offer dual-use benefits against natural outbreaks of disease, which are more likely than unnatural outbreaks. In many instances, improving public health capabilities to prevent and to treat naturally occurring outbreaks will also be valuable for addressing intentionally caused outbreaks.

Ultimately, though, the threat of biological terrorism cannot be sufficiently countered by even a seamless cooperation among all of the pertinent experts and government agencies from any single country. The unprecedented ease with which biological pathogens can be transported around the globe calls for equally unprecedented global initiatives to contain and regulate them. At the same time, it is important to make sure that in our rush to address the threat of biological weapons, we do not adopt measures restricting legitimate scientific and commercial endeavors that generate tremendous societal value and may also be critical to reducing our vulnerability to biological weapons.

Anthrax Lessons

There are at least three possible origins of the sophisticated strains of anthrax that were mailed to government leaders and the media last fall. The origin could have been either a hostile state, a terrorist group acting on behalf of a hostile state, or an individual or group acting independently or with assistance from scientists willing to sell their expertise. But no matter the origin, an important threshold has been crossed that security officials and analysts previously considered unlikely. It was once generally believed to be too difficult for terrorists to produce sophisticated biological weapons and too risky for states to use them clandestinely against the United States. These assumptions are no longer valid.

The ongoing search for the perpetrator of the attacks has further highlighted the many sources of biological materials that countries and terrorists can draw upon to acquire the materials needed for making

biological weapons. The same materials, expertise, and equipment that are vital to the biotechnology revolution, which offers tremendous promise, can also be used for tremendous evil. Controlling the supply of deadly biological materials requires a fine balance between enhancing security and yet not unduly constricting legitimate scientific and commercial research.

For purposes of security, the attacks raise critical questions about the international mechanisms for stemming the proliferation of biological weapons, deterring states and terrorists from using them, and punishing those who do use them. Eliminating the risk of attacks with biological weapons is unlikely, but a combination of national and international measures can make it more difficult for rogue states and terrorists to acquire the weapons and may also dissuade and deter their use.

Tighten Control over Materials

A new global effort must be made to prevent the proliferation of dangerous pathogens to irresponsible states, organizations, and individuals. There are almost 100 collections of biological cultures in the United States and more than 450 collections around the world. Standards for physically protecting the cultures and for accounting for their distribution vary widely. Control over culture collections, research facilities, and outbreak sites needs to be enhanced worldwide.

In 1996, the United States improved the oversight of its cultures after an individual with ties to antigovernment groups fraudulently sought disease cultures from one collection. These oversight measures still contained considerable loopholes and lacked effective enforcement. According to recent amendments to the USA Patriot Act, which Congress swiftly prepared after Sept. 11 and the anthrax attacks, the United States will soon require the registration of all facilities that handle dangerous biological agents, require background reviews of people who work with such agents, and prohibit researchers from countries that support terrorism from working with these agents.

Beyond the United States, it is frightening to note what little regulation other countries have imposed governing the transfer, storage, and use of dangerous pathogens. The international community must strive to strike a balance between allowing pathogen commerce for legitimate commercial and scientific purposes and preventing the transfer of deadly materials to people who will use them as weapons.

Update the Global Legal Regime

The current international legal regime is inadequate for the evolving problem of biological weapons proliferation, because the legal regime focuses on the activities of states, not subnational groups or individuals. The Biological Weapons Convention, which was negotiated three decades ago at the height of the cold war, was once a landmark accord. But both the international system and the field of biotechnology have changed dramatically since then.

An obvious imperfection of current nonproliferation accords is their aim to prevent the proliferation of dangerous weapons to states. When these accords were negotiated, the problem of terrorists or rogue individuals assembling the capability to wield such weapons was viewed as highly unlikely. Even though terrorists have acquired or used biological weapons in only a very few cases, there are a number of indicators that this historical trend may be changing. Thus, some experts have proposed an international accord to criminalize the possession, transfer, and use of chemical and biological weapons by individuals. This accord would provide the international legal framework to prosecute anyone, from the terrorist to the head of state, who uses chemical or biological weapons. This initiative seeks to fill a void in the existing international legal framework.

The mapping of the human genome and the anthrax attacks are poignant indicators of the importance that biotechnology can play in the 21st century—for good or ill. The challenge before us is to minimize the potential for the material of life to be used to inflict death. ■

A new global effort must be made to prevent the proliferation of dangerous pathogens.

Related Reading

"Access and Control of Dangerous Biological Materials in California," John Parachini, in K. Jack Riley and Mark Hanson, eds., *The Implications of the September 11 Terrorist Attacks for California: A Collection of Issue Papers*, RAND/IP-223-SCA, 2002, pp. 65–75, no charge.

Anthrax Attacks, Biological Terrorism, and Preventive Responses, John Parachini, RAND/CT-186, 2001, 17 pp., \$5.00.

Combating Terrorism: Assessing the Threat of Biological Terrorism, John Parachini, RAND/CT-183, 2001, 12 pp., \$5.00.

"Deny Victory to Anthrax Terrorists," *International Herald Tribune*, Oct. 17, 2001.

Global Implications for the U.S. Air Force

By Edward R. Harshberger

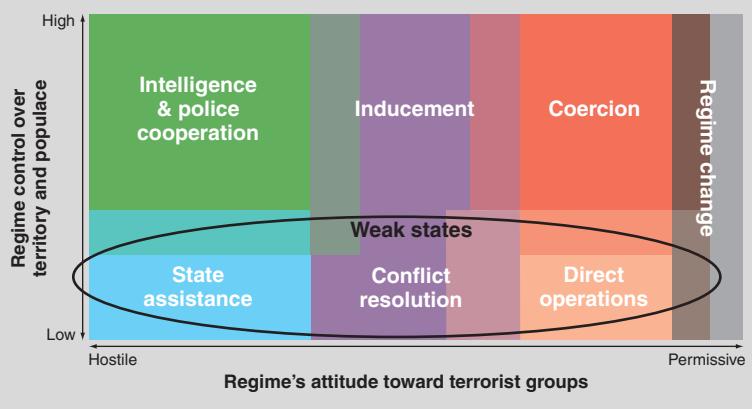
Edward Harshberger, director of the Strategy and Doctrine Program of Project AIR FORCE at RAND, is leading a study of U.S. Air Force counterterrorism strategies.

Since Sept. 11, the United States Air Force (USAF) has played a critical role in America's response to terrorist threats, from protecting our nation's skies to patrolling the mountains of Afghanistan. Despite early successes and the general absence of major attacks, challenges remain.

New Demands on the Military

The figure gives a fair (and daunting) illustration of what the future holds for U.S. military operations. The nature and scope of overseas operations will depend on the strength of the foreign states involved (vertical axis) and their relation to terrorists (horizontal axis).

More U.S. Military Tasks Are Likely in Weak States



Strong regimes that are hostile to terrorists fit in the upper left corner. These states are candidates for close cooperation in intelligence and police matters—and relatively low levels of military activity. Strong regimes that are permissive of terrorists (upper right corner) are candidates for military coercion, up to and including regime change. These operations were central elements of pre-9/11 strategy and force sizing constructs.

The newly important military tasks stem from the increased likelihood of significant operations in fundamentally weak states (lower half of figure). These operations will include a wide range of activities, depending on a regime's attitude toward terrorist groups. The operations could include the following:

- state and security assistance (combined military operations, military advisers, training, military-to-military contacts, humanitarian operations)
- conflict resolution and stabilization (peacekeeping, peacemaking)
- direct military operations on a state's territory without its consent.

These operations may occur simultaneously or in combination and are likely to take place in locations that differ greatly in environment, climate, geography, and threat characteristics.

Recent history is powerful proof of the growing importance of these military tasks. The fight against Al Qaeda and other terrorist groups has already begun to extend the reach of these kinds of operations beyond Afghanistan and Pakistan (e.g., to the Philippines). Here is a list of some of the countries where the U.S. military could become involved in uprooting terrorist groups over the coming years: Algeria, Bosnia, Colombia, Ecuador, El Salvador, Honduras, Indonesia, Kenya, Nicaragua, Panama, Peru, Somalia, Sudan, Tajikistan, Uzbekistan, and Yemen.

These far-flung and diverse locations are logical extensions of our current campaign against Al Qaeda and other globally networked and highly dangerous terrorist groups. Prior to Sept. 11, involvement of U.S. military forces in almost any of these locations (while still engaged in Bosnia, Kosovo, and Operations Northern and Southern Watch) was virtually unthinkable. That said, multiple and simultaneous U.S. military operations have been the norm since 1990 and are likely to remain an ongoing feature of the post-9/11 world.

New Demands on the USAF

The array of newly important military tasks and operating locations will have a dramatic impact on select elements of the USAF. First and foremost, these operations will necessitate the development of effective international coalitions, and the U.S. military (including the USAF) is a potent instrument in this regard. At a minimum, the USAF can expect heightened demand for military coalition support activities (e.g., military-to-military contacts, training, education, and exercises) and an increase in overseas temporary deployments for USAF personnel with language and diplomatic skills.

USAF combat operations in many countries will take place in complex environments and terrain and will confront low-signature, deceptive targets (individuals and small groups) while being constrained by tight rules of engagement. This implies potentially large disparities in the relative weight of effort between intelligence, surveillance, and reconnaissance (ISR) functions and strike functions. Highly *persistent* ISR operations will be needed, coupled with rapid, effective analysis of information to enable brief, intense combat engagements. These efforts will place increased demands on precisely the kinds of "high demand/low density" assets (and their associated career specialists) that are in shortest supply today.

The need for persistent surveillance and precise attacks at an expanded number of forward locations should motivate a continued search for new concepts and technologies. This can and should include redoubled emphasis on high-resolution, persistent ISR technologies, such as the Predator and Global Hawk unmanned air vehicles (the former used in both Kosovo and Afghanistan, the latter used in Afghanistan). The search should also include the pursuit of increasingly sophisticated guidance systems for kinetic weapons, as well as the expanded development by the USAF of highly discriminate methods of attack,

including nonlethal weaponry.

The war in Afghanistan has placed more importance than ever on the USAF's plans to modernize its airlift and aging air tanker fleets. The war has produced the third largest airlift operation in history (in terms of tonnage) after the Berlin Airlift and Operation Desert Shield/Desert Storm. For Operation Enduring Freedom, *all* supplies to forward locations were delivered by air for the first six months—a first in history.

This unprecedented and unanticipated effort was aided by new combat support approaches, collectively termed *agile combat support*, that were necessitated by the significant increase in operations tempo over the past decade. The use of centralized intermediate repair facilities has been a key success to date, enhancing support activities and minimizing in-theater footprint. However, a future environment that entails relatively small-scale but lengthy (and sporadically intense) operations will generate new stresses on the system and require more innovation. Overseas activities—even when they involve no actual combat—will also raise a host of force protection concerns with potentially serious resource implications.

The rapid, agile, and effective performance of any military depends on the right mix of well-trained personnel. The USAF total force was already under stress prior to Sept. 11. With existing resources, U.S. defense decisionmakers may have to choose: Either accept more risk while maintaining the same level of effort, or limit the number or duration of operations in which the U.S. military will participate. Unfortunately, the latter stance seems at variance with the demands of U.S. national security strategy, particularly with respect to a long-term war against terrorism. Manpower reductions appear difficult to support, at least in the short term.

Finally, it is important that the military demands of counterterrorism strategy be considered in context. Military operations are not the primary means for countering terrorism, and other demands on the military remain. An increased emphasis on combating terrorism will not, in all likelihood, prompt *wholesale* changes in the USAF's force structure. Nonetheless, an open and active search for new concepts and approaches—coupled with resources—will remain essential for the USAF to maintain its flexibility and effectiveness in the days ahead. ■

The war in Afghanistan has produced the third largest airlift operation in history.

A Future of Sustained Ground Operations

By Bruce R. Nardulli

Bruce Nardulli is a RAND policy analyst who is leading a study on the role of the U.S. Army in fighting the global war on terrorism.

As overseas deployments increase, so will overseas support requirements, including the need for overseas bases and widely distributed logistics.

Almost a year has passed since the president declared the war on terrorism the nation's top security priority. Considerable uncertainty remains as to the scale, scope, and pace of that war. Yet it is already clear that waging a long-term global war on terrorism will entail the extensive use of American ground forces in a wide variety of missions. The U.S.

Army, in particular, will encounter more frequent deployments, more long-term deployments, and a demand for additional counterterrorism capabilities.

To prepare for the future, the army needs to respond in two overarching ways. First, it must consider options to meet the likely increase in the tempo of operations, continued high demand for scarce military specialties, and expanded requirements to support operations overseas in numerous new locales. Second, the army should adjust some of its light-

weight and medium-weight capabilities (so-called "light" and "medium" forces) to reinforce the offensive campaign against terrorism with increased speed and modified combat power. The army must undertake these efforts while simultaneously maintaining its

readiness to fight major regional wars and transforming itself for future warfare.

More People, Places, and Things

The army already has long-term commitments of troops in such places as Bosnia, Kosovo, and the Sinai. In all likelihood, these will continue. If anything, the events of Sept. 11 have increased the pressure on U.S. forces to remain as a stabilizing influence. Added to these ongoing commitments will be substantial military operations against terrorist groups, such as the operations in Afghanistan. About 6,000 U.S. Army soldiers are committed to operations there, indicating the scale and duration of deployments that can be entailed in rooting out terrorists and their infrastructure and preventing their reemergence. Other sizable rotational deployments are possible, not only in Central Asia but also in Southwest Asia and Africa.

Because the United States plans to conduct the war on a wide front, the army will likely carry out other types of operations as well. Stabilizing volatile regions will require potentially extended peacekeeping operations. Expanded training of foreign militaries in counterterrorism operations is and will continue to be a major element of the U.S. war effort. Such operations are likely to include growing involvement with new partners and in geographic areas previously of little or no interest to the United States. As terrorist groups gravitate toward unstable regions or dysfunctional states for secure bases of operations, U.S. counterterrorism efforts will blend into a host of much broader counterinsurgency and foreign internal defense activities. Friends and allies threatened by terrorists will also expect our support, as is now the case in the Philippines and Georgia. U.S. Army forces will be involved in all of these activities.

Offensively, some counterterror operations will require new mixes of U.S. military capabilities and responsiveness. Certain classes of targets are likely to require different combinations of ground units. For example, a large complex of well-defended terrorist installations in difficult terrain, comparable to Tora Bora in Afghanistan, might require an extended operation of robust forces. Or the mission might call for a simultaneous attack on multiple sites spread across a large area. Many of these operations will occur on short notice and require very rapid response. National decisionmakers will insist on having the capability to attack high-value but fleeting targets in far-flung places with high confidence of success. The ability to seize or neutralize weapons of mass destruction will be especially important in this regard.

How the Army Should Respond

The U.S. Army presently conducts rotational assignments that include Bosnia, Kosovo, and now Afghanistan. Our analysis indicates that the overseas deployment of more than four active component brigades from the United States will undercut preparedness for a major theater war. Each additional brigade deployed would further erode readiness and significantly stress the force. The reasons for this large effect are numerous and complex, much of it having to do with peacetime policies regulating the number of soldiers available for overseas deployment and the continuing demands of training. The army needs to explore its options for expanding the rotation base, either by drawing on overseas or reserve brigades, modifying peacetime personnel policies, or possibly increasing the number of soldiers in the active component.

Rotational deployments also exacerbate the shortage of so-called "high demand/low density" specialized skills (such as special forces, civil affairs, intelligence, and linguistics), because the deployments compete for these assets with major theater war preparations. Therefore, the army will need to alleviate these pressures, perhaps by expanding cross-training, modifying the skill mix of the active force (trading some maneuver units to fill specialized skill slots), or seeking an increase in the number of active soldiers in specialized skill areas.

As overseas deployments increase, so will overseas support requirements, including the need for overseas bases and widely distributed logistics. The army is a major stakeholder in the development of overseas



U.S. ARMY/PFC. MATTHEW ACOSTA

prepositioning and basing arrangements, and it needs to articulate how the war on terrorism will change its future support requirements.

New offensive capabilities can be added incrementally. For example, the army can enhance its Special Operations Forces with additional capabilities in such key areas as special operations aviation. The army could also expand the special operations training of its ranger and light infantry units to reduce the burden on Special Operations Forces. To provide forces that are lethal and well protected but that can also strike quickly against difficult and time-urgent targets (such as well-defended weapons of mass destruction), the army should take advantage of the opportunities emerging from the new "Stryker" brigades and advanced future technologies.

Elements of the Stryker brigades—which are now entering the force as part of the army's transformation toward lighter, more mobile, and more lethal units—could be used to create a battalion-sized task force that would integrate Special Operations Forces, rangers, combat aviators, and mounted infantry troops using wheeled vehicles instead of tanks. Such a force could provide the needed mix of combat power and yet could deploy very rapidly from overseas bases or from the United States.

Perhaps the biggest overall challenge for the army is to provide the capabilities the nation demands for the war on terrorism while also meeting its many other responsibilities. Balancing these efforts and their risks will be a central feature of army decisionmaking in the years ahead. Drawing on its existing and transforming force structure, the army can avail itself now of opportunities to meet that challenge. ■

U.S. Army paratroopers from the 82nd Airborne Division march across Kandahar Airfield moments after arriving on a C-17 transport plane on July 10.

The army could expand the special operations training of its ranger and light infantry units to reduce the burden on Special Operations Forces.

Hard-Shelled, SOF-Centered

The Synergy of Might and Mind

By Gordon T. Lee

Gordon Lee is a research communicator at RAND.

The message received by U.S. Navy Captain Robert Harward at Camp Rhino outside Kandahar in late February was cryptic but urgent: “Mullah K has left the building. He’s on the move.”

With that message—sent by the operators of a Predator surveillance drone circling above the rugged hills of Afghanistan's Paktia province—Harward, the top-ranking Navy SEAL in Afghanistan and a former RAND Navy Fellow, gave the green light to a lightning-

fast operation that resulted in the capture of a key Taliban leader, Mullah Khairullah Kahirkhawa.

"We planned, designed, and executed that operation with one hour's notice," said Harward, who *ND Review* for his first on-the-record returning to the United States from *ng Freedom.*

“Once we heard he was moving, my guys went off and put together a plan in 30 minutes. And 30 minutes later, it was all over. The whole operation, coordinating 40 U.S. and Danish special forces, was a great example of how all the training we’ve had in combined and joint operations can work and succeed in the field.” The effort involved U.S. Air Force Special Forces, Danish Special Forces, U.S. Navy SEALs, and U.S. Army conventional air assets.

“It was a real testament to teaming,” said Harward.

The Afghanistan campaign convinced him that Special Operations Forces (SOF), if given appropriate and timely support by conventional forces, will play an increasingly important role in the war against terrorism. "Afghanistan confirmed what I studied and was thinking about while I was at RAND," Harward said. "In the future, the conventional navy's support of and involvement with SOF will be a growth industry."

From Calm Thought to Quick Action

Harward has spent 18 years as a member of Naval Special Warfare (NSW), the branch of the U.S. Navy that encompasses elite SEAL commandos and special warfare combatant crew members (individuals who are specially trained boat operators). His assignments have included Kuwait and Bosnia. His string of overseas deployments was interrupted in 1998–1999, when he accepted an assignment as a RAND Navy Fellow in Santa Monica, Calif.

While Harward was at RAND, his research focused on redefining the role of Naval Special Warfare in the 21st century. He identified a potentially larger role for SOF in future military engagements and called upon the navy to consider devoting more of its conventional assets to such unconventional missions.

In August 2001, he was named commander of NSW Group ONE, based in Coronado, Calif., and was charged with overseeing all NSW personnel and activities on the West Coast, in the Pacific, and in Southwest Asia. It was from that post that he was tapped for his command in Afghanistan.

The mission to capture Mullah Khairullah was one of more than 75 missions performed by U.S. and allied special forces overseen by Harward from the U.S. base

at Camp Rhino and other sites in Afghanistan. From October 2001 through April 2002, he commanded what was officially known as the Coalition Joint Special Operations Task Force—South. The 2,800-man task force was one of two set up by the United States to monitor Al Qaeda and Taliban forces, raid their hideouts, capture commanders, collect intelligence, and engage in a host of other disruptive activities.

The operations Harward oversaw were some of the most sensitive and dangerous in Afghanistan. One was a mission in early January to investigate the Al Qaeda hideout at Zhawar Kili. Expected to last 12 hours, the mission turned into an eight-day ordeal as U.S. forces scoured the 70-cave complex adjacent to Pakistan. Another mission involved a days-long surveillance and raid of Ali Kheyl, a multistoried fortress perched at 14,000 feet, not far from the city of Khost in eastern Afghanistan. “That place was straight out of an Indiana Jones movie,” Harward said. “We expected to see Steven Spielberg at any minute!”

More Than a Movie

The operations that took place during the first six months of the Afghan campaign were unique, Harward said, first of all because they were led and driven by special forces. “Up until March, this was a SOF campaign, supported by conventional forces. All our operations were SOF-specific. That didn’t change until Operation Anaconda, when SOF shifted focus and began to support the conventional forces.”

The unique SOF nature of the campaign led to a novel command structure and a completely new role for the navy. It was unusual for Naval Special Warfare to command a joint task force. “Normally, we would be the navy component [of a task force]. In this case, we were the lead commanding element.”

In that capacity, Harward commanded not just navy SEALs but all SOF personnel assigned to the task force from the U.S. Army, U.S. Air Force, Australia, Denmark, Germany, Norway, and Turkey. His authority extended beyond SOF personnel to include U.S. Marine Corps helicopters and ground forces.

“This allowed us to do things we’d never done before,” Harward said. “You saw SEALs operating 500 miles inland, using army and Marine Corps helicopters.”

The new arrangement, with its integration of joint forces in the field, also allowed Harward and his team to make quicker decisions and operate with shorter planning cycles. The U.S. Special Operations Com-



AP/WIDE WORLD PHOTOS/U.S. NAVY

mand strives to have its special forces use a 96-hour planning process; ideally, SOF personnel should identify a target four days in advance of hitting it. However, in the hunt for fleeing Al Qaeda and Taliban fighters, U.S. commanders had to dramatically compress the cycle to as short as an hour or two, said Harward. “This altered how we planned for flight crew rest hours, how we used intelligence assets, and how we utilized air assets.”

An unfortunate result of the shorter planning cycle was that it intensified the challenge of identifying, sorting, and verifying targets—a process that has never been easy. Many organizations—other military services, other government agencies, Afghan allies—were involved in vetting and approving targets. Sometimes they worked through the process quickly and accurately; other times, not. “Targeting is never perfect and can always be improved,” Harward said. “It always needs to be worked on.”

The Afghan campaign, its SOF leadership, its joint and coalition nature, its operational agility, and the premium it placed on accurate information—all of these qualities epitomize the type of warfare that will be needed to subdue global terrorism, said Harward.

“Afghanistan was SOF-centric, and more and more warfare likely will be SOF-specific.” ■

U.S. Navy SEALs discover a large munitions cache in one of 70 caves explored during a search-and-destroy mission in the Zhawar Kili area of eastern Afghanistan in January. The SEALs subsequently called in air strikes to destroy the caves and above-ground complexes, which had been used by Al Qaeda and Taliban forces.

The unique SOF nature of the campaign led to a novel command structure and a completely new role for the navy.

Four Lessons from Five Countries

By Bruce Hoffman and Kim Cragin

Bruce Hoffman is vice president for external affairs at RAND and director of the Washington office. Kim Cragin is a RAND policy analyst.

A survey of the counterterrorism lessons learned from several countries—Israel, the Philippines, Colombia, Peru, and the United Kingdom—leads to four principal conclusions. These conclusions pertain to the functional areas of targeting mid-level terrorist leaders, discrediting top-level leaders, disrupting their support networks, and countering enemy intelligence.

1. Focus efforts at mid-level leaders in terrorist groups.

Mid-level leaders are often more important than top decisionmakers for the long-term survival of a terrorist organization. Therefore, policies aimed at removing mid-level leaders will be more effective at disrupting the control, communications, and operations up and down the chain of command within an organization. Such policies may also stunt the group's long-term growth by eliminating the development of future leaders.

None of the countries that we surveyed had a dedicated, stand-alone, terrorist counterintelligence unit.

Targeting the top leaders of a terrorist group is often ineffective.

The success or failure of a terrorist organization's operations—and even perhaps its longevity—depends more on the ability of the mid-level leaders to step into decisionmaking roles or carry

out operational objectives than on the top leaders themselves.

Israel, for example, has often removed the top leadership of Hezbollah and Hamas. But this policy has not resulted in a dramatic decrease in terrorist attacks or the dissolution of either group. The mid-level leaders of Hezbollah, in particular, have been able to step into the new role of top decisionmakers relatively easily. In the case of Hamas, Israel managed to deport almost its entire top-level leadership in 1992, but the strategy backfired. The top-level Hamas leaders had been relatively moderate, and their removal served only to radicalize the group. The mid-level leaders that stepped up in 1992 increased the use of suicide bombers to the extent seen in the attacks against Israel today.

Admittedly, Peru is a counter-example. There, former President Alberto Fujimori's targeting and subsequent arrest of Abimael Guzman, the top leader of the Sendero Luminoso, was one of the main characteristics of Fujimori's all-out war against terrorism between 1990 and 1993. Some analysts argue that Guzman's arrest precipitated a rapid internal collapse of the Sendero Luminoso. But there is more to the story than just the arrest of Guzman and his central command. The key to the demise of this particular group is discussed in the next section.

2. Delegitimize—do not just arrest or kill—the top leaders of terrorist groups.

The top leaders of terrorist organizations are more than just the head policymakers of their groups. They occupy an enormously influential and important symbolic position that is often inextricably connected to the organization's very existence. Therefore, the public diplomacy campaign to discredit these leaders is

as or even more important than their actual arrests or deaths.

As mentioned above, some analysts attribute the fall of Sendero Luminoso to the arrest of Guzman. But another, often overlooked, component of Fujimori's strategy was to thoroughly discredit Guzman in the eyes of Sendero Luminoso members and their support network. Fujimori tarnished the image of Guzman by turning his own words against him, deliberately orchestrating public speeches in which Guzman first called for Sendero Luminoso members to give up their weapons and then abruptly reversed himself, telling the members instead to continue to fight the government. The discrepancies discredited Guzman, and his organization lost all forward momentum. (Turkey achieved a similar success after imprisoning Abdullah Ocalan, the founder and leader of the Kurdish insurgent group, the PKK.)

3. Focus on disrupting support networks and their trafficking activities.

The third lesson is to target essential support and logistics networks. This tactic entails focusing on the financiers and smugglers that help terrorist organizations gain access to money and purchase supplies on the black market. Attention is often focused on front organizations and individuals that provide money directly to terrorist organizations. However, it would be more advantageous to expand this strategy by targeting, for example, the middlemen who purchase diamonds from terrorists on the black market or the merchants who sell weapons to terrorist organizations. This tactic is a more effective way of disrupting the everyday activities in which terrorist organizations must engage to maintain their operational capabilities. It hinders the ability of organizations to gather resources and plan sophisticated attacks in advance, because they cannot rely on a steady stream of money or other essential resources.

For example, Colombian efforts to disrupt arms trafficking have been more successful than coca eradication. The Colombian military has achieved this success by focusing its intelligence and investigative resources on financiers and arms trafficking middlemen external to the Revolutionary Armed Forces of Colombia (FARC).

As a result, FARC communiqués and reported discussions indicate that the organizational leadership has become increasingly concerned about the loss of



AP/WIDE WORLD PHOTOS/BULLIT MARQUEZ

weapons shipments into the country. The Colombian armed forces may be able to deprive FARC of crucial supplies to such an extent that the group will be unable to expand or even maintain control over territory in Colombia—and therefore unable to conduct operations in the medium to long term.

4. Establish a dedicated counterintelligence center to obstruct terrorist reconnaissance.

Relatively sophisticated terrorist groups do not attack people or places without a basic level of planning and reconnaissance. Therefore, arguably the greatest return on investment is in the identification and disruption of pre-attack planning operations. It is crucially important to intercept the terrorists' own intelligence-gathering processes.

Yet none of the countries that we surveyed had a dedicated, stand-alone, terrorist counterintelligence unit. These countries are missing important opportunities to preempt terrorist attacks. Given the highly fluid and transnational nature of the threat faced by the United States, a separate counterterrorism unit should be established within the U.S. intelligence community. This unit should be dedicated specifically to identifying and targeting the intelligence-gathering and reconnaissance activities of terrorist organizations. ■

A soldier distributes bounty leaflets to mostly Muslim boys at Tipo-Tipo on Basilan Island, southern Philippines, on June 15. The U.S. government is offering up to \$5 million for information leading to the capture of five leaders of the Muslim extremist group Abu Sayyaf, which reportedly receives support from the Al Qaeda terrorist network.

The Colombian military has achieved success by focusing on financiers and middlemen.

U.S. Air Force Roles Reach Beyond Securing the Skies

By Eric V. Larson

Eric Larson is a RAND senior policy analyst who is leading a study for the U.S. Air Force on its role in homeland security.

The U.S. Air Force (USAF) responded to the Sept. 11 terrorist attacks with a surge of activity to plug the aviation security gaps that had been exploited by the 19 Al Qaeda hijackers. Within three months—as Al Qaeda was routed from its sanctuary in Afghanistan, as airport security was tightened, and as public fears of terrorism diminished—USAF leaders were able to turn their attention to the longer-term challenges of homeland security. Important lessons have been learned with respect to both the immediate challenges and the emerging ones.

The Immediate Challenges

The terrorist attacks precipitated a dramatic change in the level of effort accorded by the USAF to “air sovereignty operations”—the protection of U.S. airspace by fighter aircraft and other military assets. Immediately following the attacks, nearly 30 USAF bases around the country put a total of more than 100 fighter aircraft on “strip alert,” meaning they were ready to be airborne in 15 minutes to respond to any new incident.

Fighter aircraft also flew combat air patrols over some 30 U.S. cities, with continuous orbits over Washington, D.C., and New York City, and random patrols over other metropolitan areas and key infrastructure. Command-and-control, airborne warning, and tanker

aircraft supported the 24-hour-a-day operations. NATO invoked Article V of the North Atlantic Treaty—for the first time in the alliance’s 52-year history—and sent five airborne early warning aircraft to assist in the operation, which was named Noble Eagle.

By any measure, the air sovereignty operations involved a substantial level of effort. The USAF alone committed more than 250 aircraft to secure the skies over major U.S. cities, involving more than 120 fighters, about 11,000 airmen flying missions, and an equal number of maintenance personnel on the ground. More than 13,400 fighter, tanker, and airborne early warning sorties were flown over the United States by USAF and NATO crews—more sorties than were flown in the war against the Taliban and Al Qaeda in Afghanistan up to mid-April, when the continuous air patrols ended.

In April, as new civilian aviation and other security measures reduced the need for continuous fighter combat air patrols, the USAF adopted a more sustainable posture. This new approach involves a mix of combat air patrols and strip alerts at the discretion of the North American Aerospace Defense Command (NORAD), based on threat assessment and available resources.

The Emerging Challenges

Homeland security is much more than continental air defense. Thus, even as the USAF absorbs the lessons of Operation Noble Eagle for its air defense planning, it is beginning to wrestle with the wider portfolio of missions that constitute homeland security, their potential demands, and the likely roles for the USAF.

Homeland security is a diverse portfolio of missions, currently broken into two broad categories: homeland defense and civil support. Homeland defense includes continental air and missile defense, maritime and land defense, and protection of military headquarters and operations. Civil support aids civilian efforts to combat terrorism, ensure the continuity of government, secure special events such as the Olympics, and respond to large-scale civil disturbances.

An examination of the emerging threats and missions in homeland security suggests a number of important roles for the USAF:

- Homeland security missions are likely to place a premium on the full range of USAF intelligence, surveillance, and reconnaissance (ISR) capabilities. The USAF has a great deal to contribute to the new national effort to develop and field improved capabilities to detect and counter nuclear weapons and materials before they can enter the country—a technologically tough but increasingly urgent problem. Consequence management efforts in the wake of an attack involving weapons of mass destruction (WMD) may also benefit from ISR capabilities that can assist local emergency officials to evacuate survivors more safely. The ISR capabilities may also enhance border surveillance, terrorism-related intelligence collection and analysis, and threat assessments for USAF bases and other facilities.
- USAF command, control, and communications capabilities are also likely to play an expanded role in homeland security. These capabilities could be increasingly in demand to assist federal, state, and local responders in the wake of a terrorist attack or natural disaster; to improve NORAD's warning and response time for domestic airborne threats; and to strengthen the integration of the Federal Aviation Administration with other civilian airspace management systems.
- Air mobility forces probably would play their most important role in consequence management activities in the wake of a terrorist incident or natural disaster. Deployable USAF medical capabilities also would be expected to provide triage and stabilize patients for evacuation to other locations.
- Selected USAF special operations capabilities may be needed for a range of missions, such as disabling terrorists, seizing weapons of mass destruction, rendering the weapons safe, or assisting in search-and-rescue operations.



U.S. AIR FORCE/LT. COL. BILL RAMSAY

Of all the emerging threats the nation may face in the future, the most worrisome is nuclear weapons. In many easily conceived scenarios involving relatively small-yield nuclear weapons, the magnitude of the potential casualties and damage is so horrific that it is difficult to imagine any consequence management activities that could substantially mitigate the large-scale suffering. By comparison, in most other types of WMD attack—chemical, biological, and radiological—the effects are likely to be more localized, smaller in scale, or more manageable.

Accordingly, the USAF should put a high priority on helping the nation develop capabilities to detect nuclear weapons and materials at distances that permit an effective military response *before* they can be used. The military goal should be either (1) to detect, seize, and render the weapons safe or (2) to destroy them while they are still far from U.S. borders and coasts, or at least before they can reach U.S. cities where they can cause the greatest harm. Addressing this threat clearly transcends homeland defense inasmuch as the mission will involve a range of military and nonmilitary activities abroad. The mission is also likely to call upon the full range of USAF capabilities—from its research laboratories to its frontline combat and supporting forces—if it is to be successful. ■

An F-15 Eagle from the Massachusetts Air National Guard flies a combat air patrol mission over New York City in support of Operation Noble Eagle.

Of all the emerging threats the nation may face, the most worrisome is nuclear weapons.

Related Reading

Preparing the U.S. Army for Homeland Security: Issues, Concepts, and Options, Eric V. Larson, John E. Peters, RAND/MR-1251-A, 2001, 344 pp., ISBN 0-8330-2919-3, \$35.00.

U.S. Army Finds Its Role at Home Up for Grabs

By Richard Brennan

Richard Brennan is a retired U.S. Army officer and senior political scientist at RAND.

How should the U.S. Army help to defend the homeland?

In the past, the army has met the demand for homeland security requirements with forces designed primarily for conflicts abroad. Today, the prospect of an increasing level of terrorism within the borders of the United States has compelled the army to rethink that approach.

The army is examining the degree to which some of its units should be funded, manned, trained, and equipped for homeland security missions. The army has also been assessing how well state, local, and federal law enforcement agencies may be able to counter paramilitary and terrorist threats at home and how it might be required to work in conjunction with those agencies during times of crisis.

Prior to Sept. 11, 2001, army leaders had defined seven homeland security missions that might require the employment of army personnel, forces, or capabilities:

- protecting the nation's sovereignty and borders (controlling smuggling, drug traffic, illegal immigration, refugees, territorial incursions, terrorists, and theft of resources)
- providing military support to civil authorities (in response to natural disasters, riots, forest fires, or special events)
- responding to chemical, biological, radiological, nuclear, and enhanced high-explosive (CBRNE) incidents

- protecting critical infrastructure (protecting U.S. facilities that are critical to the deployment of army forces)
- conducting information operations (protecting army communications and information systems and mitigating the effects of any attack on them)
- conducting national missile defense (countering limited ballistic missile attacks)
- combating terrorism.

As of July 2001, the steady-state requirements for army personnel in these seven areas totaled about 5,400 per day (see table). The surge capacity potentially needed in some mission areas was believed to be as much as 23,000 troops for a single event or incident. Simultaneous missions within the homeland could easily exceed these numbers. These totals excluded National Guard soldiers who were temporarily called to state active duty at the request of the governor to assist with small-scale local emergencies. Finally, because of security reasons, the totals did not include the number of soldiers that might be needed to assist federal law enforcement efforts in combating terrorism.

Clearly, given the new security environment, these estimates must now be revised upward. The fundamental assumptions about the roles and missions of the U.S. Army in homeland security have changed. Forthwith are some of the most salient points for reconsideration.

- In the aftermath of Sept. 11, the distinction between steady state and surge has blurred. Several thousand National Guard soldiers were rushed into security assignments at the nation's commercial airports for several months until increased civilian security protection could be organized, staffed, and trained.
- A large increase in army preparations to counter

CBRNE threats seems likely. Such an increase would raise both steady-state and surge requirements.

- In two mission areas—critical infrastructure and information operations—the army has historically focused narrowly on protecting its own facilities. Now, the army could be called upon to protect similar facilities in the civilian sector, such as federal buildings.
- The size and duration of army personnel requirements for border security against terrorism and for counterterrorism in general are all open to question.
- Even the personnel requirements for national missile defense are unclear, given the uncertainties about its characteristics and evolution.

Ideally, civilian agencies would have sufficient resources to handle emergency situations, and civilian capabilities are now being expanded across the board. However, history shows that frequently only the army has adequate surge capacity to respond quickly to large-scale disasters. Disasters on the scale of the one experienced by New York City would overtax the resources of all but the nation's largest cities. The army must understand that, during times of crisis, civilian leaders are likely to call upon military resources to address the shortfalls in civilian capabilities.

The army could prepare for its new homeland missions in several ways. It could prepare for CBRNE attacks on U.S. territory, for example, by ensuring that its Chemical Reconnaissance and Decontamination platoons, Chemical Biological Rapid Response teams, Biological Integrated Detection System companies, and Explosive Ordnance Disposal teams have the proper training and equipment to integrate themselves easily with local first responders as well as with specialized county, state, and federal civilian organizations. While a large majority of these types of units reside within the reserve components, active-duty forces may also be called upon to perform these missions. The army could also increase the number of specialized units that have a mission of assisting domestic law enforcement efforts to defeat certain types of terrorism within the United States. For future tasks that promise to be significantly different from those in the past (such as

quarantining urban areas), completely new force packages will probably need to be designed.

Beyond matters of personnel, the threats to homeland security should prod the army and the country's political leaders to rethink the current practice of consolidating military bases, power projection facilities, ammunition depots, and other sites. Although consolidation may enable greater efficiencies during times of peace, it may also exacerbate vulnerabilities during times of war. Large, centralized bases and depots are likely to be viewed as especially high-value targets by potential adversaries, because the loss of any one of these facilities could significantly hinder the U.S. response both at home and overseas.

The size and scope of army requirements for homeland security will remain a matter of debate and controversy. More analysis needs to be conducted to understand how much flexibility exists within the current and planned army capabilities for simultaneously fighting war abroad and contributing to security at home. Meeting these requirements will likely involve a mix of active and reserve forces and the National Guard. Determining the best mix of these forces is the essential next task for the army. ■

Related Reading

Estimating Homeland Security Requirements, Richard Brennan, K. Scott McMahon, David Kassing, David Mosher, Lynn Davis, Jeremy Shapiro, John Hollywood, Michael Lostumbo, RAND, forthcoming.

Protecting the Homeland: Insights from Army Wargames, Richard Brennan, RAND/MR-1490-A, 2002, ISBN 0-8330-3153-8, \$15.00.

Estimated U.S. Army Personnel Requirements for Homeland Security (as of July 2001)

Army Mission	Steady State	Surge Range
Protecting sovereignty and borders	~3,200	~2,500 to 6,000
Supporting civil authorities	~400	~6,000 to 23,000
Responding to CBRNE incidents	~650	~4,000 to 23,000
Protecting critical infrastructure	~100	~2,600 to 23,000
Conducting information operations	~600	~100
Conducting national missile defense	~400	~100
Combating terrorism in the United States	Not specified	Not specified
TOTAL	~5,350	Not applicable

SOURCE: Brennan et al., forthcoming.

Consolidating military bases may exacerbate vulnerabilities during times of war.

Beyond Sharing Intelligence, We Must Generate Knowledge

By Jeffrey A. Isaacson and Kevin M. O'Connell

Jeffrey Isaacson is vice president and director of the National Security Research Division at RAND. Kevin O'Connell is director of RAND's Intelligence Policy Center.

The sharing of intelligence figures prominently in President Bush's proposal for a new Department of Homeland Security, under which the directors of Central Intelligence and the FBI would be *required* to disseminate relevant information to an intelligence entity within the new department. In the broadest sense, this requirement reflects the growing belief—strengthened in the aftermath of Sept. 11—that U.S. intelligence is in need of serious change. More narrowly, the requirement reflects a strong sense that better information sharing—both within and beyond the U.S. government—is essential to combat a networked, global terrorist threat.

The need for change has been well articulated. Today's intelligence community still retains the structure, stovepipes, and culture befitting an organization

born of the cold war. Whatever its failures of Sept. 11, the community did largely what it was designed for: focusing its interest overseas, with scant attention to the links between home and abroad. In many ways, bin Laden and his treacherous followers exploited the bureaucratic artifacts of our own

intelligence history. And given an intelligence culture dominated by secrecy, it is not surprising that the legacy of U.S. intelligence was to share as little as possible with potential collaborators, both inside and outside the government.

The scope of necessary change has yet to be articulated. We suggest that the intelligence community needs to rebuild an analytical cadre of highly skilled and continuously retrained specialists who can integrate knowledge pertinent to counterterrorism gained from multiple data sources, professional disciplines, and social sectors.

How Did We Get Here?

Historically, the need for a high level of secrecy within the intelligence community is understandable. The Soviet Union expended significant resources on its own intelligence collection against the United States and its allies, even during World War II, when the Soviet Union was considered a U.S. ally. It also sought to undermine our efforts by infiltrating our national security establishment with treasonous agents. In such a climate, it made sense to limit the information flow as much as possible. After all, the fewer who knew, the fewer the conduits that could be compromised. U.S. political sensitivities reinforced the notion, giving preference to intelligence focused away from the homeland. And given the nature of superpower competition, there was little need for the intelligence community to share information broadly, especially with U.S. domestic agencies not directly concerned with national security.

Needless to say, all that has changed. U.S. departments and agencies long considered to be outside the

Bin Laden and his followers exploited the bureaucratic artifacts of our own intelligence history.

national security arena—such as the U.S. Treasury, the Federal Emergency Management Agency, or the U.S. Border Patrol—now play an important role in securing the homeland. State and local governments, too, play a role and would benefit from intelligence, not only to assist in the interdiction of threats but to manage the consequences of attack. These entities also represent potentially important sources of intelligence data. Similarly, foreign governments have become increasingly active as receivers and transmitters. Even the private sector has a role to play in hardening transportation, information, and various other infrastructures against terrorist threats, both domestically and abroad.

Recent discussions about “how to fix the problem” have resulted in a number of proposals to create new organizations and new networks, like an intelligence section of the new Department of Homeland Security. Implementing such fixes will certainly pose challenges, given such problems as security classification, further “compartmentation” of information, and the aging state of information technology in many agencies. But improving the intelligence community’s wiring diagram is the easy part of facilitating better intelligence sharing. The hard part is generating better intelligence to share, wherever it turns out to be. U.S. decisionmakers must be careful to understand that we can paralyze our efforts to secure the homeland by disseminating information that is “inactionable” (or not useful), incomplete, or simply lacking in solid analysis. Unlocking the vault of secrecy is only the first step. We must reestablish our nation’s analytical capacity and curiosity, starting with the intelligence community.

How Do We Get There?

Analyzing terrorism is not like analyzing Russian naval strength or Latin American political systems; such analyses rely upon well-defined indicators and data sources. In contrast, counterterrorism analysis must provide structure to information that can be highly fragmentary, lacking in well-defined links, and fraught with deception. It must infer specific strategies and plans from small pieces of information. It must find common threads among seemingly disparate strands. And unlike the terrorist, who needs only a single vulnerability to exploit, the analyst must consider all potential vulnerabilities.

Accomplishing these tasks will require broad, integrative analyses like never before. Only some of this analytical capacity resides within the intelligence com-

munity today; much resides elsewhere within the U.S. government, in the private sector, and even abroad. Restructuring government can, in principle, help to pull together this capacity and, over time, mitigate the problems associated with blending different organizational cultures. But more analytical capacity needs to be developed. If we believe the domestic terrorism problem will continue, then the intelligence community should begin now to expand its ability to provide integrative analyses and strive to sustain it over the long term. Only then can we ensure a comparative intelligence advantage over our adversaries.

Technology must also play a key role in driving this comparative advantage. In an era in which some of the traditional tools of U.S. intelligence—on-site reporting, commercial imagery, and foreign broadcasts—are available to adversaries on the Internet, the only solution is to gain access to more-sophisticated sources or to make better analytical use of existing data. Today, the most compelling intelligence support to the global war on terrorism is taking place when analysts fuse their knowledge and data interactively. This involves combining two or more pieces of information obtained through human intelligence (humint), imagery intelligence (imint), measurement and signature intelligence (masint), and signals intelligence (sigint) in such a way that the whole is greater than the sum of its parts. This powerful technique—increasingly known as “multi-int”—is now being used aggressively and to the extreme disadvantage of our adversaries. But it will require continued development and investment to realize its full potential.

In summary, intelligence is gaining importance as an instrument of national power in the war on terrorism, and there is little question of the need to share intelligence more effectively among U.S. government agencies, allies, and private enterprise. But while the exchange of data is an important first step, it is only a first step. We must strive toward a more collaborative consideration of ideas, alternative views, and, ultimately, solid analysis upon which to make decisions that will enhance the security of our country and the global community. ■

**The hard part
is generating
better intelligence
to share.**

Protecting Critical Infrastructure

By Bruce Don and David Mussington

Bruce Don is the RAND Study Director for the Office of Homeland Security's physical protection planning team. David Mussington is a RAND policy analyst.

One of the defining tasks of the Office of Homeland Security is to develop a truly national strategy for homeland security. To be effective, the strategy must include plans to prevent attacks, protect critical infrastructure, and ensure prompt recovery after an attack. This essay pertains to the second requirement: protecting critical infrastructure around the country.

Critical infrastructure refers to transportation and energy systems, defense installations, banking and financial assets, water supplies, chemical plants, food and agricultural resources, police and fire departments, hospitals and public health systems, government offices, and national symbols. In other words, critical infrastructure refers to those assets, systems, and functions so vital to the nation that their disruption or destruction would have a debilitating effect on our national security, economy, governance, public health and safety, and morale.

The potential weaknesses in our critical infrastructure are numerous and complex because of the size and interconnectivity of our infrastructures. Below is a sampling of the kinds of problems that could hit closest to home for many Americans:

- There is no public national effort to enhance the security of future energy system configurations, including the electric power grid and other interdependent power generation and distribution

facilities, nor do industry experts believe that the private energy sector is planning adequately for these potential configurations.

- No close relationship exists between the agricultural sector and the intelligence community. The lack of close contacts between these two groups means that information about possible attacks on the food supply does not currently flow to the appropriate public agency.
- The public health system is unprepared for its role as first responder in the event of biological, chemical, or radiological attack. Weaknesses include an absence of stable funding for public hospitals and clinics around the country; incompatible communications links with emergency, law enforcement, and federal agencies; shortages of skilled personnel; and possible shortages of supplies and medical equipment.
- Computer control centers are potentially lucrative targets for attack. Three sectors of infrastructure that may be particularly vulnerable to control-center attacks are oil pipelines, air transportation systems, and railroads, because the associated computer control systems are concentrated in a small number of critical nodes or facilities. This concentration makes large segments of the infrastructure potentially vulnerable to disruption from a small number of destructive incidents.

Below are several examples of the kinds of candidate solutions now being analyzed by RAND for the Office of Homeland Security. These candidates are drawn from workshops conducted by a RAND study team with nearly 500 experts in security, emergency response, law enforcement, and infrastructure management:

- Collaborate with state and industry leaders to pro-

tect the electric power grid and other power generation and distribution facilities.

- Reduce the vulnerability of oil refineries to terrorist attacks. Such attacks could be launched from the ground or the air. In either case, comprehensive vulnerability assessments and defense planning should be undertaken to avoid potentially catastrophic losses in service.
- Require tightened security and access procedures for food production. Meanwhile, develop plans for communicating to the public about food safety. Coordination is needed between industry and government during food security threats. While industry must control *access* to food production, the government should take the responsibility for maintaining public *confidence* in the food supply. Plans should include communications about food security risks, threats, incidents, and appropriate public responses.
- Launch an initiative to provide first responders in the agricultural and public health sectors with improved capabilities of surveillance, detection, and verification of biological or chemical hazards. State and local regulatory agencies, as well as farmers, need access to improved technological and communications tools to help secure the food supply.
- Accelerate the examination of the public health infrastructure for its readiness to combat biological or chemical terrorism. Federal support should be targeted to training public health professionals to prevent and respond to terrorist attacks. Data repositories at local public health centers should also be enhanced to improve their potential utility during emergencies. It is clear that additional financial resources will be necessary if the public health system is to expand its responsibilities to include homeland security duties.
- Expand the training of first responders, with an emphasis on the unique hazards associated with the chemical industry. Training medical personnel to deal with chemical contamination should also be a high priority. An initiative to expand local and state capabilities, and also to increase collaboration with the chemical industry, should be launched in the near term.
- Develop emergency communications systems that link critical infrastructures to law enforcement and homeland security agencies. These communications systems would allow public agencies to retain

connectivity with one another during periods when normal civil communications links are disrupted. ■

- Deploy information and security systems to guard the locks on the Mississippi and St. Lawrence seaway. These systems will allow for the monitoring of vessels and ships while in locks or approaching locks. River marshals could be deployed to accompany dangerous shipments through the locks.
- Develop a list of trusted and nontrusted shippers. Such a list would allow for trusted shippers to operate with few restrictions while the maritime infrastructure was on a heightened state of alert. Ports would need to develop different layouts—isolating trusted shippers and their shipping containers from others—for efficient inspections of freight traffic.
- Establish a national transportation identification system. The U.S. Department of Transportation should create a single system for travelers and operators. All private, state, and federal authorities would duly recognize the credentials issued by the system. Current efforts in this area would benefit from enhanced legislative attention.
- Organize the domestic homeland security effort around regionally based antiterrorism response centers. The regional centers could house training and outreach activities; foster routine information sharing among federal, state, and local agencies; and conduct outreach to the private sector.

In the long run, the process of developing and refining the national strategy to protect our critical infrastructure should be based on a continuous planning system among federal, state, and local governments as well as with the private sector. In addition, applying computational techniques and models to the process of prioritizing infrastructure vulnerabilities will improve resource allocation and enable better analysis of interdependencies among critical systems. A rigorous planning system should define the goals, analyze the costs and effects of proposed solutions, measure progress toward the goals, and adapt the solutions and investments as necessary based on measured feedback. ■

The potential weaknesses are numerous and complex because of the size and interconnectivity of our infrastructures.

Airport Security from the Bottom Up

By Gerald Kauvar, Bernard Rostker, and Russell Shaver

Gerald Kauvar was staff director for the White House Commission on Aviation Safety and Security in the late 1990s. Russell Shaver served on the commission's staff. Bernard Rostker was undersecretary of defense for personnel and readiness. The authors are senior policy analysts at RAND.

By Dec. 31 of this year, 100 percent of checked baggage at all U.S. airports is to be electronically screened for explosives, or so Congress mandated with the passage of the Aviation Security and Transportation Act last November. This goal, motivated by the terrorist acts of Sept. 11 and the oft-noted inadequacies of airport security inspections, simply cannot be met. And the rush to come as close as possible to satisfying the law could do U.S. aviation more harm than good.

The plan envisioned by Congress called for installing very large and very heavy scanning machines, known as explosives detection systems (EDS). There is insufficient suitable space at most large

airports for the installation of these machines. The congressional plan also failed to recognize that the planned number of EDS machines could not even be manufactured by the end of 2002.

The congressional legislation greatly accelerated plans by the U.S. Department of Transportation (DOT), which originally had scheduled the deployment of EDS equip-

ment by 2013. What was lost in the accelerated schedule was the need to involve the airports and their tenants, the airlines, in the planning.

Each of the 453 commercial airports in the United States presents a unique challenge to baggage system designers. The current one-size-fits-all approach cannot possibly anticipate the local constraints. Nor does it adequately account for the need to integrate the EDS equipment with the baggage handling systems of the individual airlines. Until suitable airport facilities are constructed, many of the EDS machines now being acquired at a highly accelerated rate cannot be installed or seamlessly integrated with the baggage handling systems.

The current plan also fails to adequately account for the potential of long baggage check-in queues. Even the originally planned EDS deployments were too few to handle the inevitable equipment malfunctions or the anticipated (and hoped for) growth in passenger demand. Lengthy airport queues generate excessive passenger delays at airports, increase the reluctance of people to fly, and have a negative impact on U.S. economic growth.

Despite these shortfalls in planning, we can still take many steps to improve baggage screening. These steps will not achieve the congressional mandate for 2002, but they will go a long way toward increasing airport security.

There's Gotta Be a Better Way

As an alternative to the current top-down approach, we propose a bottom-up approach that will empower airports and airlines to work together to solve what is essentially a local problem. The federal government would play a different but no less important role. This role would be to organize, coordinate, and ensure the

Each of the 453 commercial airports in the United States presents a unique challenge.

quality of locally designed solutions that can work in the field.

The federal government should

- establish the standards for machine and system performance
- participate in local partnerships of airports and airlines that are designing local solutions
- integrate the local plans into a national architecture
- evaluate the effectiveness of each airport's security systems
- set parameters for the longer term so that the airports will be able to incorporate the new requirements into their modernization and expansion programs
- test proposed options against a model of the national transportation system to ensure that bottlenecks do not develop and that the requirements of a hub system can be met.

A bottom-up approach should be implemented immediately. Local partnerships should be given perhaps 60 days to report to DOT concerning their requirements for government-funded EDS machines and to estimate the facility modifications needed to use the machines. DOT will still be responsible for setting the timeline for airports to receive the equipment, consistent with local plans.

We further recommend that local airports follow the example of the Dallas–Fort Worth Airport in using the most appropriate statistical models to provide realistic and detailed representations of the movement of passengers and baggage through an airport.

However, even if the best planning tools are used, a bottom-up approach is adopted, all the airports and airlines work productively with DOT, and maximum production of new EDS equipment is achieved—even then, the 2002 congressional deadline for the fielding of EDS machines almost certainly cannot be met.

In recent months, DOT has abandoned its total focus on EDS machines and is rapidly acquiring a large number of smaller, lighter, and less-expensive trace detection (EDT) machines to do the job. This change eases the installation problems at the airports, improving DOT's chances of being able to electronically scan all checked baggage by the end of this year. However, EDT machines are generally believed to be less accurate in detecting explosive materials.

What is needed now is a way of ensuring that the existing baggage-scanning capacity focuses on those

bags most likely to pose a threat. This can be done by adopting baggage handling procedures that have been proven around the world to increase aviation security without overburdening the traveling public.

One of the most effective procedures would be the expanded use of the Computer Assisted Passenger Profiling System. With this system, airport security could use a so-called “trusted traveler” program to identify the bags least likely to pose a threat. This approach is consistent with generally accepted standards of nondiscriminatory profiling used by civil aviation authorities throughout the world. The procedure would be based not on gender, race, or national origin, but rather on selecting passengers about whom a great deal is known and who exhibit behaviors that keep them off any list of likely threats. U.S. citizens with detailed background investigations on record with the government would be obvious candidates for trusted travelers.

Civil aviation authorities should also have up-to-date access to the entire range of information that can be provided by law enforcement and intelligence organizations about people who are on watch lists, have overstayed their visas, or have drawn attention to themselves for other reasons. Similar systems are used in Israel, which is generally believed to have the world's most secure civil aviation system. While it would be impractical to try to import Israel's successful system on a wholesale basis—the scale and logistics of Israeli and U.S. operations are vastly different—the concept is sound: Focus security efforts on those who arouse suspicion.

This approach to aviation safety would account for the unique conditions of airports, use the best analytic tools available to manage passenger traffic, help identify the most dangerous passengers in the short term, and ensure that national interests are safeguarded in the long term. ■

What is needed now is a way of focusing on those bags most likely to pose a threat.

Related Reading

Safer Skies: Baggage Screening and Beyond, Gerry Kauvar, Bernard Rostker, Russell Shaver, RAND/WP-131-RC/NSRD, 2002, 9 pp., ISBN 0-8330-3199-6, \$9.00.

Safer Skies: Baggage Screening and Beyond—With Supporting Analyses, Gerry Kauvar, Bernard Rostker, Russell Shaver, RAND/WP-131/1-RC/NSRD, 2002, 72 pp., ISBN 0-8330-3200-3, \$15.00.

Bioterrorism

From Panic to Preparedness

By Kenneth I. Shine

Kenneth Shine is director of the RAND Center for Domestic and International Health Security.

While terrorism may seek to inflict mass casualties, it is also about the creation of fear and panic. The anthrax episodes in the aftermath of 9/11 demonstrated the extent to which a biological agent, used by a terrorist, could produce fear and panic in communities throughout the country. The episodes also confirmed that the public health infrastructure of the United States needs rebuilding, particularly its functions of surveillance, detection, diagnosis, response, and recovery from a biological attack.

There were 22 cases of anthrax with 5 deaths. The deaths were tragic, but the national reaction was far out of proportion to the scale of the attacks:

- Media coverage was continuous—and too often inaccurate.
- Postal service was disrupted in New Jersey, New York, and Washington, D.C. Anxiety spread all over the country about every envelope and package received by mail, and hoaxes proliferated worldwide.
- Up to 40,000 individuals took an antibiotic, ciprofloxacin, until supplies of the drug ran out in some parts of the country.
- The government offered immunizations to postal workers, only 5 percent of whom accepted, and to Capitol Hill staffers, over 40 percent of whom accepted.
- The building in Florida in which the first case occurred remains empty, and no one has shown any interest in buying or reoccupying it.

- Almost a year later, the post offices where the principal events occurred have still not reopened. The long-term psychological effects of these events on postal workers are still not known and are currently the subject of a RAND study.

The public health system did not respond much better:

- Physicians, hospitals, and health departments were besieged by inquiries about what individuals and organizations should do about the events—but were poorly prepared to answer. For almost two weeks, the public received conflicting and sometimes incorrect information.
- Web sites were also contacted extensively. Some of the best sites were so overwhelmed that they could not respond; other sites contained incorrect information or promoted the sale of a variety of nostrums and devices to protect against infection.
- Public health laboratories were overloaded and often lacked the capacity to respond in a timely way to specimens obtained from suspected patients or other sources. This was true in many states and at the Centers for Disease Control and Prevention (CDC) in Atlanta.
- A renewed concern about smallpox exploded into public attention. Shortages of vaccines against smallpox, anthrax, and even childhood diseases became increasingly visible. The government contracted to purchase enough smallpox vaccine to immunize the entire U.S. population, but vigorous debates developed over who should be vaccinated and when. RAND investigators have modeled several of the strategies. These models should be considered in the debate.
- Jurisdictional issues arose as the FBI, local public health departments, and the CDC differed on which agencies should take charge of specimens and the scenes of attacks.

These experiences have taught us many lessons with major relevance to the research and public policy agenda. The lessons have to do with surveillance, detection, and diagnosis; biomedical research; communications strategies; international cooperation; and coordination of resources.

To counteract both natural and man-made biological agents, we need improved surveillance measures and information systems for monitoring them, expanded laboratories to diagnose illnesses more quickly, and rapid communication systems among the medical, public health, emergency medicine, and public safety communities. We also need to overcome a national shortage of public health epidemiologists and to resolve quarantine issues.

Fundamental biomedical research is needed to understand the natural history of the various biological agents that can be used in terrorism and to develop vaccines against them. The nation badly needs a new public-private strategy for the development, testing, and production of vaccines. Vaccines are costly to produce but have limited market returns and may result in considerable liability. The stockpiling and emergency distribution of vaccines and drugs for use in a bioterrorist event pose significant financial and logistical challenges. Similar barriers impede the research, development, and distribution of new antiviral agents and new antibiotics to fight drug-resistant organisms. Decontamination of buildings also poses a major research challenge.

Communications to the public and the professions during a biological event must be dramatically improved. RAND has already undertaken seminal research on the mental health aspects of terrorism. Further efforts to help the public (and professionals) better understand and communicate the nature of risks are essential if rational choices are to be made in response.

International cooperation is also required. Infectious agents can produce illness anywhere in the world and spread rapidly from one part of the world to another. Improved surveillance, vaccine availability, and antibiotic resistance are thus global challenges. Cooperation on these challenges among developed countries could not only protect people in those countries but also improve the health and economic capacity of people in developing countries.

Among the challenges and opportunities in addressing bioterrorism is the need for the dual use of resources. The need for better surveillance systems and



AP/WIDE WORLD PHOTOS/ALEX DORGAN-ROSS

vaccines for both natural and man-made infections underscores the importance of conducting research and programs that are integrated rather than separated. Likewise, the complex group of agencies and programs with roles to play should also coordinate their efforts. Continuing professional education, accreditation, and disaster exercises should emphasize that it is essential to prepare for all new and emerging infections—whether natural or man-made.

The creation of a Department of Homeland Security will bring together a number of agencies and programs crucial to health security. It is important that the new department not lead to separations of research and programs—separations that could undermine dual-use requirements. In addition, the need for coordination suggests a continued role for an effective Office of Homeland Security in the White House under the conditions recommended by the RAND-supported Gilmore Commission. Under those conditions, the U.S. Senate would confirm a director who has budget authority over bioterrorism-related activities in all the relevant agencies.

In the recently created RAND Center for Domestic and International Health Security, we are developing an agenda to address many of these questions, taking advantage of RAND's range of capacities in health, security, intelligence, computer modeling, and economics. We aim to make health a key component of U.S. foreign policy and also to protect the health of the American homeland by preparing it for possible future terrorist attacks. ■

Emergency personnel in chemical and biological protective suits respond to the mock injuries of a victim during a July 13 exercise held by the University of Maryland Medical Center and the U.S. Air Force to simulate a terrorist attack on the Baltimore Ravens Stadium.

The nation badly needs a new strategy for the development, testing, and production of vaccines.

Replace the Weak Links in the Food Chain

By Peter Chalk

Peter Chalk is a RAND policy analyst.

Agriculture and the food industry are key elements of the U.S. economic and social structure. Unfortunately, the sector remains highly vulnerable—both to deliberate and to accidental disruption—for several reasons. Critical considerations include the following:

- Husbandry practices that have heightened the susceptibility of animals to disease. These practices, designed to increase the volume of meat production, include the routine use of antibiotics and growth stimulants in animal diets.
- The existence of a large number of microbial agents that are lethal and highly contagious to animals. The bulk of these diseases are both environmentally hardy—able to exist for long periods of time in organic matter—and reasonably easy to acquire or produce. Vaccination is no panacea, because it poses risks to animals, and there are no vaccinations for some diseases.
- The ease and rapidity with which infectious animal diseases can spread, owing to the extremely intensive and highly concentrated nature of U.S. farming. Models developed by the U.S. Department of Agriculture (USDA) suggest that foot and mouth disease, for example, could spread to as many as 25 states in as few as five days through the routine movement of animals from farm to market.

Food processing facilities lack sufficient security and safety preparedness.

- The proliferation of food processing facilities that lack sufficient security and safety preparedness. Several thousand facilities exist nationwide, many of which are characterized by minimal biosecurity and surveillance, inadequate product recall procedures, and highly transient, unscreened workforces. These facilities represent ideal sites for the deliberate introduction of bacteria and toxins such as salmonella, *E. coli*, and botulin.

The specific consequences of a major agricultural or food-related disaster in the United States are difficult to predict and would vary with the type of outbreak. During a foot and mouth epidemic, for example, the country would suffer direct economic effects from the inability to export affected agricultural goods to most foreign markets until the outbreak was under control and also from limited travel and tourism in quarantine areas. Recent experience with such an epidemic in the United Kingdom has shown that agricultural and tourism markets can be disrupted for weeks and months.

More by luck than design, the United States has not experienced a major agricultural or food-related disaster in recent memory. As a result, there is little real appreciation for either the threat or the potential consequences. The federal government has yet to allocate the resources necessary to develop an integrated and comprehensive emergency preparedness plan capable of responding to this kind of disaster. Meanwhile, biosecurity and surveillance at many of the country's food processing and rendering plants remain inadequate, with most plants lacking viable product recall and trace-back plans.

If a terrorist were to succeed in disrupting the national food supply, the United States would quickly

discern the many ways in which it is unprepared to respond. Specific weaknesses include

- an emergency management program designed to deal with only one or two localized animal disease outbreaks at a time
- insufficient numbers of diagnosticians trained to recognize and treat animal diseases of foreign origin
- insufficient food surveillance and inspection at processing and packing plants
- inadequate procedures for responding to food-borne diseases
- inadequate coordination between the agricultural and criminal justice communities
- an emergency response program that relies on an unreliable, passive, disease-reporting system and is hampered by a lack of communication and trust between regulators and producers.

The United States can substantially strengthen its agricultural and food emergency response structure over the short and medium term by taking these steps:

- Reform the overall veterinary science curriculum, placing greater emphasis on large-scale animal husbandry, recognition and treatment of animal diseases of foreign origin, and diagnostician training in these diseases.
- Increase the *number* of laboratories that can be used to diagnose outbreaks of virulent foreign and exotic animal diseases, and improve the *capacity* of the laboratories to conduct research on the diseases.
- Implement regular preparedness and response exercises.
- Develop electronic communication systems to integrate field staff with emergency management staff.
- Involve accredited local and state veterinarians in the USDA's overall emergency management and response plan as well as in local preparedness planning.
- Foster better coordination and more-standardized links among the agricultural, criminal justice, and intelligence communities, especially in the context of epidemiological investigations to establish whether a disease outbreak is deliberately orchestrated or the result of a naturally occurring phenomenon.
- Examine the role that markets, insurance, and other economic levers can play in increasing voluntary disease reporting and cooperation with outbreak control measures (such as culling of herds).



AP/WIDE WORLD PHOTOS/NATI HARNIK

Cattle raised on Marvin DeBlaauw's ranch near Hartington, Neb., eat mostly grass and alfalfa—in contrast to most commercially raised cows, which are fed corn, nutritional supplements, antibiotics, and hormones.

- Investigate ways to enhance biosecurity, surveillance, and emergency response measures at food processors and packing plants, especially smaller-scale ones. Useful measures that could be initiated immediately include better site security and clearly documented, well-rehearsed product recall plans.

Over the longer term, it is unclear whether a single federal agency should be given the budgetary and programmatic authority to standardize and rationalize food and agricultural safety procedures across a wide spectrum of jurisdictions. The potential utility of this approach needs to be carefully examined. Such an agency could help to weave together the patchwork of largely uncoordinated food safety initiatives that currently exists in the United States. The agency could also contribute substantially to the development of a national emergency response plan that could both reduce conflicts and eliminate unnecessary duplication of effort in the fight against animal and food diseases. ■

Related Reading

Terrorism, Infrastructure Protection, and the U.S. Food and Agricultural Sector, Peter Chalk, RAND/CT-184, 2001, 11 pp., \$5.00.

Cleanse the Polluted Urban Seas

By Russell W. Glenn

Russell Glenn, a senior defense and political analyst at RAND, has led several projects for the U.S. Army, U.S. Marine Corps, and Joint Staff on urban military operations.

Most attempts to categorize terrorist threats focus on the nature of the terrorist groups themselves: member motivations, ends sought, demographic characteristics, or tactics employed. It is perhaps more revealing to consider these threats from an alternative perspective: the nature of the urban populations in which the terrorists operate.

Terrorist and other insurgent groups often require support from their environments to a greater extent than do regular military forces. Mao Tse-Tung aptly characterized this relationship of dependence on the general population by his revolutionary guerrillas:

"The former may be likened to water and the latter to the fish who inhabit it." No less than with Mao's revolutionaries, terrorist successes are functions of the seas in which the individuals operate.

From organized criminal elements to urban gangs to terrorist groups, all of these organizations

Even the most hostile waters are in some ways hospitable.

rely on the acceptance or tolerance of those who share their operating areas. Both the Irish Republican Army (IRA) and the Palestinian Liberation Organization, for example, operate in areas where subsets of the population are sympathetic to their goals, while the greater population is either apathetic, uncooperative, or antipathetic. In many other urban areas, the sea is pre-

disposed toward tolerance as long as its members believe that dissident groups are merely exercising legitimate rights.

Even if the urban sea is universally hostile to terrorists, it is nevertheless dense and heterogeneous, making it fairly easy for attackers to conceal themselves. Unlike in rural areas, those speaking a foreign language and unfamiliar with local customs are commonplace. Daily contacts are typically superficial. Unusual behaviors may go undetected due to the high density of activities. The "hum" of urban daily life veils what would immediately attract attention in less busy domains. Uncovering a planned attack may be virtually impossible barring infiltration of the organization itself or a mistake on the part of the perpetrators.

Thus, even the most hostile waters are in some ways hospitable. At a minimum, the indigenous population provides concealment merely by virtue of its considerable numbers. It probably provides sustenance through routine commercial exchange. The residents of most cities are little fazed by the diversity of people around them and receive at best limited guidance as to how to detect threats from unfriendly individuals. Most residents are therefore unlikely to take action when they see unattended articles, marginally unusual behaviors, or other signs that would signal potential danger to the better informed. The sea may be overwhelmingly antagonistic in intent, but it is benign, even supportive, in effect.

To mitigate the dangers, it is necessary to treat the waters on which the threats depend. Removal of oxygen from a river causes its fish to die. Likewise, public officials can stunt or kill the undesirable elements residing in troublesome seas, pools, ponds, or puddles. But the remedy must be tailored. A reckless poisoning will destroy legitimate and illegitimate enterprises

alike. Effective treatment will vary depending on the nature of the threat and the sea in which it swims.

Two recent examples illustrate successful, yet completely different, kinds of treatments.

In Northern Ireland, dissatisfied members of the Catholic community have provided a haven for the IRA for decades. Long-standing antipathies, such as those between Protestants and Catholics, may be immune to rapid treatment. However, the British have demonstrated considerable patience in improving the economic and political status of Northern Ireland's Catholic population despite the resistance from Unionists. Slowly, ever so slowly, living standards, education levels, and other measures of basic well-being are improving through mutually supportive economic, social, political, and military efforts. There is now evidence that the IRA is being deprived of its oxygen. The once-friendly pool shows signs of desiring to purge itself of the group's violence.

On the other side of the world, in San Diego, the city successfully contained demonstrators who were attempting to disrupt the 2001 Biotechnology Industry Organization trade show. City officials recognized that the key target group was the sea at large (the general population) in which the demonstrators had chosen to operate. A preemptive educational campaign directed at the urban area's residents undermined support for the demonstrators prior to the event. An informed, law-abiding citizenry and city police force together refused to tolerate incursions onto the property and rights of fellow residents, choosing instead to support law enforcement efforts to restrict the activities of demonstrators who had other-than-legitimate agendas.

Eliminating sources of popular discontent, encouraging public intolerance of illegal acts, increasing public awareness of criminal methods—such initiatives make the seas unwelcome for dangerous intruders. Intruders must then seek support from the shrinking segments of the population who remain willing to be of assistance. Sources of provisions shrink accordingly. Further actions taken by the authorities to limit the freedom of movement—monitoring explosive materials, imposing curfews, and restricting travel routes—force those with ill intentions ever further into the shallow waters where they are more readily detected and removed.

The final step is to throw a net around the more exposed threats. This step depends upon considerable cooperation between disparate governmental and



AP/WIDE WORLD PHOTOS/LUCY NICHOLSON

FBI agents Greg Rabinovitz and John Connell walk along the Tournament of Roses parade route in Pasadena, Calif., on Jan. 1. The FBI cooperated with Pasadena police, the state highway patrol, and the sheriff's department as part of an unprecedented police presence to prevent terrorist incidents.

sometimes nongovernmental agencies. Few local urban governments have the financial or other capabilities to remove the threats on their own.

The federal government should therefore take the lead in the bulk of efforts to rid urban areas of such threats. The federal government should also be the conduit for disseminating the lessons learned by local, national, and international authorities. Nongovernmental elements, most notably the public itself, should be invited to play a role. The greater the collective support to limit the activities of urban threats, the tighter the net can be woven to sweep the threats from their supporting seas. ■

A reckless poisoning will destroy legitimate and illegitimate enterprises alike.

Related Reading

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Racial Profiling

Lessons from the Drug War

By K. Jack Riley

Jack Riley is director of RAND Public Safety and Justice.

A state trooper at Boston's Logan International Airport displays a portable digital device that uses a driver's license number to check passenger information, vehicle registration, and outstanding warrants. Troopers will use the device during random passenger inspections.

Police allegedly stop drivers because of their race or ethnicity, rather than because of suspected law or code violations. Colloquially referred to as racial profiling, these alleged actions have become a major source of antagonism between police and minorities in many communities. The contemporary debate about police perpetration of racial profiling has its roots in counterdrug profiles that were developed in the 1980s. The use of profiling in the drug war offers insight as to how profiling might—and should—evolve in the war on terrorism.

How Drug Profiling Did Not Work

In the 1980s, the U.S. Drug Enforcement Agency (DEA) and customs agents developed profiles of U.S. land-

based distribution networks by observing how drugs moved out of source countries and through border checkpoints. The DEA's Operation Pipeline taught state troopers to look for a variety of characteristics in drivers, including nervousness, an abundance of cash, lack of luggage for long trips, and inconsistent passenger and driver stories about such things as the destination, purpose of the trip, and the names of fellow passengers. Race indirectly entered the equation in that DEA characterized certain retail and wholesale markets as



AP/WIDE WORLD PHOTOS

controlled by racial and ethnic groups, such as Jamaicans, Haitians, Colombians, Nigerians, and Puerto Ricans.

Problems soon emerged. First, the drug couriers quickly learned what the profile flags were and adjusted their methods accordingly. Second, profiling evolved without much thought given as to how to document its utility. Consequently, when questions were first raised about racial disparities in enforcement, officials had a weak empirical basis from which to defend their activities. Civil rights activists, however, were also caught in a bind: They had compelling anecdotes about profiling but no information on the racial distribution of driving and of driving violations. Therefore, the activists had no denominator to which to compare the numerator of law enforcement stops.

The result has been a mess that law enforcement agencies and the minority communities are slowly addressing. In many communities, citizen support for law enforcement has eroded seriously, and community members have pressed for data collection about police stops. Many officers oppose data collection using individual identifiers out of fear that their jobs are on the line if their numbers are "out of line." Dispirited officers have slowed their behavior—documented through reduced ticketing and arrest rates—particularly in situations where their exercise of situational discretion could be challenged. Law enforcement leaders are grappling with structuring data collection systems that satisfy the public but provide officers with the incentive to engage in effective policing.

How Terrorism Profiling Could Work

We must ensure that terrorism profiling does not develop on a similar trajectory. Terrorism, more clearly than drugs, illustrates the need to distinguish between strategic and tactical profiling. Strategic profiling helps build intelligence about the shape of a problem, but it

has no specific and immediate use in security. The events of Sept. 11 revealed that any strategic profile must focus on identifying radical Islamic males, particularly those sympathetic to, or receiving training from, Al Qaeda.

In contrast, tactical profiling is used to provide security at specific potential targets (such as airports), and it is the kind of terrorism profiling that people are likely to encounter most frequently. Tactical profiling cannot proceed from as narrow a base as strategic profiling for the simple reason that terrorists are dedicated to ensuring that they can complete their tactical mission, and they will use deception to do so. The Al Qaeda training manual instructs its adherents to blend in through disguise and the avoidance of practices (such as prayer) that draw attention. Suicide bombers in Israel have disguised themselves as blond European tourists and Israeli soldiers. What, then, should we seek to accomplish with profiling in the tactical environment? Three objectives stand out:

- Profile “out” where possible.
- Increase the randomness of inspections.
- Make the system defensible against claims of racial profiling.

Profile out, not in. We can conserve scarce enforcement resources if we can profile people out of, rather than into, security procedures. Although the specifics vary substantially, the basic approach would be to allow certain individuals whose credentials have been verified (those with security clearances, for example) to avoid targeted security checks (but not necessarily the random checks described below) at airports and other places where such checks are implemented. Note that such a system could be racially neutral, although it may not be if those profiled out are concentrated in certain ethnic groups.

Increase the randomness of inspections. Profiling out reduces the pool of people who need to be subjected to time-consuming and potentially objectionable security procedures. This leads to the next opportunity: If enough people are profiled out, we could randomly submit a substantial portion of the residual population to inspection. True random selection is an excellent deterrent, because it is impervious to the disguise and deception that terrorists might employ. A side bonus of random selection methods is that they are inherently racially neutral.

Create defensible profiling. What makes tactical profiling defensible? Three things:

- good baseline information about the numerator (who is stopped) and denominator (the size and characteristics of the population from which those stopped were selected)
- clear analysis of the “yield” from profiling
- implementation of effective oversight.

Oversight must include a willingness to listen to complaints—and act on them. Law enforcement agencies are finding that community involvement in designing and reviewing the monitoring system is an important component. The system should be rigorously tested with both dummy contraband and undercover people fitting various profiles. The testing will both teach us about structural problems that the terrorist might exploit and bring to light any biases that might exist. Development of a data baseline will also ensure that we understand the racial implications of the system.

Unquestionably, the war on terrorism raises uncomfortable questions about balancing civil liberties with civil defense. Narrowly constructed profiles used in tactical protection situations—particularly those profiles based on race as a primary predictor—seem doomed to failure and risk generating ill will against counterterrorist efforts. Our collective interests are served by designing a system that is as efficient, effective, and defensible as possible. Such a system need not place an undue burden on any racial or ethnic group. ■

True random selection is an excellent deterrent, because it is impervious to disguise and deception.

The author thanks RAND colleagues John Godges, Sarah Hunter, Andrew Morral, and John Woodward, and former RAND colleague Gerald Kauvar, for their thoughtful comments on early drafts. Captain Ron Davis, of the Oakland Police Department, and Heather Mac Donald, of the Manhattan Institute, also provided important insights on the issue of racial profiling. None is in any way responsible for the content.

Compensation Policies for Victims of Terrorism

By **Lloyd S. Dixon and Rachel Kaganoff Stern**

Lloyd Dixon is a senior economist at RAND. Rachel Kaganoff Stern is an associate political scientist at RAND.

Women who lost family members in the Sept. 11 terrorist attacks voice their concerns about the fairness of the September 11 Victim Compensation Fund during a news conference in East Brunswick, N.J., on Jan. 16.

The attacks of Sept. 11 prompted an enormous outpouring of financial support from both public and private sources. But this unprecedented response has raised difficult questions about compensation policies for terrorist victims in general—not only the victims of Sept. 11 but also the victims of previous and future attacks.

For example, should victims of the 1995 Oklahoma City bombing also be compensated? Or victims of the Unabomber? (They haven't been.) Who should foot the bill—insurance companies, guilty parties, or taxpayers? Should businesses be compensated for lost revenues?

The response to the Sept. 11 attacks brought these questions to a head. Nearly two-thirds of American families sent checks to charities. Congress created the September 11 Victim Compensation Fund, the first government program established in the United States to compensate the victims of terrorism. Congress also appropriated funds to shore up the U.S. airline industry.

Private insurers are bearing the costs as well: Estimates of their ultimate total payments range between \$35 billion and \$75 billion, by far the largest single-event loss in U.S. history. Meanwhile, the legal system, which provides the main source of compensation for many causes of injuries, is playing a much more limited role in this case. In fact, the Victim Compensation Fund explicitly constrains an applicant's right to sue for damages caused by the terrorist events of Sept. 11.

What can be learned from this experience to help policymakers craft a fair response in the future? Part of the answer lies in considering what mix of responses—private insurance, tort actions (lawsuits), charities, and government programs—is most appropriate for terrorism losses. As outlined below, each approach has advantages and disadvantages for compensating victims of terrorism.

Private Insurance

Even though private insurance has played a central role in compensating the losses suffered on Sept. 11, there is no guarantee that it will play a leading role in the future. Policies covering terrorism are no longer available in many cases, and when they are, the coverage is usually limited. Insurance works best when the aggregate loss can be predicted with relative accuracy and the chance of very large single-event losses is negligible, as in the case of automobile accidents. Neither of these conditions applies to terrorist attacks. The law



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of large numbers that allows aggregate losses in the automobile context to be predicted with relative accuracy does not apply, and potential losses from some types of attacks—such as biological, chemical, or nuclear attacks—are so large as to be uninsurable.

Private markets have several advantages: Markets allow individuals to tailor policies to their own needs, and markets are good at setting prices to reflect risk. However, the high price of terrorism insurance will limit its availability to the few who can afford it, and very large losses will likely remain uninsured. Congress is currently debating proposals for the federal government to “reinsure” the market for terrorism insurance, at least temporarily. Under these proposals, the federal government would basically reimburse private insurers for losses over a certain threshold.

The Tort System

Although the tort system is the main mechanism for compensating losses in certain disasters, such as airline accidents, it may also have a limited role for terrorist attacks. It delivers compensation slowly and with substantial legal and other transaction costs. Moreover, in the case of terrorist attacks, the parties primarily responsible for the damages will likely either not have the resources to pay the damages or be beyond the reach of U.S. courts. Victims may seek damages from other parties who are somehow connected to the incident but are arguably not negligent.

Congress considerably limited the role of the tort system in compensating for injuries caused by the 9/11 attacks. Airlines, aircraft manufacturers, airports, the owners and leaseholders of the World Trade Center, and the City of New York are liable only up to the limits of their insurance policies. Congress also required applicants to the Victim Compensation Fund to waive the right to file a civil action in any federal or state court for damages related to the airline crashes on Sept. 11. Finally, Congress required that all claims for any loss related to the 9/11 attacks be filed in federal district court for the Southern District of New York as opposed to state courts. Congress is also considering restrictions on tort actions for future attacks.

Nonetheless, tort liability should probably not be eliminated altogether for terrorist attacks. As a society, we need to provide appropriate incentives to firms that run security systems or that have access to important infrastructures, such as pipelines, bridges, or transportation systems. On the other hand, the role of torts will

be less useful for deterring terrorists or penalizing them when they have few assets and may be beyond the reach of U.S. courts.

Private Charities

Private charities are based on voluntary contributions. The contributions are, therefore, innately unpredictable. Would the response to the Sept. 11 attacks have been as great if the attacks were against less visible landmarks? Can we count on charities to such a degree after the shock of attacks by foreign terrorists on U.S. soil has worn off? Probably not.

Government Assistance

The September 11 Victim Compensation Fund compensates individuals who were injured in the attacks and the survivors of those who were killed. The fund will pay economic damages (i.e., lost income and medical costs) and non-economic damages (pain and suffering). The presumed non-economic loss for decedents is \$250,000 plus an additional \$100,000 for the spouse and each dependent of the deceased victim. Claimants must waive their right to sue for damages in court, and options for appealing an award are limited.

Such a program can fill gaps left by the insurance system, the tort system, and private charities. Efficiently operated government programs can also circumvent the tort system's long delays and high transaction costs. There are disadvantages to government programs as well, however: They can strain the federal budget and create bureaucracies that deliver compensation less efficiently than the private insurance sector. In principle, government programs can also reduce private incentives to take appropriate actions to reduce losses. For example, the availability of subsidized federal flood insurance encourages farmers to repeatedly plant crops in land that is regularly flooded.

We at RAND are examining the gaps and overlaps of the web of programs that are compensating victims of the Sept. 11 attacks. We are also examining how losses are compensated in a number of different settings, both at home and abroad, to understand better the circumstances in which different mixes of the four approaches are effective. We hope the results of our research will help policymakers find the right balance of public and private compensation policies for the victims of future terrorist attacks. ■

Potential losses from some types of attacks are so large as to be uninsurable.

Enlist the States in Protecting the Nation

By K. Jack Riley

Jack Riley is director of RAND Public Safety and Justice.

Even if every federal agency were integrated into a seamless and effective network to secure the homeland from terrorism, the federal government could not address the totality of the problem. The 50 states have much work to do on their own.

California is a good example of what a state can and cannot do to prepare for terrorist attacks. California leads the nation in its counterterrorism efforts, in part because of its long experience with major natural disasters, the effects of which are in some ways similar to terrorism. However, California faces financial limitations, as does every other state. And, like all states, California must cope with the fact that significant portions of its vulnerable assets are in the hands of the private

sector. How the state manages these limitations could be instructive for other states as well.

Most of all, California must establish priorities for its security expenditures. The state could easily exhaust its resources in an attempt to protect just its physical infrastructure, or just its high-tech sector, or just its agricultural sector. The smart strategy, therefore, would be to place the highest priority for state security expenditures on those efforts that can simultaneously protect multiple sectors.

Scan a Larger Horizon

California has vast physical infrastructure, cyberinfrastructure, and agricultural assets. The physical infrastructure includes power plants, power grids, oil and natural gas refineries, water treatment facilities, aqueducts, highways, railroads, ports, and hospitals. The cyberinfrastructure includes the computer networks and operating systems that allow the physical infrastructure to function. The agricultural infrastructure includes crop and animal production that provides billions in revenue and tax receipts.

Many of these entities, both publicly and privately operated, have significantly improved their security since Sept. 11 at specific plants and facilities. However, these efforts have not addressed the larger question of how state authorities, with limited regulatory and security resources, can ensure the protection of a statewide infrastructure that is stretched out over vast territory and across complex and shifting boundaries between public and private responsibility.

From a statewide perspective, the three major sectors—physical infrastructure, cyberinfrastructure, and agriculture—share one major vulnerability. It is the absence of coordination—and even of trust—between the public agencies and private parties that must now



AP/WIDE WORLD PHOTOS/METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

cooperate to combat terrorism. Prior to Sept. 11, California, like most states, lacked an intelligence system to disseminate information about threats and vulnerabilities to all relevant parties. The state's new terrorism intelligence center—created immediately after the attacks—is a promising step that bears watching for its effectiveness and utility.

Despite the development of such a system, many leaders of private industry remain reluctant to share their proprietary information with the state, for several reasons. For starters, many industry leaders fear that information shared in confidence could become available to competitors through public records acts and other sunshine provisions. Industry leaders also fear that the public reporting of dangers could reduce profits. Or that police investigations on private property could further hinder business as usual. Or that the state might not reciprocate the proprietary information with security tips.

Combine Public and Private Forces

To allay these fears, the California Office of Emergency Services (OES), which already serves as a clearinghouse for crisis management in the state, should form a working group of industry representatives to identify what inducements are needed to persuade private companies to share information relevant to terrorism. For example, state lawmakers might need to pass legislation to exempt security-related proprietary information from state freedom-of-information requirements.

The important thing is to create trusting relationships between public and private entities so that they can coordinate and communicate effectively. When such coordination exists, the state can focus better on specific security measures tailored to specific sectors, as outlined below.

To secure the physical infrastructure, OES and other state agencies should

- reduce public access to web sites and other currently available sources of highly sensitive information about the physical infrastructure
- define and enforce minimum-security standards at refineries, chemical plants, power plants, water facilities, and other utilities. These standards could range from the installation of cameras and chain-link fences to background security checks for key personnel. Once the standards are established, the state can encourage compliance with them through a variety of measures, such as tax incentives.

- promote a public-private dialogue specifically related to physical security, and consider which kinds of incentives could encourage private entities to participate in the nascent intelligence-sharing community.

To secure the cyberinfrastructure, state officials should

- routinely collect information about computer-related vulnerabilities and terrorist activities
- experiment with a range of nontraditional denial and deception measures to thwart computer-based terrorist reconnaissance activities
- form an alliance with industry to generate up-to-date threat assessments and to develop cost-benefit analyses of countermeasures and security upgrades.

To secure the agricultural sector, state priorities should be to

- increase training of veterinary professionals and students to rapidly diagnose and treat foreign and exotic animal diseases
- conduct regular exercises and simulations—as is done in the realm of human public health—to hone the ability of public and private professionals to diagnose animal diseases, coordinate resources, recall food products from processing and packing plants, dispose of animal carcasses, and manage public reactions to agricultural terrorism
- explore the feasibility and desirability of a statewide agricultural insurance plan. Such a plan would protect against both naturally occurring and deliberately introduced diseases. A key objective would be to design an insurance and compensation system that offers strong incentives to food producers to practice adequate biosecurity, surveillance, and emergency response at food processing and packing plants, particularly at smaller facilities.

Finally, it would be sound policy for the state to periodically reassess its vulnerabilities to terrorist attacks. Terrorist opportunities, tactics, and motivations have changed dramatically over the past several decades. Periodic reassessments of vulnerabilities are justified in the face of the changing threat. ■

Related Reading

The Implications of the September 11 Terrorist Attacks for California: A Collection of Issue Papers, K. Jack Riley, Mark Hanson (eds.), RAND/IP-223-SCA, 2002, 98 pp., no charge.

Give Emergency Workers Better Tools, Training, Organization

By D. J. Peterson

D.J. Peterson is a political scientist at RAND. In 2001, he and a team of RAND colleagues convened a conference of more than 100 emergency personnel who had responded to the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City, the Sept. 11 attacks on the World Trade Center and Pentagon, and the subsequent anthrax incidents.

Emergency responders lack the equipment, training, and organization they need to protect themselves, let alone their communities, against major terrorist attacks. About one-sixth of those who perished at the World Trade Center—more than 400 people—were emergency responders. Clearly, government officials need a better understanding of how to protect those who protect us.

About one-sixth of those who perished at the World Trade Center—more than 400 people—were emergency responders.

Emergency responders who were involved at the World Trade Center, the Pentagon, and other attack sites included firefighters, police officers, emergency medical technicians, and construction workers. Many who survived the attacks have identified the following limitations of their existing equipment, training, and site management procedures:

- Personal protection equipment—respirators, shoes, clothing, and eye protection—was inadequate for the extended search-and-rescue campaign, partic-

ularly at the World Trade Center. Firefighting gear is designed for operations that typically last 30 minutes to an hour, not several weeks. Firefighters were hampered by such rudimentary impediments as wet garments and blistered feet.

- There was an acute shortage of respirators in the first few days at the World Trade Center, and the many types of equipment being used by various organizations were often not interoperable.
- When appropriate equipment was available, it was often not used, either because of a lack of information regarding the immediate hazards or because of lax enforcement of safety standards.
- Not all emergency responders at the various attack sites were trained to use the protective equipment. On-site training was needed for emergency medical technicians, construction workers, and volunteers.
- Emergency responders were perhaps least prepared for the anthrax incidents. In this case, the problem was not lack of information but, rather, information that changed every day.
- There were widespread problems at the World Trade Center and Murrah Federal Building, in particular, with controlling site access, monitoring and assessing hazards, communicating risks to frontline workers, managing and distributing safety equipment, and enforcing safety standards.

To improve emergency response capabilities, emergency responders have proposed these recommendations to the National Institute for Occupational Safety and Health and other organizations:

- Establish guidelines for equipment that can func-



AP/WIDE WORLD PHOTOS/FDNY

New York City firefighters from Manhattan's Ladder Company 4 and Engine Company 54 carry the flag-draped remains of a fallen comrade from the World Trade Center site, as recovery efforts continue on March 14.

tion for long periods of time amid rubble, human remains, and a range of respiratory threats.

- Identify the kinds of protective equipment required for responding to biological incidents, threats, and false alarms.
- Standardize equipment across organizations, either by coordinating procurements among the organizations or by prodding manufacturers to promote interoperability within classes of equipment.
- Determine how to rapidly provide responders with useful information about the hazards at major disaster sites and the necessary protective equipment.
- Investigate ways to better train responders to use the equipment before a disaster occurs.
- Expand the scope of disaster drills and training to simulate the logistical requirements of extended response activities.
- Develop guidelines and training for controlling access to major disaster sites and enforcing the use of protective equipment. The most critical need for site management is a coherent command authority.

Cost is a serious barrier. Providing each emergency worker with an ensemble of equipment for a range of

hazards associated with a terrorist attack could be prohibitively expensive. Smaller departments may prefer to increase their purchasing power by banding together to coordinate procurements. Larger departments may prefer to expand the number of prepositioned caches of equipment for use as necessary.

Federal support is needed to finance research and development of advanced respirators, clothing, and sensors; information and communications technologies to manage disaster sites; and improved technologies to locate responders buried or trapped under rubble. In some cases, industrial or military technologies might be easily transferable to emergency organizations. In other cases, completely new technologies will need to be devised. ■

Firefighters were hampered by such rudimentary impediments as wet garments and blistered feet.

Related Reading

Protecting Emergency Responders: Lessons Learned from Terrorist Attacks, Brian A. Jackson, D. J. Peterson, James T. Bartis, Tom LaTourrette, Irene Brahmakulam, Ari Houser, Jerry Solinger, RAND/CF-176-OSTP, 2002, 109 pp., ISBN 0-8330-3149-X, \$20.00.

Protecting Occupants of High-Rise Buildings

By Rae W. Archibald, Jamison Jo Medby, Brian Rosen, and Jonathan Schachter

Rae Archibald served as deputy fire commissioner for the City of New York during the 1970s and is a recently retired RAND vice president. Jamison Medby is a RAND policy analyst and member of the Los Angeles County Terrorism Early Warning Group. Brian Rosen and Jonathan Schachter are doctoral fellows at the RAND Graduate School.

There is little that a building owner or local government can do to shield high-rise buildings from the kind of catastrophic attacks that occurred on Sept. 11. Mitigating the *effects* of an attack, therefore, is of paramount concern. Much can be done in this regard.

We base our conclusions on an analysis of high-rise buildings and relevant laws and policies in Los Angeles, although most of our findings can apply to other major cities as well. In Los Angeles, access to most high-rise buildings has been more restricted

since Sept. 11 than it was before. Surveillance has been improved. Many building owners have increased the number of security guards. Some owners are implementing new security technologies.

Nevertheless, emergency preparedness plans need to be reviewed and, in some cases, revised. Building occupants also need to learn to play a role in their own safety. Education and training will likely need to become more intensive and frequent than in the past.

Local government and the private sector should assume different but complementary responsibilities.

To make these things happen, local government and the private sector should assume different but complementary responsibilities. We recommend the following roles for local government:

- Coordinate threat assessments among law enforcement agencies and building owners.
- Mandate, subsidize, or directly provide occupants of high-rise buildings with more education and training in emergency preparedness and building evacuation.
- Mandate more frequent and comprehensive emergency preparedness drills.
- Make public buildings exemplars of building security.
- Provide new regulatory oversight of private security firms. Establish guidelines for training security officers. Enforce consistent implementation of security measures.
- Develop building-access control programs similar to “trusted traveler” programs proposed for airports.
- Help establish guidelines for reporting suspicious activity.
- Create a “percent for security” fund, similar to the “one percent for the arts” funds, to promote scientifically sound research and evaluation of security procedures.

We recommend the following actions for building owners:

- Review evacuation plans to ensure that they are in accord with state-of-the-art security practices and the lessons learned from the World Trade Center disaster. Thousands of lives were *saved* there in part because of the installation of redundant power and lighting systems, evacuation chairs for the disabled, and reflective paint on evacuation

routes—all of which facilitated the large-scale evacuation.

- Increase the frequency and realism of evacuation drills. Include tenants, staff, and early responders, such as firefighters, police officers, and utility company emergency workers.
- Establish easily understandable rules for responding to attacks.
- Educate occupants about the roles they can play and how best to perform them.
- Update threat assessments regularly. Every building owner and manager should regularly ask the question, “Why might my building specifically be a target?”
- Formulate emergency plans jointly with public agencies. Include building managers and early responders in this process.
- Mix low-tech options, such as landscaping with cactus and bougainvillea, with high-tech options, such as surveillance cameras. Occupants will most likely appreciate the added security and possibly maintain a longer-term tenancy.

Chicago can serve as a useful model for building safety policies. Just seven weeks after the Sept. 11 attacks, the Chicago City Council passed an ordinance that requires and regulates the involvement of high-rise building owners and managers in evacuation planning and training. The ordinance complements a citywide effort, launched in 1998, to assess the threats to high-rise buildings and evaluate their preparedness for terrorist attacks.

In accordance with the earlier initiative, Chicago buildings are classified as low, medium, or high risk. High-risk buildings are then assessed by a Joint Emergency Responder Team, which includes members of the Chicago Police Department, Chicago Fire Department, and the FBI. The assessment serves two purposes. First, it identifies the vulnerabilities to building and security managers, who can then address those vulnerabilities. Second, it provides the Chicago Office of Emergency Communications with a richly detailed set of data for use in the event of a terrorist attack or other disaster. Lower-risk buildings conduct similar self-assessments and submit their results to the Office of Emergency Communications.

Chicago's policies and practices will not be appropriate for every major city. But at the very least, local



AP/WIDE WORLD PHOTOS/NICK UT

Los Angeles Mayor Jim Hahn, left, and Los Angeles City Fire Chief William Bamattre, right, meet at the city's Library Tower with building owner Rob Maguire on Oct. 23, 2001. They toured downtown high-rise buildings to evaluate safety and evacuation procedures.

law enforcement agencies and building owners in each major city should formalize regular communication with one another. A formal dialogue could serve mutually beneficial goals, such as a common understanding of emergency procedures, mutual assistance in identifying dangers, possible development of site-specific exercises, and shared information about updated countermeasures. ■

Related Reading

“Delgadillo Proposes High-Rise Safety Bill,” *The Los Angeles Times*, May 3, 2002, p. B3.

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Defending Our Local Communities

By Tim Bonds

Tim Bonds is director of the Aerospace Force Development Program for Project AIR FORCE at RAND.

Emergency responses—the rescue and relief services performed by those who are first to arrive at the scene of a disaster—are usually provided by local authorities. By taking effective action,

city and county emergency responders can reduce the harm that disasters may cause to the public and to the responders themselves.

RAND has begun a study to help the city of Pittsburgh and Allegheny County improve their emergency response capabilities. Pittsburgh and the surrounding communities in Allegheny County are of special interest to RAND for several reasons. First, Pittsburgh

and Allegheny County are broadly representative of a number of U.S. metropolitan areas that, though large, are smaller than the very largest urban areas. Pittsburgh and Allegheny County therefore offer resources and challenges similar to those of many other major U.S. cities and counties. Second, Pittsburgh and Allegheny County have an unusual diversity of topographical, infrastructure, and cultural features that present unique challenges to first responders. Third, Pittsburgh is home to one of RAND's main offices. A large and growing number of RAND staff and their families work and live in Pittsburgh and the surrounding communities.

It would be very difficult for local authorities to preempt or defeat a terrorist attack. Therefore, we believe that most local efforts should focus upon mitigating the effects of any attack that does occur. Local authorities can take several steps to both prepare for and respond to such an attack. These steps would also apply to other harmful events, such as floods, hurricanes, earthquakes, fires, or nuclear accidents. RAND is assessing the capabilities needed by the local authorities to accomplish the tasks outlined below.

Prior to an attack or other harmful event:

- *Survey potential threats and vulnerabilities.* The first step is to survey potential threats to local facilities, key portions of the public (or private) service infrastructure, and the population at large. Terrorists may target especially vulnerable facilities or groups of people and can choose to attack at the time or place that maximizes civilian casualties or poses special difficulties for defending. For example, the very nature of mass transit facilities makes it difficult to screen everyone entering. Perhaps most challenging of all, adversaries can adapt their tactics to overcome, to some degree, the defenses devised by public safety authorities.
- *Develop strategies and plans for coping with key aspects of a disaster.* Strategies need to be developed for different classes of disasters. The strategy for any given disaster should include plans to close the disaster site and its surrounding area to people and traffic. Staging areas and incident command sites need to be planned for police, fire, and medical units deploying to the disaster area. Protocols should be developed for deciding such matters as which citizens to evacuate and whether it is best to evacuate them or to keep them in place. Trans-

portation corridors for emergency vehicles and citizen evacuation must be planned, as must field sites for assembling and treating those needing medical attention. It is also important to decide where to send victims and to ensure that personnel at those destinations are properly trained, staffed, and equipped.

- *Establish command relationships and communications procedures for responders, the public, and other local, state, and federal authorities.* A key part of disaster planning is establishing beforehand a command structure for response efforts. In practice, this may be much less clear than it appears. Within the city of Pittsburgh (or any municipality, for that matter), the respective jurisdictions and complementary roles of police, fire, medical, and other authorities must be sorted out ahead of time. For example, if disaster strikes one of the smaller cities within the Pittsburgh metropolitan area, that city's leadership may direct the immediate emergency response, with Pittsburgh and Allegheny County officials playing a supporting role. In any case, ensuring adequate communications (technological equipment as well as standard protocols) among the region's leadership, state and federal authorities, and the public will require careful planning and implementation.
- *Train all levels of local police, fire, emergency medical, and other personnel.* Training at the senior leadership level will help ensure that "glitches" in the strategies and plans are identified and rectified. Such training will also serve to better acquaint the operational leadership with each other and thereby establish a working relationship prior to a disaster. At the company and squad level, training is important to develop individual and team skills—and perhaps even more important to ensure that the policies and procedures crafted by the region's leadership are understood and executed by those likely to be first on the scene.

Once an event or attack has occurred:

- *Quickly implement the planned response command structure.* Each situation is unique, but every situation will require the quick establishment of a com-



AP/WIDE WORLD PHOTOS/CITIZEN'S VOICE/THOM O'KONSKI

mand structure for the response, including the designation of what agency will direct operations. Everyone else must act in support of that agency.

- *Perform an immediate reconnaissance of the affected area.* A swift and thorough reconnaissance of the area will be necessary to determine precisely what has happened and its effects on people, buildings, and other features at the disaster site.
- *Provide direction to emergency responders, the public, and pertinent agencies and organizations.* Once the reconnaissance has been completed, the political leadership can give the appropriate directions to the parties from whom help may be needed.
- *Speed the arrival and integration of outside aid.* With good reconnaissance, the political leadership will also be in a good position to request aid from other counties, the state government, neighboring states, and federal agencies, such as the Federal Emergency Management Agency.

Emergency response at the local level is highly complex and challenging. RAND has long advised the military in the areas of threat assessment; command and control processes; intelligence, surveillance, and reconnaissance; and decision support. We are drawing on this expertise to help frame the problems faced by local authorities and identify solutions for local emergency responders. ■

A home in Bear Creek Township, Penn., is partially submerged under floodwaters on May 28. Local preparations for terrorist attacks could help authorities respond to natural disasters as well.

The Rising Priority of Local Public Health

By Lois M. Davis and Janice C. Blanchard

Lois Davis is a health policy researcher at RAND whose work focuses on public health and emergency preparedness issues. Janice Blanchard is a doctoral fellow at the RAND Graduate School and an assistant professor of emergency medicine at George Washington University Medical Center.

Hospitals and public health agencies represent the front lines for defending the public against biological and chemical terrorism. The terrorist attacks and anthrax exposures of 2001, however, have called into question the ability of our hospitals and public health systems to respond effectively to such incidents.

A key concern is whether the public health and medical communities are sufficiently integrated with the preparedness activities of other local emergency responders—such as police and fire departments—to address bioterrorism or other acts of terrorism inside our borders. Some officials have characterized the lack of integration of health responders with other first responders as a serious flaw of U.S. national strategy.

Just prior to the Sept. 11 attacks, RAND completed a nationwide survey of more than 1,000 state and local response organizations to assess their preparedness for domestic terrorism involving biological, chemical, or other weapons of mass destruction (WMD). The organizations included fire departments, law enforcement agencies, emergency medical services, hospitals, public health departments, and emergency management offices. Here, we focus specifically on the results for city and county (“local”) public health departments and for general acute-care hospitals (both public and private).

Overall, we found that only a third of the hospitals and local public health departments in the United States had plans in place to respond to a moderate-sized biological attack. Preparation for chemical attacks was little better. In most cases, the preparedness activities of local health responders were not well integrated with those of other emergency responders. Likewise, plans for disseminating public health information in the event of a biological attack were often weak at best.

Mostly Unprepared

Figure 1 shows that only about a third of the local health organizations reported having plans in place to respond to a moderate-sized biological attack, such as the intentional release of brucella bacteria at a regional airport. Hospitals and public health departments in large metropolitan counties were only slightly more likely than were the health organizations in other counties to have such response plans.

For moderate-sized incidents involving chemical weapons (such as the release of a toxic chemical agent by an explosion inside a building occupied by 200 people), the preparedness of public health agencies was similar to their preparedness for biological incidents. In contrast, hospitals were somewhat better prepared for chemical incidents, since more than half had response plans in place. Once again, large metropolitan counties were relatively better prepared than other counties.

Response plans are of limited value if they are infrequently exercised. Only about one-sixth of the health organizations with a plan for a biological incident had also exercised the plan within the previous year. Just one-third of the health organizations with a plan for a chemical incident had exercised that plan within the previous year (see Figure 2).

Survey respondents also reported that the bioterrorism planning of public health departments was usually not well integrated with the preparedness activities of other local emergency response agencies. General acute-care hospitals, however, were somewhat better integrated with other response agencies, at least according to the respondents from hospitals.

The mailing of anthrax-laced letters in 2001 underscored the critical importance of timely and effective communication by public health authorities to the media, the public, and other health providers and emergency responders about dealing with such incidents. We found that the vast majority of local public health departments that have an emergency response plan also have plans to communicate with the media. However, only 13 percent of the departments with emergency response *plans* also had written *materials* or information that could be distributed rapidly to inform other emergency responders about how to handle a biological incident.

Once Peripheral, Now Central

There is great room for improvement in planning for biological and chemical terrorist attacks at the local level. Public health has traditionally been peripheral to emergency planning. As a result, many hospitals and public health departments are unfamiliar with the command systems used by law enforcement groups and other emergency responders at disaster scenes. Confusion continues to exist between health responders and other emergency responders over who has what authority and who is in charge of the response.

In our view, insufficient attention has been paid to improving planning at the local level and to integrating hospital and public health planning activities with those of other emergency response agencies. Many hospitals and local public health agencies are unaware of what type of capabilities or surge capacity may be required to respond to chemical or biological attacks. Many health responders do not fully understand the role that other responders may play. Many health responders are not sufficiently prepared to communicate with other responders or with the public.

Better planning is needed at the local level to have an effective public health and medical response to a terrorist attack. To date, most of the emphasis of U.S. preparedness for biological and chemical terrorism has been on improving the capacity of national and state public health systems. We need to go beyond these

Figure 1—Do Local Response Plans Exist?

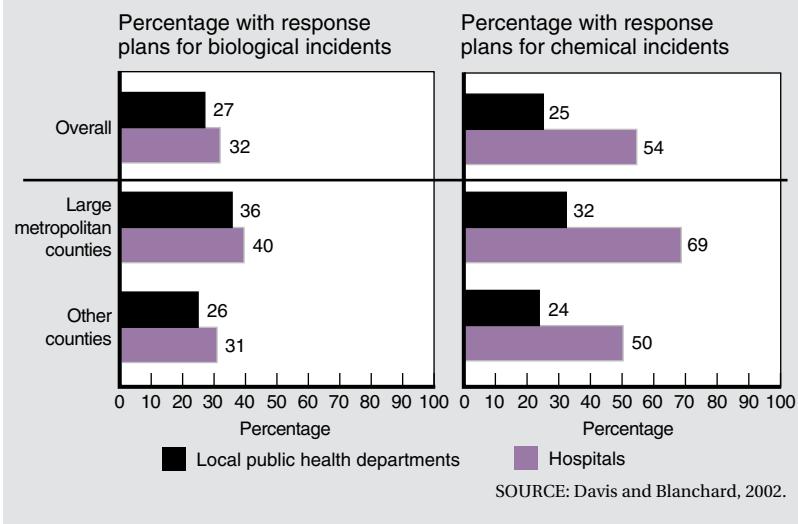
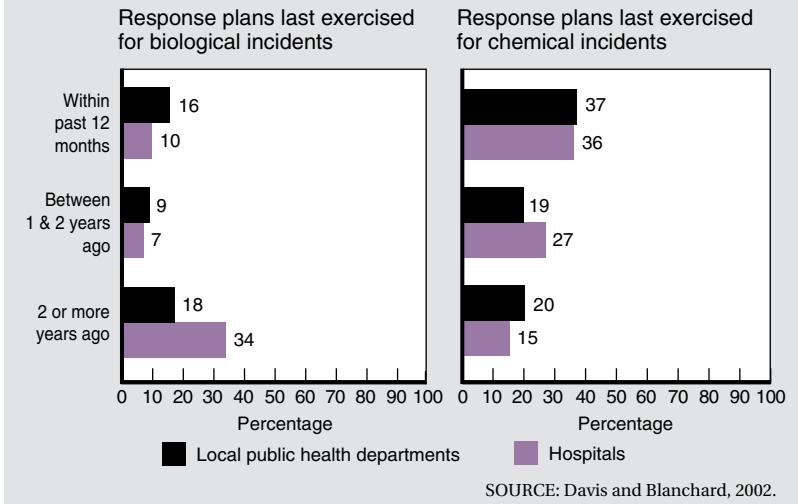


Figure 2—Have Local Response Plans Been Exercised?



efforts, to shift the focus toward the front lines, and to make sure that *local* plans and systems are in place to make the best use of *local* assets. Only through integrated planning and exercises and improved communications among health responders and other emergency responders will local communities be able to respond effectively to future biological or chemical threats. ■

Related Reading

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Helping Each Other Cope

By Mark A. Schuster and Bradley D. Stein

Mark Schuster is codirector of the RAND Center for Research on Child and Adolescent Health, director of the UCLA/RAND Center for Adolescent Health Promotion, and an associate professor of pediatrics and health services at the University of California, Los Angeles. Bradley Stein is a medical researcher at RAND and an assistant professor of psychiatry at the University of Southern California.

People who are victims or witnesses of a traumatic event often experience symptoms of stress, sometimes for years after. Events in recent years have also taught us that people need not be present at the scene of a catastrophic event to experience stress symptoms.

The terrorist attacks of Sept. 11, 2001, were immediately broadcast on television screens across the nation. Remarkable video footage of the events and their aftermath was aired repeatedly. Many Americans may have identified with the victims or perceived the attacks as directed at themselves as well. Thus, even

people who were nowhere near the attacks could have experienced substantial stress.

We at RAND conducted a survey of U.S. households three to five days after the attacks. Our primary goal was to learn how Americans reacted and how their reactions varied around the country. We also hoped to learn something about how people coped with their reactions.

We asked a nationally representative sample of 560 adults about their reactions to the attacks and their perceptions of their children's reactions. The sampling error on the survey varied with the particular questions, but it was no more than 4.3 percentage points for adults and no more than 7.7 percentage points for children (at a 95 percent confidence level).

People Were Stressed Far and Wide

Ninety percent of the adults surveyed reported experiencing one or more symptoms of stress, and 44 percent reported a substantial level of at least one symptom—such as difficulty concentrating, trouble sleeping, or repeated disturbing memories, thoughts, or dreams about what had happened.

These figures represent much higher rates of stress than those found in studies conducted prior to the attacks. Perhaps the best "baseline" for comparison is a 1987 St. Louis study, in which only 16 percent of respondents reported a lifetime history of at least 1 of 14 symptoms of stress related to a frightening event.

While those closest to the Sept. 11 attacks had the most substantial stress, respondents throughout the country reported stress symptoms. Sixty percent of respondents within 100 miles of the World Trade Center reported substantial stress reactions, compared with 36 percent of those over 1,000 miles away.

Children were also profoundly affected. Among the parents we interviewed, 35 percent reported that their children showed one or more signs of stress, and 47 percent reported that their children were worried about their own safety or the safety of a loved one.

Waterbury, Conn., area residents gather in Library Park on Oct. 11, 2001, during the *Unity In Our Community candle-light vigil in remembrance of victims of the Sept. 11 attacks.*



AP/WIDE WORLD PHOTOS/WATERBURY REPUBLICAN-AMERICAN/BOB FALCETTI

Television may have played a role. Adults watched an average of eight hours of coverage of the attacks on the day of the attacks, with nearly a fifth of the respondents reporting that they watched 13 hours or more. Those who watched the most television reported the most stress. Among children whose parents did not try to limit their television viewing, watching more television was associated with having more stress symptoms.

We cannot say whether more television viewing precipitated higher stress levels. For some people, television may have been a source of information about the situation and what to do—and therefore may have provided a positive means of coping with stress. Others, especially children, may have reacted to the repeated viewing of terrifying images with heightened anxiety.

People Cope Best Together

People responded to the tragic events of Sept. 11 in a variety of ways (see figure). Almost everybody turned to others for social support. Ninety percent turned to their religion or another source of spiritual guidance. A majority reported participating in group activities like memorials or vigils, which can provide a sense of community.

About 40 percent reported avoiding activities (like watching television) that reminded them of the events. Health professionals have tended to regard avoidance as an impediment to emotional recovery. However, under these unusual circumstances and in the face of continuous television coverage, avoidance may not necessarily have been an unhealthy response.

The American Academy of Pediatrics recommends that parents consider limiting their children's television viewing of a crisis and speak with them about the cri-

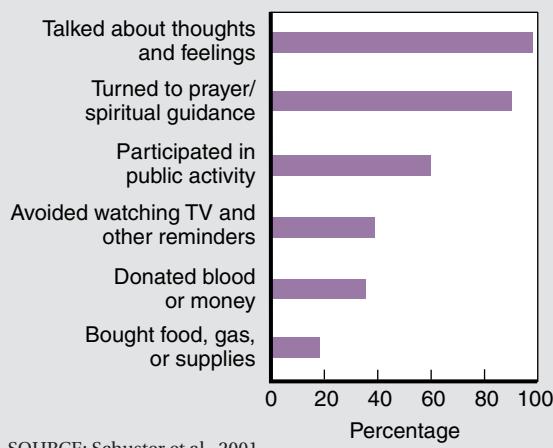
sis. Nearly all the parents we surveyed spoke with their children about the attacks. More than 80 percent of parents reported talking with their children for an hour or more, and 14 percent spoke with their children for more than nine hours. About a third of the parents tried to limit the amount of television news that their children watched. Parents of younger children and of those who had more stress symptoms were more likely to limit their children's television viewing.

Studies of prior disasters suggest that stress reactions diminish over time for the vast majority of people. But the Sept. 11 attacks, the shocking televised images, and the profound ramifications were unprecedented. We speculate that the psychological impact may not rapidly diminish for some people. We are conducting a follow-up survey to assess to what extent people have experienced persistent symptoms, such as accomplishing less at work, avoiding public gathering places, and using alcohol, medications, or other drugs to relax, sleep, or feel better because of worries about terrorism.

Indeed, many of our original respondents said they anticipated further attacks and thought that the attacks could occur in their own communities. Concerns about future attacks can heighten anxiety. Ongoing media coverage can also serve as a traumatic reminder, resulting in persistent symptoms. When people anticipate disaster, their fears can exacerbate existing symptoms and create new ones.

Our findings have important implications for health. If there are further attacks, clinicians should anticipate that even people far from the attacks will have trauma-related symptoms of stress. By intervening as soon as symptoms appear, physicians, psychologists, and other clinicians may be able to help people identify normal stress reactions and take steps to cope effectively. Clinicians can also tell parents what signs to look for in their children and how to respond to their needs. ■

How Did People Cope?



When people anticipate disaster, their fears can exacerbate existing symptoms and create new ones.

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"A National Survey of Stress Reactions After the September 11, 2001, Terrorist Attacks," *New England Journal of Medicine*, Vol. 345, No. 20, Nov. 15, 2001, pp. 1507–1512, Mark A. Schuster, Bradley D. Stein, Lisa H. Jaycox, Rebecca L. Collins, Grant N. Marshall, Marc N. Elliott, Annie J. Zhou, David E. Kanouse, Janina L. Morrison, Sandra H. Berry.

The Path of Greatest Resilience

By **Terri Tanielian, Harold Pincus, Bradley Stein, and Audrey Burnam**

The authors are conducting their research within the RAND Center for Domestic and International Health Security.

Americorps volunteers Derek Haddad, 18, left foreground, and Eddie Galan, 18, right, join 1,000 new Americorps members for a kickoff rally in Boston on Oct. 19, 2001. Americorps members volunteer for one year to work in community service.

Given the continuing threat of terrorist activity in the United States, it is important for U.S. leaders to promote a national sense of psychological resilience. As researchers, we know from our own work and from the expanding literature base that disasters and terrorist activity can produce severe and persistent emotional and behavioral consequences. Our goal is to create better prevention and response strategies for the future.

The strategies will rely on a greater understanding of the emotional and behavioral consequences of ter-

rorism. These consequences depend on many factors, including the way people process information, the way people behave in the immediate aftermath of an event, and the relationship between a person's emotional responses and psychological symptoms. Often such emotions as fear, anger, and worry can lead to psychological symptoms of anxiety and depression. Different populations of people may also respond in different ways.

Good and Bad Consequences

On Sept. 11, 2001, Americans experienced widespread symptoms of fear, anxiety, sleeplessness, and depression. Such reactions are to be expected. The very definition and intent of terrorism is to elicit horror and generate fear in a broad audience. But how these symptoms are expressed, recognized, and handled may determine how they affect people over the long term.

For some people, the consequences may be severe and persistent. For many others, the symptoms are likely to subside over time. But even if the *emotional* responses are ephemeral, they could trigger important *behavioral* responses to terrorist events, in both the short term and the long term.

For individuals and groups alike, the behavioral consequences could be both positive and negative. Positive responses could include saving more money, connecting more with others, and taking appropriate precautions. Negative responses could include drinking more alcohol, functioning less productively at work, or losing confidence in society and government. The consequences could vary depending on the characteristics of the people exposed to the trauma, the nature of the trauma to which they are exposed, the extent of exposure, and the nature and extent of support they receive afterward.



AP/WIDE WORLD PHOTOS/PATRICIA MCDONNELL

Research has demonstrated that one need not be present to experience the stress and trauma associated with disasters, violent crimes, terrorism, and war. With the immediacy and expanding reach of media coverage, people are repeatedly exposed to terrifying images, increasing the likelihood of some psychological response.

We also know from psychological theory and research that the different ways of perceiving and interpreting risk will influence people's emotional and behavioral responses to that risk. Thus, it is important to consider how risk is communicated to the public, since this can influence the ability and willingness of individuals and communities to follow response strategies, precautions, and evacuation instructions.

It Takes a Community

Disaster research indicates that the fabric of communities and of society can provide resiliency and protection against psychological consequences. Probably the best protective factors are the communities in which potential victims live, work, and interact. Conversely, it has been suggested that the erosion or alteration of a social or community fabric (e.g., closing schools, churches, or other social institutions; quarantining individuals without letting them communicate with the outside world) can cause psychological harm.

The importance of the social fabric implies the need for innovative community strategies to provide information and reassurance while maintaining an ongoing surveillance of community threats. The new approaches may also require an expansion of the concepts of local "emergency responders," "relief workers," and "trauma counselors."

Currently, the roles of emergency responders, primary care physicians, and specialty mental health services are fairly distinct. In the future, emergency response strategies may need to incorporate each of these service-provider roles. Although psychiatrists, psychologists, and other behavioral health specialists are needed to address severe emotional and behavioral consequences of traumatic events, many of these professionals today have no specialized training in emergency *response*. Likewise, although primary care and emergency care workers are mostly responsible for tending to the survivors of terrorist attacks, their priority is assessing and treating physical, not psychological, injuries.

Policymakers should also think about ways to capitalize on the strengths of a broader range of social institutions and organizations beyond the health care system. Deploying emergency mental health personnel to the site of an attack is insufficient. Terrorism spreads fear and disrupts lives far beyond the immediate site. A much broader capability is needed—to ensure an effective workforce in times of duress, to prevent mass panic that can seriously weaken the strength of our society and economy, and to protect children from the damaging effects of anxiety on learning and development.

In this regard, researchers, clinicians, and policymakers should avoid "over-medicalizing" the problem and should provide other kinds of important services and support systems. Policymakers should view employers, religious organizations, and schools as part of the response strategies and create roles for them in mitigating any potential long-term psychological harm. At the same time, clinicians and policymakers should recognize that some of the victims, especially those most directly affected by an attack, will need specialty mental health services. It is important that those services focus on both immediate and long-term needs.

Research can help prepare the nation for the vast array of emotional and behavioral consequences that could affect individuals, communities, and societal well being. We at RAND plan to assess current response capabilities and to model the effects of different policies, strategies, and programs that could be used for different terrorism scenarios.

Ultimately, we hope to share a better understanding of the psychological consequences of terrorism with government leaders so that they can develop better communication techniques to help the nation as a whole respond and recover. With proper planning, better prevention, and optimum response strategies, Americans from many walks of life—policymakers, clinicians, emergency response workers, employers, and community leaders—can work together to minimize the psychological effects of terrorism and maximize the national resistance to it. ■

The fabric of communities and of society can provide resiliency and protection against psychological consequences.

Affordable, High-Quality Child Care? Check Out the Military

By Gail L. Zellman and Susan M. Gates

Gail Zellman is a senior behavioral scientist and Susan Gates is an economist at RAND.



PHOTOS: DIANE BALDWIN

We know how to create, promote, and ensure child care quality.

else in the country. The system currently meets around 60 percent of the assessed need, serving about 176,000 children 6 weeks to 12 years old in 900 centers and in 9,200 family child care homes nationwide. (The family child care homes are usually run by military spouses.)

The Military Child Care Act (MCCA) of 1989 was designed to promote quality in child care centers, and it has helped to do so through no-notice inspections, salaries tied to training milestones, and the requirement that a training and curriculum specialist work in each center. Today, virtually all centers are accredited—compared to about 10 percent in the civilian sector. The DoD has also applied some of these same regulations to improve quality in family child care homes. Finally, the care is affordable, with the DoD subsidizing a large portion of the cost of care.

What can policymakers learn from the DoD's experience? The clear message is that affordable, high-

quality child care requires a system-level commitment to quality, as well as incentives and funding to make it a reality.

Quality can be measured in many ways, but how it is measured must be made clear. For example, the MCCA mandated quality improvement efforts, and the DoD made high-quality care a system goal. The DoD then defined "quality" as accredited care and required centers to be accredited.

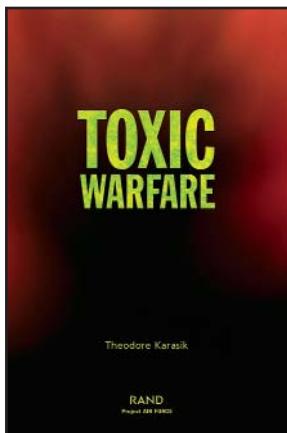
Incentives must be created to encourage quality improvement. The highly centralized DoD accomplishes this, as noted, by requiring centers to achieve accreditation. In the highly decentralized civilian sector, a carrot rather than a stick may be more effective. For example, the development of a quality rating system, with a public subsidy tied to a provider's rating, would make quality more transparent to parents and reward providers who offer it. Educare Colorado is working to develop such an incentive system in that state.

Funding—in the form of a substantial subsidy such as the one the DoD provides—must be made available to pay for quality. But how the subsidy is used is just as important. The DoD puts most of its subsidy into making care affordable. Unlike in the civilian sector, DoD bases parent fees on total family income, not child age, and pays the highest subsidies to the lowest-income parents for the most expensive kind of care: for infants and pre-toddlers.

DoD also covers the full cost of care. By contrast, CCDBG subsidies for private centers are set at 75 percent of the prevailing rate for child care fees in the area. This subsidy virtually guarantees that the quality of care will not be high, since studies show that most child care is already of mediocre quality.

We know how to create, promote, and ensure child care quality. But we also need the will—the commitment, the incentives, and the funds—to make it happen. Our children deserve no less. ■

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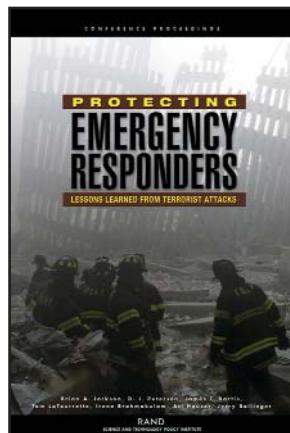


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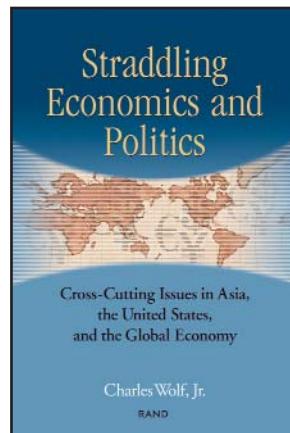


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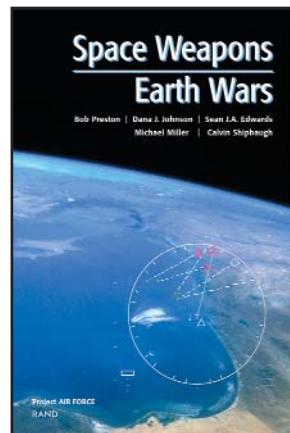


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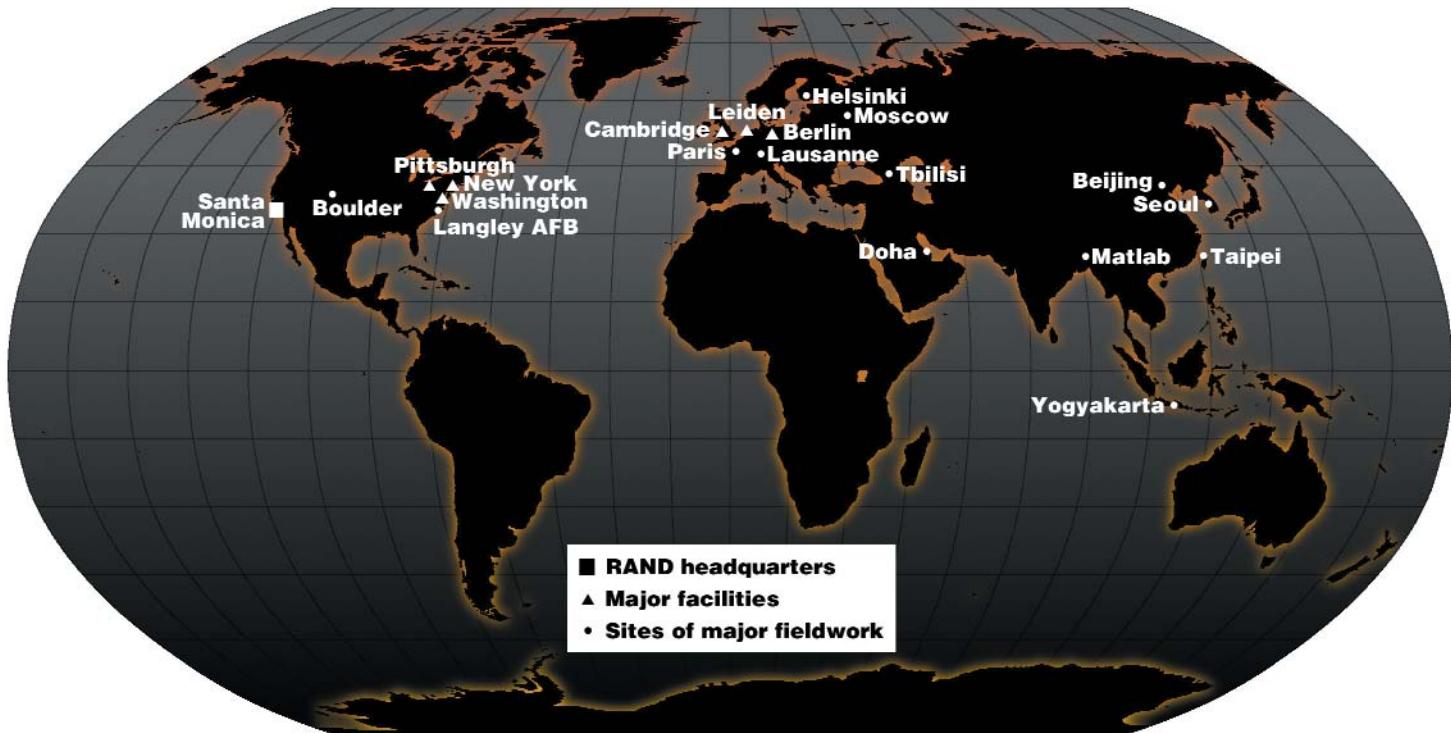
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