

Chapter 2

The Terrorist Threat—1991

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The Terrorist Threat—1991

PART I: AN UPDATE

Introduction

Radical changes in world politics since the late 1980s have produced an understandable euphoria in public opinion. The communist empire has crumbled, the Soviet Union and Eastern Europe have moved toward democracy, and an orderly transfer of power to democratic institutions has occurred across Latin America. In the Philippines the dictatorship of Ferdinand Marcos was toppled, pluralistic governments are making a comeback across Africa, and a freer political climate is developing in South Africa with the legitimization of the African National Congress and the rescission of apartheid measures.

An expectation has materialized that such favorable developments will usher in a “new world order, with positive implications for global security and prosperity. However, the record from mid-1990 to June 1991 underscores the vulnerability of the emerging reconstructed international system to continuing challenges. Threats to global peace continue. One class of threat, diverse regional struggles for local dominance, was typified by the Gulf War. Another, which often derives from that class of threat, is terrorism.

The use of both subnational and state-sponsored terrorism persists as a cost-effective, extra-legal tool in the struggle for power within and among nations. Continuing terrorist operations at both the domestic and international levels are dramatically illustrated by the upsurge of political violence connected with the Gulf Crisis and by the assassination of Rajiv Gandhi, the former prime minister of India.

This chapter examines current and future challenges of terrorism, particularly as they affect U.S. interests. The first portion of the chapter presents an overview of domestic and international terrorist events from mid-1990 to mid-1991. Two case studies follow: one analyzes single-issue terrorism, using the extreme elements in the animal rights movement as an example; the other presents the involvement of states in sponsoring terrorist activities. Concluding observations are offered in the final section.

Contemporary Terrorism—An Overview

Terrorism is not new to contemporary societies.¹ The failure of the international community to recognize terrorism as both criminal behavior and as low-intensity warfare has encouraged the expansion of terrorist activity in the last two decades. Many hundreds of terrorist groups have caused great damage worldwide; some have been exploited by state sponsors in the process. Terrorist operations have been cheap to activate and expensive to counter.²

The Groups

Although springing from diverse political and social roots and sustained by wide-ranging ideologies, terrorist groups share a common disposition, namely, hostility toward the moral and legal norms of the domestic and international order and glorification of violent deeds for the sake of the causes they seek to advance. They often turn to violence after frustration with the failure of legal or less extreme actions to achieve their political goals. Terrorists frequently regard themselves as morally above the

¹There is no universally accepted definition of “terrorism.” One plausible definition is the unlawful use of physical force or psychological intimidation by sub-state or clandestine state agents directed against innocent targets, primarily intended to achieve social, economic, political, strategic, or other objectives. The U.S. Department of State uses the definition contained in Title 22 of the U.S. Code, sec. 2656f(d). It defines terrorism as “. . . premeditated, politically motivated violence perpetrated against noncombatant targets by subnational or clandestine agents, usually intended to influence an audience.” According to the Department of State view “. . . the term non-combatant target is interpreted to include, in addition to civilians, military personnel who at the time of the incident are unarmed and/or not on duty.” The Department of State also considers “. . . as acts of terrorism attacks on military installations on armed military personnel when a state of military hostilities does not exist at the site, such as bombings against U.S. bases in Europe, the Philippines, or elsewhere.” See *Patterns of Global Terrorism: 1990* (Washington, DC: Office of the Secretary of State, Office of the Coordinator for Counterterrorism, April 1991). For latest sources on the definitional forms see, for instance, Yonah Alexander (ed.), *Terrorism: An International Resource File, 1989 Index*, and *1990 Index* (Ann Arbor, MI: UMI, 1990-1991), and *Terrorism and International Resource File, 1970-1989 Bibliography* (Ann Arbor, MI: UMI, 1991), later cited as *1970-1989 Bibliography*.

²For some surveys of terrorist activity, for example, Yonah Alexander and Ray S. Cline (eds.), “Worldwide Chronology of Terrorism-1981,” *Terrorism: An International Journal*, vol. 6, No. 2 (1982), pp. 107-388; Yonah Alexander (ed.), *The 1986 Annual on Terrorism*, (Dordrecht, The Netherlands: Martinus Nijhoff, 1987); Yonah Alexander and Abraham H. Foxman (eds.), *The 1987 Annual on Terrorism* and *The 1988-1989 Annual on Terrorism*, both published by Martinus Nijhoff in 1989 and 1990, respectively.

legal constraints of society and government and, consequently, do not feel bound by any limits, except those they have imposed on themselves for purposes of revolutionary success.

Specifically, indigenous subnational groups, mostly acting independently but sometimes as proxies of governments, have proliferated throughout the world, seeking to achieve ideological, nationalist, or other goals (e.g., single-issue political objectives).³

U.S. terrorist groups represent a variety of ideologies and political and social goals. For example, among the more active current actors is the Aryan Nations, committed to white supremacy, including the elimination of Jews and other minorities. It is probably the most violent right-wing group in the United States and provides an umbrella framework to maintain ties among several similarly oriented groups. Other groups active within the past two decades have had leftist (e.g., the Weather Underground), nationalist (e.g., los Macheteros), or special interest (e.g., Animal Liberation Front) orientations.

In Europe, a multitude of ideological and nationalist groups exist. A list of the more active ones, with their principal arenas of operation includes:

- Basque Fatherland and Liberty (ETA)-Spain, France;
- Corsican National Liberation Front (FLNC)---France;
- Direct Action (AD)-France;
- First of October Anti-Fascist Resistance Group (GRAPO)-Spain;
- Provisional Irish Republican Army (PIRA)---United Kingdom;
- Red Army Faction (RAF)-Germany;
- Red Brigades (BR)-Italy; and
- 17 November Revolutionary Organization—Greece.⁴

One of the most active European groups is the Provisional Irish Republican Army (PIRA), also known as the Provos, an offshoot of the Irish

Republican Army (IRA). PIRA was formed in 1969 to force Great Britain to evacuate Ulster and then to unify Ireland under a Marxist government. Acting as a clandestine armed wing of the Sinn Fein (the legal political arm of the IRA), PIRA operates in Northern Ireland, the Irish Republic, Great Britain, and also in Western Europe.⁵

Several Middle Eastern groups are of leading importance. One is the Palestine Liberation Organization (PLO). Founded in 1964 by Palestinian nationalists seeking to establish an independent Palestinian state in place of present-day Israel, the PLO serves as an umbrella organization for several constituent groups headed by Yasser Arafat, including Fatah, the Popular Front for the Liberation of Palestine (PFLP), the Palestine Liberation Front (PLF), and several others. Despite Arafat's renunciation of terrorism and his recognition of Israel, the PLO has not relinquished the "armed struggle" strategy or yet modified the Palestine charter, which still calls for the elimination of the Jewish state. The PLO is headquartered in Tunis and operates from other bases in the Middle East and around the world.⁶ Most information indicates that, since the official renunciation of terror by the PLO, its terrorist activity has diminished greatly, with the exception of attacks by the Palestine Liberation Front (PLF), run by Abu'l Abbas. The PLF appears to be a semi-renegade member of the PLO. It was responsible for the attack on the cruise ship *Achille Lauro*, and for the failed attempt to kill large numbers of civilians and tourists on Tel Aviv beaches in 1990.

A second group is the Abu Nidal Organization (ANO), often called the Fatah Revolutionary Council, a Palestinian movement outside the framework of the PLO. Formed in 1974 by Sabri al-Banna, who uses the alias Abu Nidal, ANO is also known by other names such as the Arab Revolutionary Council, the Arab Revolutionary Brigades, Black September, and the Revolutionary Organization of Socialist

³See, for instance, Yonah Alexander (ed.), *International Terrorism: National, Regional, and Global Perspectives* (New York: Praeger, 1976); Walter Laqueur, *The Age of Terrorism* (Boston, MA: Little, Brown & Co., 1987); and *Terrorist Group Profiles* (Washington DC: U.S. Government Printing Office, 1989).

⁴For a recent study, see, for example, Yonah Alexander and Dennis A. Pluchinsky (eds.), *European Terrorism: Today and Tomorrow* (McLean, VA: Brassey's (US), Inc., 1991).

⁵For recent studies see, for instance, Yonah Alexander and Alan O'Day (eds.), *The Irish Terrorism Experience* (Aldershot, U.K.: Dartmouth, 1991), *Ireland's Terrorist Trauma: Interdisciplinary Perspectives* (New York: St. Martin's Press, 1989), *Ireland's Terrorist Dilemma* (Dordrecht, The Netherlands: Martinus Nijhoff, 1986), and *Terrorism in Ireland* (London: Croom Helm, 1984).

⁶See for example, Yonah Alexander and Joshua Sinai, *Terrorism: The PLO Connection* (New York: Crane Russak, 1989) and "Middle East Conflict" in 1970-1989 *Bibliography*, op. cit., footnote 1, pp. 147-182.

Muslims. It aims to undermine diplomatic moves for negotiating a peaceful settlement of the Arab-Israeli conflict and to eradicate the “Zionist presence” from the Middle East. Currently based in Iraq, where it was headquartered in 1974-83, the ANO has also been located in Syria (1983-87) and Libya (1988-90). Although it has recently undergone internal friction when 100 members rejoined the PLO mainstream Palestinian Movement, and many others were murdered by Abu Nidal, the ANO is still considered as the most dangerous group in the world operating in the Middle East, Europe, Asia, and Latin America.⁷

A third Middle Eastern group, as dangerous as the ANO, is Hizbollah, also known by other names including the Party of God, Islamic Jihad, Revolutionary Justice Organization, Organization of the Oppressed on Earth, and Islamic Jihad for the Liberation of Palestine. A radical Lebanese Shi’a group, it was formed in 1983 to realize the establishment of an Iranian-style Shi’ite Islamic Republic in Lebanon and to bring about the elimination of non-Islamic presence and influences from the Middle East. Closely tied to Iran, Hizbollah operates from several bases, such as the Beka’a Valley, Beirut, Southern Lebanon, as well as from locations in Western Europe and Africa.*

A final group worthy of mention is the Popular Front for the Liberation of Palestine-General Command (PFLP-GC), run by Ahmed Jibril. This organization has been widely reported to have carried out the bombing of Pan Am Flight 103 over Lockerbie, Scotland in 1988, commissioned to do so by the Iranian Government, although the United States has now publicly accused only Libyan nationals of participation. However, PFLP-GC has taken credit for numerous other terrorist attacks in Europe and the Middle East. Press reports have indicated that this group may hire itself out for terrorist acts. It is based in Syria, and was apparently dormant during the Gulf War.

In Latin America, guerrilla movements are active in most countries. Some of these movements frequently employ terrorist tactics. Among the most

dangerous is Sendero Luminoso (SL), located in Peru. Formed as a Marxist “Shining Path to the Future” in the late 1960s by Professor Abimael Guzman Reynoso, it was initially formed as an Indian-based rural rebel movement. Its aim is to eliminate the current governmental structure and replace it with a peasant revolutionary regime. Since 1986, SL has also resorted to urban terrorism, particularly in Lima.⁹ In the countryside, SL has cooperated with cocaine gangs in successful attempts to raise funds and pose as defenders of the interests of the impoverished peasantry. SL’s terrorist tactics include mass murders of peasants and peasants’ families who refuse to join their efforts or who try to oppose them. Vicious warfare has taken place between them and indigenous tribal peoples in remote areas, as well as between them and the Tupac Amaru Revolutionary Movement, another Marxist-Leninist guerrilla group active in Peru. SL has not, as yet, become active outside Peru’s borders, beyond attempts to extend some influence to neighboring Bolivia.

Among Asian terrorist movements operating during the past two decades, the more prominent have included the Liberation Tigers of Tamil Eelam (LTTE); the New People’s Army (NPA) of the Philippines; and the Japanese Red Army (JRA).¹⁰ LTTE is a national liberation movement based among ethnic Tamils in the north and east of Sri Lanka, with support among Tamils in neighboring regions of India, particularly the State of Tamil Nadu. It has been responsible for a large number of mass murders and bombings in Sri Lanka, often attacking civilians among their ethnic rivals, the Sinhalese. Many Indian officials and others suspect the involvement of LTTE in the assassination of Rajiv Gandhi, during parliamentary elections in May 1991, although LTTE spokesmen have denied the allegation.

The JRA and NPA have actively targeted American interests and citizens. The NPA was established in 1969 as the guerrilla arm of the Communist Party of the Philippines. It has organized an urban infrastructure for the purpose of replacing the Manila regime with a Maoist government.

⁷Yossi Melman, *The Master Terrorist: The True Story of Abu Nidal* (New York: Avon, 1987).

⁸*Terrorist Group Profiles*, op. cit., footnote 3, pp. 15-18.

⁹*Patterns of Global Terrorism: 1990*, op. cit., footnote 1, pp. 73-74.

¹⁰*Terrorist Group Profiles*, op. cit., footnote 3, pp. 114-130; and Frank G. McGuire, *Security Intelligence Sourcebook* (Silver Spring, MD: Interests, Ltd., 1990), pp. 109-164.

The North Korean Government has used operatives in terrorist mass murders directed at South Korean targets. Two major incidents were the assassination of several cabinet members by bombing on an official visit to Burma and the destruction of a Korean Air Lines aircraft over the Andaman Sea in 1986.

Terrorist Networks

Experience over the past two decades shows that terrorist groups thrive on collaboration across national boundaries. Shared ideologies and commitments to radical strategies, such as professed struggles against capitalism, imperialism, racism, and Zionism, motivate groups to work together on an international scale. Another manifestation of international terrorist activities is state-sponsored terrorism: the use of subnational surrogates that seemingly act independently of their governmental sponsors. State-sponsored terrorism has become a form of low-intensity conflict that states (e.g., Iran, Iraq, Syria, Libya, and North Korea) undertake when they find it convenient to engage in hostile activities without being held accountable.

The informal and formal relationships among various terrorist groups and state sponsors has resulted in a national, regional, and global framework for terror. The international character of many terrorist efforts often compounds the difficulty of identifying the initiator or sponsor of a given terrorist act. There are many examples of international cooperation in the terrorist world. The ANO has received safe haven, financial aid, training, logistical assistance, and other help, including selected operational support from Iraq, Libya, and Syria. ETA (Basque Fatherland and Liberty) received training from Libya and Nicaragua and developed ties with PIRA. Hizbollah has enjoyed extensive aid from Iran, including funding, training, weapons, and logistical and operational support. North Korea and Libya also extended help, such as logistical support. The PLO developed extensive

links with many terrorist groups (e.g., PIRA) and governments. Fatah, in particular, received training and weapons from countries such as the Soviet Union, other Eastern European states, China, Cuba, North Korea, and Vietnam.¹¹

An interesting aspect of terrorist networks is the formation of a "regional" framework within which like-minded groups collaborate. A case in point is the European "antiimperialist" network that consists of several Marxist-Leninist groups, such as the Red Army Faction, Direct Action, and the Red Brigades. From 1985 to February 1987 the RAF and AD established the first front. After the AD leadership was arrested, the RAF joined the RB in the second front. It folded again when the RB was neutralized in 1988. Nevertheless, there have been recent efforts to reconstruct the framework by the RAF and GRAPO. It is not surprising, therefore, that in 1990 the RAF was engaged in several proxy-operations in Germany in support of GRAPO (e.g., arson attacks and vandalism against several Spanish car dealerships in Germany).¹²

Because substantial state-sponsored support of terrorist groups, particularly by the Soviet Union and Eastern Europe, has been withdrawn, and because international counterterrorist efforts are increasing and apparently becoming more successful, many subnational perpetrators will find it more critical than ever to develop stronger linkages.

Statistical Trends

The year 1990 saw the frost annual decrease (10 percent) in both local and international terrorist events since 1987.¹³

There are several reasons for the overall statistical decline of terrorist incidents in 1990. First, the apparent elimination of Soviet and Eastern European support of various terrorist groups, particularly in the Third World, has resulted in disarray among many movements. Second, the world community has increased both security measures and interna-

¹¹See, for instance, *Patterns of Global Terrorism: 1990*, op. cit., footnote 1, pp. 49-76.

¹²See Yonah Alexander and Dennis A. Pluchinsky (eds.), *European Terrorism: Today and Tomorrow* (McLean, VA: Brassey's (US), Inc., 1991), ch. 2.

¹³These statistics are from Business R&I International, *Annual Risk Assessment 1990* (1991). Statistics on terrorism vary widely. Numerous data banks focus on domestic terrorism, international terrorism, state terrorism, terrorism in specific countries, etc. Also, interpretation of these statistics differ, depending on the body organizing the data. A major private statistical source for both domestic and international incidents is the database of Business Risks International (BRI) located in Arlington, VA. Since 1979, it has issued monthly and quarterly reports which are sold to subscribers. Some of the statistical material has been reprinted elsewhere in such publications as *Terrorism: An International Journal* and the *Annals on Terrorism*, both edited by Yonah Alexander. The statistical material used in this section is drawn from BRI sources. Other statistical databases consulted for this paper include Jaffee Center for Strategic Studies at Tel Aviv University (JCSS) and RAND Corp. materials.

tional cooperation due to the Gulf Crisis and the anticipation of Iraqi-sponsored terrorist operations. Third, Syria, as a member of the U.S.-led international coalition, has become a moderating influence, as apparently was the case with both Iran and Libya. It seems these three countries applied pressures on secular and religious Middle Eastern groups to refrain from terrorist operations during the Gulf Crisis. Finally, in spite of the tensions generated by the Gulf Crisis and War, some groups were not willing to take risks on Iraq's behalf, since it appeared to be ill-positioned for its confrontation with the international coalition.

The first quarter of 1991 saw a 10-percent increase in the number of terrorist incidents, both local and international, over the previous quarter's figures, an increase that may be related to the outbreak of the Gulf War. During this period, anti-U.S. attacks increased by more than a factor of 4 relative to the same period in 1990.

Figures 2-1 and 2-2 furnish information on terrorist trends during the past few years.

Modi Operandi and Targets

Terrorist groups have utilized a wide range of tactics during the last two decades. These have included arson, bombings, kidnappings, hijackings, facility attacks, and assassinations. The terrorist arsenal comprises not only explosives and arms, such as guns, but also includes more sophisticated weapons (including antitank rockets and ground-to-air missiles).

The modi operandi of terrorist groups vary considerably depending on the motivations and capabilities of the perpetrators. In the 1970s, for example, Fatah destroyed fuel tanks at Rotterdam oil docks, murdered 11 Israeli athletes at the Munich Olympics, and attempted a missile attack against El Al aircraft in Rome. In Spain, GRAPO kidnapped the president of the Supreme Military Tribunal, assassinated the Director of Penal Institutions, and bombed a Madrid cafe, killing 8 and wounding 40.

And the JRA carried out a machine-gun and grenade attack at Lod Airport, killing 26 people (including 16 Puerto Rican pilgrims to the Holy Land), attacked Shell Oil refinery storage tanks and seized a ferryboat crew and hostages in Singapore, and hijacked a Japan Airlines plane in Bombay.¹⁴

In the 1980s, subnational groups continued on two paths: sometimes targets were specifically selected and sometimes victims were indiscriminately attacked. Hizbollah bombed U.S. and French peacekeeping forces and diplomatic buildings in Lebanon, kidnaped Western citizens in Beirut, and hijacked Kuwait Airways flight 422. Direct Action bombed the American School in Paris, employed a car bomb against the headquarters of the Organization for Economic Cooperation and Development, and murdered the Chairman of Renault. In Colombia, a local group, M-19, kidnaped and subsequently killed a U.S. citizen, staged simultaneous attacks on military and police installations and banks, and seized Bogota's Palace of Justice, taking some 500 hostages, including many members of the Supreme Court (who were later killed) and the Council of State.

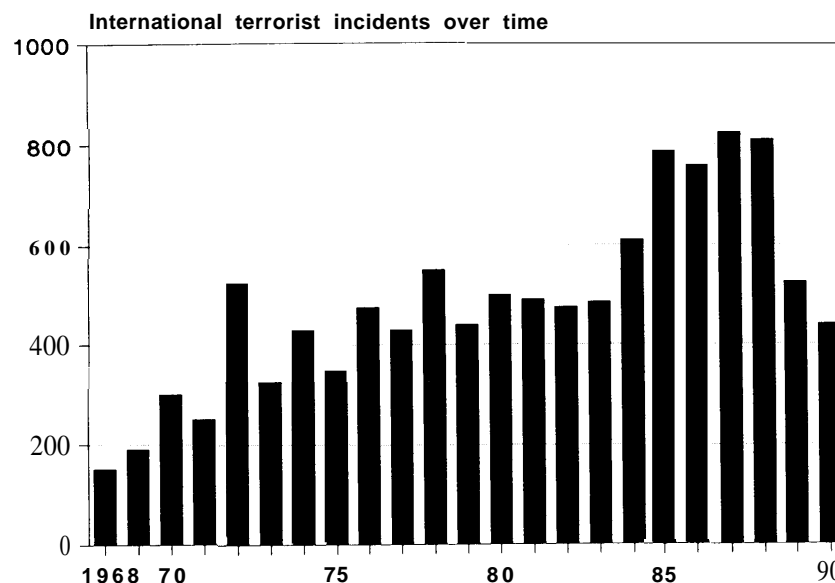
In 1990, both domestic and international terrorist groups continued to conduct their operations with similar tactics. The following few examples illustrate the nature and scope of terrorist capabilities:¹⁵

- Spanish Basque deputies were shot in a Madrid restaurant by ETA.
- Italian environmentalists conducted an explosives attack, damaging some French electrical utility operational equipment close to the Golfech nuclear power station.
- A house was blown up in Stepanakert, the administrative center of Nagorno-Karabakh, by unknown Armenian extremists.
- Kazem Rajavi, brother of the leader of the anti-Tehran Iranian Mujaheddin, Massoud Rajavi, was assassinated in Geneva, apparently by Iranian agents.

¹⁴Chronologies of terrorist events used for this paper include a variety of sources, such as press indexes; FBI; JPRS; NEXIS; Facts-on-File; U.S. government reports, such as those published by the FBI, Department of Defense, and Department of State (e.g., Bureau of Diplomatic Security, *Significant Incidents of Political Violence Against Americans 1988*); Edward F. Mickolus, Todd Sandier, and Jean M. Murdock, *International Terrorism in the 1980s: A Chronology of Events, vol. H, 1984-1987* (Ames, IA: Iowa State University Press); yearly reports of terrorist events prepared by the Project on Low Intensity Warfare of JCSS, such as the latest publication *International Terrorism in 1989* (Jerusalem: The Jerusalem Post, 1990); the chronologies published by the RAND Corp. on different types of terrorism (e.g., Brian M. Jenkins et al., "A Chronology of Terrorist Attacks and Other Criminal Actions Against Maritime Targets," Santa Monica, CA: The RAND Corp., September 1983); and the information on terrorist attacks research by the Institute for Studies in International Terrorism, State University of New York.

¹⁵See, for example, BRI, *Annual Risk Assessment 1990*, op. cit., footnote 13, and *Patterns of Global Terrorism: 1990*, op. cit., footnote 1.

Figure 2-1—All International Terrorist Incidents, 1968-90



SOURCE: U.S. Department of State, *Patterns of Global Terrorism: 1990, 1991*.

- PIRA bombed London's Carleton Club (seriously wounding two people) and killed Ian Gow, British Conservative Party Member of Parliament in a car bomb.

By mid-1991, the sample of terrorist incidents for the current year shows similar diversity of tactics. PIRA was responsible for the mortar bomb attack against the residence of the British Prime Minister at 10 Downing Street and the bombing of crowded railway stations in London, the RAF sprayed the U.S. Embassy in Bonn with over 250 rounds from automatic weapons, and Islamic Jihad claimed responsibility for bombing the car of an Iraqi commercial attache in Ankara.¹⁶

The Gulf Crisis triggered an upsurge of uncoordinated violent demonstrations and terrorist attacks worldwide, directed against U.S. or coalition targets. Many of the attacks involved incendiary devices, hand grenades, and small bombs. Most caused property damage but resulted in few casualties. The

operations were usually conducted by indigenous groups that had been engaged in similar activities in the past. In claiming responsibility for some of the attacks, the perpetrators have rationalized their operations by referring to their sympathy for Iraq in the Gulf Crisis.¹⁷

Terrorists continue to employ a variety of methods, including assassination, destruction of property, and the murder of innocent people. They shift targets readily, making security for their enemies difficult to achieve.

The Threat to the United States, 1970-91

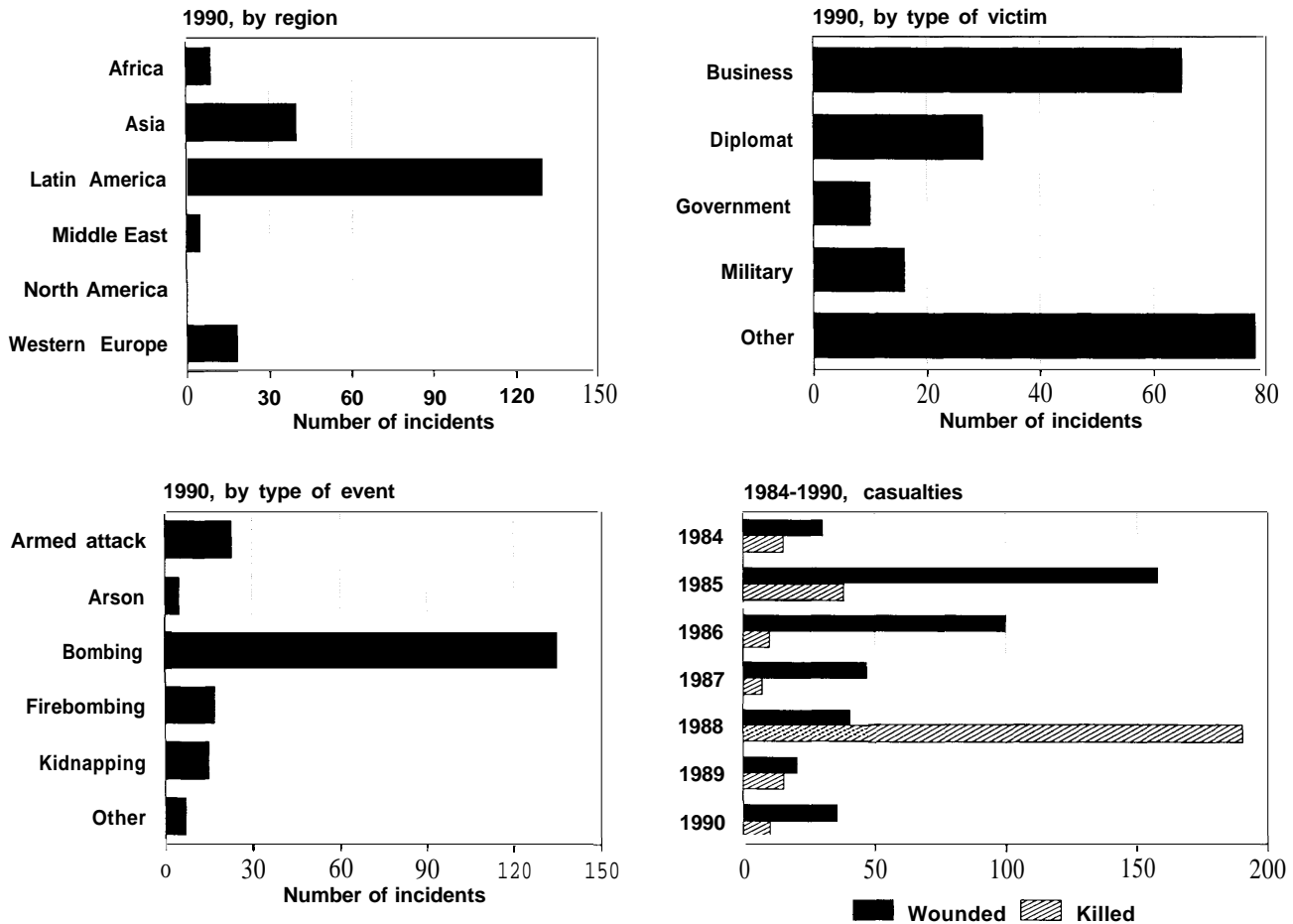
The United States is a principal target of terrorism. Not only do domestic extremist groups commit acts of terrorism in the United States, but international groups frequently do so against the many American targets abroad. However, it should be noted that international acts of terrorism have rarely occurred on U.S. soil.¹⁸

¹⁶See, for instance, BRI, *Risk Assessment Quarterly*, op. cit., footnote 15; JPRS reports; and daily press reports.

¹⁷*Ibid.*

¹⁸The most recent confirmed incident of terrorism in the U.S. with international implications occurred in 1983. A bombing took place in Miami that was attributed to Omega 7, a Cuban exile group. In 1989, an attempt was made to kill Captain Rogers, former commanding officer of the U.S.S. *Vincennes*, presumably in retaliation for the downing of an Iran Air aircraft over the Persian Gulf in 1988. An incendiary device caused Capt. Rogers' van to burst into flame in San Diego while his wife was driving it. She received only minor injuries. While never publicly documented, suspicions are that agents of Iran perpetrated the attack.

Figure 2-2—Anti-U.S. Attacks



SOURCE: U.S. Department of State, *Patterns of Global Terrorism: 1990, 1991*.

Domestic Terrorism

During the 1970s, indigenous and foreign terrorist campaigns in the United States resulted in 600 attacks against civilian and military targets. The success of the counterterrorism activities of the FBI and law enforcement agencies, coupled with changes in the global political environment, affected the frequency of operations domestically in the 1980s. During the last decade the number of terrorist incidents reached 200, a two-thirds decrease from

the 1970s. Moreover, most of these attacks occurred in the early years of the decade.¹⁹

The same encouraging trend persisted in 1990 with only four events recorded, the lowest number in any year since 1970. The most dramatic event was the assassination of Rabbi Meir Kahane, the Israeli leader of the Jewish Defense League (JDL), by an Egyptian immigrant to the United States. Other events included: an abortive plot by militant “skin-heads” to pump cyanide gas into a synagogue; the explosion of a bomb outside a Cuban museum in

¹⁹See, for instance, *Regional Risk Assessment: North America* (Alexandria, VA: Risks International, Inc., August 1979); “Report of the Policy Study Group on Terrorism” (New York State: The Criminal Justice Institute, November 1985); Samuel T. Francis, *The Terrorist Underground in the United States* (Washington, DC: The Nathan Hale Institute, n.d.); Brian M. Jenkins, “Terrorism in the United States,” *TVI Journal*, vol. 5, No. 1 (1984), pp. 1-4; and FBI publications such as *Terrorism in the United States, 1989* (Washington, DC: Terrorist Research and Analytical Center, Counterterrorism Section, criminal investigative Division, 1990).

Miami; and the arrest in Florida of individuals affiliated with the PIRA while attempting to purchase a heat-seeking antiaircraft Stinger missile and other sophisticated weapons.²⁰

The evolving Gulf Crisis increased concern for potential Iraqi-instigated attacks in the United States in 1990-91. Anxiety intensified as a result of specific calls by the Iraqi leadership and Middle Eastern terrorist groups to target America. Although the fear of attacks was widespread, no incidents occurred in the United States, perhaps due to the preventive security measures undertaken by the U.S. Government and the private sector. These efforts included reduction of Iraqi diplomatic staff; close scrutiny of Iraqi and other nationals suspected of being linked to radical Arab causes; upgrading security at government and military installations; and beefing-up security procedures at airports and other commercial industries.

When the Gulf War broke out on January 17, 1991, security measures increased even further. These activities contributed to the absence of any Iraq-sponsored or foreign-related incidents in the United States linked to the Gulf War.

International Terrorism

Throughout the 1970s and 1980s, U.S. interests abroad, including cultural, economic, and military, became a major target. Generally, about one quarter of international terrorist attacks have been aimed at U.S. citizens or interests. According to one source, a total of 1,617 anti-American international attacks occurred between 1970 and 1989. Out of a total of 939 incidents internationally during January-March 1991, 104 operations were directed against Americans and U.S. interests compared to 39 in 1990 and 32 in 1989 during the same quarter. U.S. corporate targets were involved in 39 incidents, most of which took place in Latin America and Europe. This escalation was probably due primarily to the impact of the Gulf War.²¹

The United States has been the most popular single target of international terrorism. American citizens, officials, diplomats, and military officers have been victimized by both state-sponsored terrorism (e.g., Libya, Syria, and Iran) and substate

groups, including Marxist-oriented (e.g., Germany's RAF), Islamic Fundamentalist (e.g., Hizbollah), Palestinian (e.g., ANO), and ideological mercenaries (e.g., JRA).

Some of the significant international terrorist incidents directed against the United States during the past decade include the following events. Although the figures cited mostly identify only U.S. casualties, in many of the incidents a large number of non-U.S. citizens were also killed or wounded.²²

1982

- Midair explosion on a Pan Am jet bound from Tokyo to Hawaii, killing a Japanese boy and injuring 15 other passengers.

1983

- . Bombing of the U.S. Embassy in Beirut, killing 17 Americans and many Lebanese.
- . Bombing of U.S. Marine headquarters at the Beirut airport by a Shi'ite suicide bomber, killing 241 Marines.
- . Bombing of the U.S. Embassy in Kuwait by Lebanese and Iraqi terrorists.

1984

- Bombing of the U.S. Embassy annex in East Beirut, killing two military officers.
- . Hijacking of a Kuwaiti airliner to Iran, killing two Americans.

1985

- . Hijacking of TWA flight 847 by Shi'ite terrorists, lasting 17 days, with the torture and killing of a U.S. Navy diver.
- . Hijacking of the Italian cruise ship *Achille Lauro* by members of the Palestine Liberation Front and the murder of a disabled American tourist.

1986

- . Hijacking of Pan Am Flight 73 in Karachi, killing two U.S. citizens.
- . Bombing of TWA Flight 840 en route from Rome to Athens, killing four Americans, including a 9-month-old baby.
- . Kidnaping of two Americans in Beirut.

1987

- . Attack on a U.S. military bus in Greece by 17 November, wounding 17 servicemen.

²⁰BRI, *Risk Assessment Quarterly*, op. cit., footnote 13, pp. 2-3.

²¹*Ibid.*

²²This information is drawn from various chronologies available. See footnote 14 for details.

- Kidnaping of four Americans and a U.S. resident alien in Lebanon.

1988

- Kidnaping and later murder of U.S. Marine Lt. Col. William Higgins of the U.N. Observer Mission in Lebanon.
- Attacks on U.S. military personnel in Greece and Italy and American facilities in France, Spain, and West Germany.
- Destruction of Pan American Flight 103 over Lockerbie, Scotland, by an onboard explosive device killing 271 people in the aircraft and on the ground, the former from some 20 nations, but mostly Americans.

1989

- Col. James N. Rowe, a U.S. military adviser to the Philippines, was shot to death in Manila.
- Seven U.S. soldiers were wounded by a bomb in Honduras.

In 1990, similar attacks were perpetrated against U.S. interests abroad. Among the significant incidents were:²³

- The U.S. Embassy in Lima, Peru, was car bombed, injuring three guards.
- A U.S. general with NATO was the target of an unsuccessful kidnapping or assassination attempt.

In early 1991 and particularly following the start of Operation Desert Storm, Iraq and its substate supporters called for a Jihad (Holy War) against U.S. and allied interests worldwide. Some 170 incidents were recorded against the coalition members, most of whom were Americans. For example, the U.S. Embassy in Lima was struck on January 25, 1991, by an RPG-7 rocket-propelled grenade, causing only superficial damage. The Tupac Amaru Revolutionary Movement, which claimed responsibility for the incident, condemned the United States for its involvement in the Gulf and offered its militant support for the Arab people who are being murdered by U.S. troops in Iraq.²⁴

Similar low-level attacks were perpetrated without any direct connection to Iraq itself. There were attacks on U.S. embassies and consulates (e.g., Frankfurt, Berlin, Sydney, Dhaka, Mexico City, Istanbul, Kuala Lumpur); U.S. military personnel and facilities (e.g., Jeddah, Ankara, and Izmir); U.S. Government facilities (e.g., Voice of America transmitter compound in the Philippines); U.S. businesses (e.g., Ford, Coca-Cola, American Airlines, American Express, Holiday Inn, Citibank, Chase Manhattan Bank, and Kentucky Fried Chicken); and other U.S. targets (e.g., Mormon churches in Latin America, U.S.-Turkey Association, and the American School in Karachi).²⁵

Fortunately, the professional quality of the anti-American attacks connected with the Gulf War was largely primitive. The low-level terrorist operations demonstrated during Operation Desert Storm do not, however, provide any guarantees that future incidents will not be more costly in terms of human life and property. The past two decades provide ample evidence of the sophistication and deadly power of some groups, such as SL, PFLP-GC, and the RAF. The professional execution of a U.S. serviceman on March 2, 1991 in Greece by the 17 November group is a recent example.²⁶

Case Studies: Subnational and State-Sponsored Terrorism

The first two parts of this chapter provided an overview of terrorist actions. This section focuses on two case studies, which provide insights into how terrorism functions.

Single-Issue Political Extremism: Terrorism by Animal-Rights Extremists²⁷

One source of terrorist acts is the single-issue political group. While only a small fraction of such groups engage in any illegal acts, in the United States, sabotage and other violent acts have been committed in the name of diverse causes, including opposition to abortion, animal rights, anger at the

²³See, for example, JPRS Reports for 1990; cf. footnote 14. re, e, for instance, JPRS Reports for 1991.

²⁵Ibid.

²⁶BRI, *Special Report on Greece*, Apr. 4, 1991.

²⁷This section borrows heavily from an edited version of an as yet unpublished Conference Report on 'Animal Rights and Terrorism: Threats and Responses' held in Geneva, Switzerland, on May 9, 1991. Participants included OTA staff and a consultant and academic and operational experts in various aspects of terrorism from several nations. Although the Report reflects the Geneva deliberations, it does not constitute a consensus of the participants' views.

Internal Revenue Service, and environmental grievances. The incidence of terrorism as a whole has been quite low over the past decade, so that acts by single-issue groups now account for a significant fraction of domestic terrorism.

Differing from both traditional leftwing terrorists (e.g., the Baader-Meinhof Gang) and rightwing terrorists (e.g., the Aryan Nations) with their commitments to major political change, single-issue terrorists confine themselves to political struggle in one narrow area of focus. Single-issue terrorist groups are often less structured and organized than broadly ideological groups. Further, members are often mainstream individuals who, in other respects, do not differ radically from the average citizen. Often, some care is taken not to target people in terrorist actions. However, some of these groups occasionally do engage in assassination attempts or threats.

An example of single-issue terrorism is that related to animal-rights issues.²⁸ Various terrorist and criminal acts have been carried out under the banner of the Animal Liberation Front (ALF).²⁹ The actual degree of coordination of such activities is not clear, but attacks claimed by the ALF have occurred in the United Kingdom, the United States, and other countries.³⁰ The ALF opposes the use of animals in medical and scientific research, including psychological and surgical experimentation on living animals. It also generally opposes other uses of animals, such as for testing new drugs and cosmetics, for instructional purposes (especially in biology classes and in medical school), and for food, clothing, sports, circuses, and pets. To achieve their goals, ALF attacks have been made against a variety of targets ranging from medical and scientific research laboratories to butcher shops and furriers. Its tactics include theft of research animals, destruction of

research equipment, vandalism, and physical intimidation of researchers and their families.

These acts have had a significant effect on biomedical research, slowing work in a number of areas.³¹

Government officials have become increasingly concerned about the activities of animal-rights groups.³² Not only do law enforcement authorities attentive to threats to life and property, but they have labeled some of the acts of animal-rights extremists as terrorist. In 1988, the FBI included the ALF on its list of active domestic terrorist organizations. The FBI now lists the ALF as one of the 10 most dangerous terrorist organizations.

The Concept of Animal Rights-Concern for the welfare of animals goes back at least to the 19th century and has as its goal the protection of animals from mistreatment by people. Today, this broad-based movement continues among individuals and groups who are appalled by ill treatment of animals in any context. In fact, most people in the United States would probably agree with the proposition that humans have amoral responsibility not to cause needless suffering among other species.

Groups committed to such goals are commonly known as animal-welfare organizations. They act within democratic norms, using legal methods to bring public attention to barbaric acts against animals. Animal-welfare organizations have been at least in part responsible for legislation providing penalties for animal abusers and in setting norms for the treatment of animals in research.³³ They have pointed out abuses in research and have urged the discontinuation of the use of animals in testing programs for new drugs and cosmetics. In some cases, substitute techniques, avoiding the use of animals, have been developed and employed as a

²⁸In addition to animal-rights terrorists, other single-issue political terrorists are active. For a brief overview see FBI, *Terrorism in the United States* 1989, op. cit., footnote 19 pp. 18-20. For bibliographical material see *Terrorism: An International Resource File Indexes* (1970-79, 1980-85, 1986, 1987, 1988, 1989, 1990), op. cit., footnote 19. For a recent treatment, see for instance, David T. Hardy, *America's New Extremists: What You Need To Know About the Animal Rights Movement* (Washington, DC: Washington Legal Foundation 1990), from which some of the information contained in this section is taken.

²⁹See, for example, FBI, *Terrorism in the United States*, op. cit., footnote 19, pp. 18-20; Terry Mulgannon, "The Animal Liberation Front," *TVI Journal*, vol. 5, No. 4 (1985), pp. 39-43.

³⁰In the United Kingdom, a handbook for conducting terrorist acts has been distributed by a group claiming to be the ALF.

³¹A study on the use of animals in medical research was published by the office of Technology Assessment in 1986—U.S. Congress, Office Of Technology Assessment, *Alternatives to Animal Use in Research, Testing, and Education*, OTA-BA-273 (Washington DC: U.S. Government Printing Office, February 1986).

³²See, for instance, Henry Cohen, "Brief Summaries of Federal Animal Protection Statutes," *CRS Report to Congress* (July 29, 1988).

³³For example, Public Laws 99-158 and 99-198.

result. They have also opposed the use of animals for teaching purposes and, in fact, such use has been decreased, also in favor of alternative methods, many of them computer-based.

In recent years, some animal-rights organizations have taken extreme positions relative to those of the traditional animal-welfare groups. Some believe that animals are on an equal moral plane with humans. Within this more extreme movement, small groups of individuals have determined that violence is justified in order to further the goals related to perceived rights of animals. These groups often refer to their actions as having been carried out by the Animal Liberation Front.

Animal-Welfare Organizations and Animal-Rights Organizations—Established, traditional animal-welfare organizations include the Royal Society for the Prevention of Cruelty to Animals in Great Britain, the Society for the Protection of Animals in France, the Humane Society of the United States, and the American Society for the Prevention of Cruelty to Animals in the United States. Many countries have similar groups.

The past 30 years have seen the emergence of more extreme groups, a small fraction of whose members engage in terrorist tactics. Among groups of activists involved in antihunt protests in Great Britain in the 1960s, one faction branched out into activism against researchers. The first animal-liberation front was formed in 1972 under the name Band of Mercy. Ronnie Lee, its founder, was convicted of violent acts against research facilities, went to jail, and was released in 1976. His group reformed as the ALF, and continued violent efforts using arson and other means to try to remove animals from research facilities.³⁴

A U.S. chapter of the ALF is believed to have been organized in 1982.³⁵ By the mid- 1980s, the ALF had

established a presence internationally. Active ALF chapters are believed to exist now in 45 countries.

The ALF has no central organization, organized leadership, membership lists, central funds, or command structure. The ALF is a flag of convenience for anyone who wants to go out and perform direct action against any form of perceived animal abuse.

People for the Ethical Treatment of Animals (PETA),³⁶ formed in 1980, is the largest animal-rights organization in the United States. It has 350,000 members and an annual operating budget estimated at about \$8 million. PETA leaders are reported to have acted as intermediaries to the press for the ALF, including distributing a videotape of an ALF break-in.³⁷

The Physicians Committee for Responsible Medicine (PCRM) works closely with PETA. Begun in the mid- 1980s, it provides the support of health care professionals to the antivivisectionist cause, which opposes any use of animals for research. The views of PCRM appear, however, to have little support within the medical community.³⁸

Philosophical Underpinnings³⁹—**Animal-rights** extremists are most typically motivated by philosophical beliefs based on these ideas: 1) animal rights are on a par with human rights; and 2) animals have a right to physical liberty. Since animals should have much the same rights as human beings, they conclude that one should no more destroy an animal than a child. The co-founder and director of PETA, Ingrid Newkirk, was reported to have said, “Six million people died in concentration camps, but six billion broiler chickens will die this year in slaughterhouses.”⁴⁰

According to this line of thinking, animals should be protected from harm caused them by all human actions, ranging from a desire to consume animal products as food to the use of animals for experimentation in medical research.

³⁴See Hardy, op. cit., footnote 28, pp. 16-17.

³⁵See, for example, FBI, *Terrorism in the United States*, op. cit., footnote 19, pp. 18-20; Terry Mulgannon, “The Animal Liberation Front,” *TVI Journal*, vol. 5, No. 4 (1985), pp. 39-43.

³⁶For some of PETA’s material see, for example, *Animal Rights 101 Workbook* (no date of publication available) and *Becoming an Activist: PETA’s Guide to Animal Rights Organizing* (no date of publication available).

³⁷FBI, op. cit., footnote 19, p. 1 and *Nature*, April 13, 1989, p. 534.

³⁸See, as an example, American Medical Association, *Use of Animals in Biomedical Research: Challenge and Response*, *AMA White Paper* (1989).

³⁹See, for instance, Peter Singer (ed.), *In Defense of Animals* (Oxford and New York: Basil Blackwell, 1985) and Peter Singer, *Animal Liberation*, new ed. (New York: Random House, 1990).

⁴⁰*The Washington Post*, Nov. 13, 1983, p. 1.

Tactics—since the ALF originated in Great Britain, it is instructive to examine the tactics it has used there. In its formative period, the ALF engaged in arson and raids to achieve its objectives.⁴¹ In 1982, the first personal attacks with letter bombs occurred. First, these letter bombs were sent to political leaders and then to researchers. The acts were claimed by the Animal Rights Militia. There is good evidence that the ALF and the Animal Rights Militia are simply different parts of the same group.

The scale of direct action by the ALF escalated in the 1980s in Great Britain. First, there was a series of massed daylight raids in which up to 300 animal-rights activists would attack a research organization—often a pharmaceutical company. Demonstrators would tear down the wire fence, rush into the facility, grab animals and documents; by the time the police arrived 20 minutes later, they would be gone. From 1984 to 1986, there were about 10 or 12 of these daylight raids.

One section of the ALF went on to more serious terrorist activities, with car bombs first being used in 1985. The ALF started with crude explosives, but became more sophisticated. They were always placed under cars. Timed devices were often set to explode when the car was unoccupied, so most were apparently designed to blow the car up rather than kill the owners. The year 1985 was the peak of illegal activity but this included a large amount of minor activity, such as pouring glue into the locks of butcher shops, smashing windows, and setting off incendiary devices, rather than terrorism.⁴²

According to one estimate, between 1985 and early 1991, there were 182 incendiary or explosive devices planted in Great Britain by animal-rights activists.⁴³ This number accounted for approximately 50 percent of all explosive devices planted in all of Great Britain, making it numerically a larger problem in Great Britain (i.e., the United Kingdom excluding Northern Ireland) than incidents attributed to the Provisional Irish Republican Army (PIRA). However, the majority of these devices were far less sophisticated and far less dangerous than the PIRA devices.

More recently, there has been an escalation in tactics. The use of incendiary devices by the animal-rights terrorists, which in the past were used against animal-research facilities but more frequently against shops, came to a head in late 1989. There was an attack on a department store in Guinness called Dingel's. The goal of this sort of attack was apparently to set off the sprinkler system, ruining a large quantity of merchandise. The sprinkler system in Dingel's was not operational, however. Not only did the entire store burn down, but the rest of the city block, as well. The shop has not yet been rebuilt, but the owner, the House of Fraser, has estimated that the loss was 183 million pounds. In financial terms this has probably been Great Britain's biggest act of terrorism.

Also in 1989 in Great Britain, the first uses of high explosives by animal-rights terrorists took place. These acts appear to have been perpetrated by a small group, which had obtained a high explosive used both in military operations and in commercial applications, such as quarries. First it was used against the staff restaurant at Bristol University, where a 5-pound bomb was set off about midnight, wrecking about two floors of the building. More recently in 1990, the same explosive was used presumably by the same group in two car bombs. In one case, a passing infant was severely wounded.

According to *Science* magazine,⁴⁴ the ALF was responsible for 44 bombings and 422 violent incidents in the United Kingdom during 1989; 16 bombings and 338 attacks in 1988; and 33 bombings and 708 attacks in 1987.

Since 1982, the ALF in the United States has also been involved in illegal activities in many ways similar to those of its British counterpart resulting in its eventual inclusion on the FBI's list of terrorist organizations. In 1982 and 1983, it removed laboratory animals from Howard University Medical School in Washington, DC, and other research institutions in the area. In later years, it conducted similar raids elsewhere.

The ALF expanded its activities by vandalizing laboratories and ruining medical research records. By means of arson, a veterinary diagnostic center at

⁴¹See Hardy, *op. cit.*, footnote 28, PP. 16-24

⁴²*Ibid.*

⁴³*Ibid.*

⁴⁴*Science*, June 22, 1990.

the University of California at Davis was severely damaged. In 1989, it entered the University of Arizona's Pharmacy and Microbiology Building and another building where the Office for Animal Resources was located. It set fires and stole more than 1,000 research animals in the Arizona raid. The ALF has conducted many other raids on facilities in which animals were used for medical research. The effect of such raids and arson was to set back scientific research on cancer, heart disease, and cystic fibrosis.

A particularly well-known attack occurred in 1990, when the ALF raided the laboratories of Dr. John Orem, at Texas Tech University in Lubbock, TX. Dr. Orem had been conducting research on Sudden Infant Death Syndrome (SIDS), known commonly as "crib death." The terrorists stole animals used in experimentation, destroyed laboratory records, and caused 50,000 dollars' worth of equipment damage. Dr. Orem received death threats later.

Another target of animal-rights extremists has been the U.S. Surgical Corp., which is the world's largest producer of surgical staples. These staples are essential in major operations, reducing the likelihood of surgical failure. In 1988, an animal-rights activist attempted to assassinate Leon C. Hirsch, the president of the corporation, but the effort did not succeed.

The ALF has raided meat companies and damaged butcher shops. It vandalized the cars and homes of employees of the San Diego Zoo. On several American university campuses, it has threatened scientists engaged in animal research with death or physical injury. In a few cases, animal-rights extremists planted car bombs in cars owned by medical researchers using animals in laboratory experiments. Some extremists claimed that these bombs were designed as a warning and not as killing devices.

The ALF has caused millions of dollars' worth of damage in the United States. During 1989, animal-rights extremists were responsible for numerous incidents of break-ins, thefts, arson, vandalism, and bomb threats in the United States. In addition to the direct financial cost caused by this violence, there are the additional costs borne by hospitals and

research laboratories that are now required to provide enough security to deter or prevent terrorist acts. Animals in these places for scientific investigation are kept under costly 24-hour guard.

Groups identifying themselves as the ALF have engaged in such violent acts as attacking laboratories, furriers, butcher shops, and other animal-related facilities not only in the United States but also in other countries, such as Canada, Australia, New Zealand, the Netherlands, Germany, France, and South Africa.

Impact on Society—These attacks have had a significant impact on society, most importantly, on scientific progress in biomedical research. Following the ALF's position that animals should never be used for research, terrorists have delayed research, destroyed its results, caused the diversion of research funds to security measures, and caused the cancellation of at least one research program. Bills to stem lab break-ins have been introduced in Congress.

Biomedical research scientist nearly unanimously consider animals to be vital in experimentation. But animal-rights groups contend that scientists can find alternative means to conduct any useful experiments. Such objections usually refer to cellular experimentation and computer simulations as such alternates. In reply, scientists assert that, while this may be true in part, all experiments using animals cannot be substituted by these alternate means. Cellular work has, in fact, increased in recent years with the goal of avoiding the use of animals where possible, but such techniques cannot adequately imitate the biological activity of an entire organism.⁴⁵ Further, computer simulations need experimental vetification before they can be trusted, especially when human lives depend on their reliability.

State-Sponsored Terrorism: A Case Study of Syria's Role

It is important to assess the nature of "state-sponsored" terrorism in contradistinction to other forms of political violence ranging from single-issue political extremism to revolutionary subnational activities. State-sponsored terrorism fits under the

⁴⁵See, for example, U.S. Congress, Office of Technology Assessment, *op. cit.*, footnote 30.

... isolated systems give isolated results that may bear little relation to results obtained from the integrated systems of whole animals.

larger heading of “low-intensity conflict.”% That term has been broadly, if vaguely, applied to embrace forms of warfare below the formal confrontation of national armies on battlefields. It is a category of conflict that has become more prominent in an era of weapons of mass destruction, in which the penalties of escalated hostilities loom prohibitively. Law-intensity conflict permits avoidance of those penalties. And state-sponsored terrorism recommends itself especially as a means of waging clandestine, undeclared war.

State sponsorship refers to the direct or indirect instigation and support by an established government of surrogate forces, in their exercise of psychological or physical violence, for purposes of coercion and intimidation with the goal of advancing that government’s political or strategic objectives. What distinguishes state-sponsored terrorism from its other forms is the extent to which the forces carrying out the violence further the policy of an established government beyond the latter’s boundaries. A terrorist group thus co-opted can be used to disrupt a target country’s political stability, economic fabric, and external relations in ways which direct military confrontation could not achieve.

The compelling benefit that this long-range warfare extends to the sponsoring government, beyond a general modesty of operational investments, is the keeping of its own role hidden or the subject of “plausible denial.” Generally, however, if a government is to be held responsible internationally for the actions of a terrorist organization, its assistance to that group has to be measured in concrete terms (e.g., direction of activities, supply of funding and armaments, permission to use national territory, and assets for training and intelligence fictions). It is the role of accomplice or accessory to the crime that constitutes concrete and convincing evidence of sponsorship of terrorism.⁴⁶

Sponsorship becomes more direct when a government uses its own national military to arm and train a terrorist movement. When such a level of depend-

ency is reached between a government and a terrorist organization, the government can begin to fund directly or contract out certain operations. It can regulate the internal politics or development of a group by conditioning their funding and supply of armaments on acceptance of specified tasks.⁴⁸

On occasion, two or more governments have been involved in a particular terrorist operation. This situation derives from the nature of the international terrorist network, involving links between many governments. Cases in which a consortium of governments are involved in the conceptual and planning stages of an operation appear to be on the increase.

The case of Syria as a state sponsor of terrorism is discussed here particularly because of its important past role on the terrorist scene and the confusion about its new position in the post-Gulf Crisis period. Despite Syria’s participation in the international coalition arrayed against Iraq, most experts feel it is unlikely that Syria will relinquish its terrorist weapon at home or abroad in the coming months and years. The assassination of Dany Chamoun, a Lebanese Christian leader, and his entire family on December 21, 1990, widely thought to have been accomplished by Syrian agents, is another indication that Syrian-sponsored terrorism may be ongoing.

Syria has been actively sponsoring terrorist groups and operations as an adjunct to its foreign policy in the Middle East and in the larger international arena. Over the years, Syria has itself played a role in terrorist operations, particularly against Israel, the United States, and moderate Arab regimes. Many of these operations have been also related to Syria’s long-standing interest in Lebanon. To oversee these operations, Syria has setup centers in Syria itself, in Lebanon’s Beka’a Valley (which is under Syrian control), and in the major capitals of Europe, where they are staffed by Ba’ath party members and Syrian security personnel who recruit additional manpower when needed from among Syrian students at universities abroad. This latter

⁴⁶See, for example, J. Bowyer and J. Bell, *The Myth of the Guerrilla: Revolutionary Theory and Malpractice* (New York: Knopf, 1971); Richard L. Clutterbuck, *Terrorism and Guerrilla Warfare* (London and New York: Routledge, 1989); and Walter Laqueur, *Guerrilla: Historical and Critical Study* (Boston, MA: Little, Brown & Co., 1976).

⁴⁷See, for instance, Ray S. Cline and Yonah Alexander, *Terrorism as State-Sponsored Covert Warfare* (Fairfax, V: HERO Books, 1986).

⁴⁸See, for example, *Terrorist Group Profiles*, op. cit., footnote 3, pp. 29-30.

network is under the authority of the Syrian embassies, enabling those engaged in terrorist activities to pass as diplomats and to use the diplomatic pouch for the transfer of arms.⁴⁹

Holding Palestine to be an integral part of territory taken from it unlawfully, Syria has a direct emotional involvement in Palestinian terrorist activity. Professing to be an adamant guardian of the legitimate rights of the Palestinians, Syria was the first Arab state bordering Israel to offer Palestinian terrorists a sanctuary for launching operations against that nation. In addition to providing the PLO and its terrorist elements with training facilities, expertise, equipment, and personnel, Syria also has backed its own organizations within the PLO, especially As-Saiqa.

Over the past 40 years, Syria has been involved in coups d'état, political assassinations, and mass murder of civilians. Several examples illustrate the varieties of President Assad's tradition of terrorism:⁵⁰

- Abed Elohab Albachri, exiled leader of the Muslim Brotherhood, was murdered in Amman, Jordan, on July 30, 1980. Two Syrian nationals were charged with the murder and were executed in Jordan.
- As an expression of opposition to the May 17, 1983, Israel-Lebanon Accord and the presence of multinational peacekeeping forces in Lebanon, Syria at least acquiesced in support for attacks on American diplomatic and military targets.⁵¹
- Syria was involved in attempted bombings of El Al aircraft in London and Spain (1986).

Training-Syrian provision of military training to terrorist groups includes:

- Training camps and facilities.
 - Arms transfers to terrorist groups.
 - Sponsorship of mercenary terrorist groups.
- Syria has collaborated with and provided logistical and other support to terrorist groups that

have an independent existence but followed general guidelines formulated by Syrian intelligence with regard to their targets. Among these groups are ANO, PFLP-GC, and PFLP.

Drug Trafficking and Narcoterrorism—According to the U.S. State Department:

Syria is a transit point for illicit drugs as well as a refiner of heroin. Lebanese-produced hashish and heroin, destined for Europe and the U. S., transit Syria. Morphine base and opium from Asia enter Syria via Turkey en route to processing labs in the Beka'a Valley in Lebanon . . . Much of Syria's trafficking activity stems from Lebanon's Beka'a Valley, where Syria maintains a military presence but fails to enforce antinarcotics controls. Of greatest concern are numerous credible reports of the involvement of some Syrian officers and soldiers in facilitating the Beka'a drug trade through bribes and other corruption . . .

The [U.S. Government] has reliable reports that individual Syrian soldiers and other officials stationed in Lebanon's Beka'a Valley, as well as higher-level Syrian military officials are involved in the drug trade. While this is in clear violation of Syrian and Lebanese law, there is no evidence that any of these military officers or soldiers has been prosecuted for this activity.⁵²

Further, according to an interagency report on the supply of illegal drugs in the United States:

Most of the warring factions in the country [Lebanon], as well as some known terrorist organizations, are involved in one or more aspects of the illicit narcotics trade. Sixty-five percent of the country is controlled by Syria. Periodic reporting suggests Syrian Army control over drug production in the Beka'a Valley.⁵³

There have also been press reports that many of the terrorist groups sponsored by Syria in Lebanon or headquartered in Damascus derive much of their income from drug trafficking.

Summary and Conclusions—In spite of Syria's record in terrorism, can we expect anew opportunity

⁴⁹See, for example, Yonah Alexander, "The Politics of Terror" (Special Report-Syria), *The World & Z* (February 1987), pp. 16-25; and U.S. Department of State, "Syrian Support for International Terrorism: 1983-86" (December 1986), Special Report No. 157.

⁵⁰The examples are drawn from the available chronologies on terrorism and press reports.

⁵¹U.S. Government, Department of Defense, *Report of the DOD Commission on Beirut International Airport Terrorist Act (Oct. 23, 1983)* (Washington, DC: U.S. Government Printing Office, 1984), p. 122.

⁵²U.S. Department of State, "International Narcotics Control Strategy Report" (Washington, DC: March, 1991).

⁵³U.S. Government, National Narcotics Intelligence Consumer's Committee, "The NNICC Report: 1990-The Supply of Illicit Drugs to the United States" (Washington DC: June 1991).

in the post-Gulf War period for U.S. -Syrian cooperation in combating terrorism? The question remains open. Indeed, Syria could become an invaluable ally in combating terrorism, having been a prime sponsor of it in the past, and having a strong influence over many Middle East terrorist organizations. Syria was an ally of the United States in the Gulf Crisis, and a radical change in its policy cannot be ruled out.

The Future Outlook

Future Threat Assessment

The allied victory in the Middle East drastically changed the political and military balance of power in the region. At the same time, it affected the constellation of power within and among Middle Eastern terrorist groups. For instance, the failure of secular extremists to deliver their promised attacks against members of the international coalition, Israel, and other targets has resulted in internal upheaval within these groups.

The Islamic-oriented groups may ultimately emerge as preeminent in the "armed struggle" to regain possession of Palestine. A case in point is the Islamic Resistance Movement (Hamas), whose publicized platform asserts, "it is the personal religious duty (Fard' Ayn) of each individual Muslim to carry out this Jihad in order to bring redemption to the land."⁵⁴ The importance of the Hamas lies not only in its uncompromising message but in its growing popularity in the West Bank and Gaza as well as in Israel itself.

In addition to the Hamas, other fundamentalist extremist groups, such as Hizbollah, will continue to pose threats to regional stability. Not only does Hizbollah have its own agenda in Lebanon, including establishing a Shi'a Islamic State, but it also serves as a surrogate of Iran committed to eliminating non-Islamic influences and force Western interests out of the region.

Although Iranian sponsorship of terrorism dropped to 10 incidents in 1990 from 24 in 1989, and during the Gulf Crisis the number of incidents were small in number,⁵⁵ Iran continues to maintain ties

with a wide variety of Moslem extremists in the region and beyond. To be sure, Iran may cooperate with the international community in regard to some specific cases, such as the release of the Western hostages (including Americans) in Lebanon, provided it obtains political or economic rewards.⁵⁶ Yet Tehran's utilization of terrorism, particularly against its domestic opponents and its support of Moslem and even of secular groups, such as PFLP-GC, is expected to remain intact.

Middle Eastern terrorists, whether secular or Moslem, will probably continue to strike not only in the region but also elsewhere in the world. Following the pattern established in the 1970s and 1980s, in the post-Gulf War period these groups will probably attempt to carry out indiscriminate attacks resulting in mass casualties. American interests, both civilian and military, will likely be affected, and the location of such attacks will not be confined to the Middle East.

Neither Middle East national groups nor regional states have abandoned the use of terrorism as a cost-effective tool. The threat has not diminished with the crushing defeat of Iraq although, for tactical reasons, revenge may take some time. As Ambassador Morns Busby, then coordinator for counterterrorism at the U.S. Department of State, recently warned: "Every war in the Middle East for the last three decades has had an aftermath of terrorism."⁵⁷

The compounded danger is that Middle East groups-whether radical fundamentalists or secular-will make common cause with indigenous movements overseas to wage war against the West, particularly the United States. While joint operations are not likely, proxy operations, operational support, and logistical assistance are well within the realm of possibility.

Greece's 17 November is such a potential partner to Middle East groups.⁵⁸ Responding to Operation Desert Storm, 17 November carried out eight attacks, including two bombings against U.S. firms, a rocket attack on a U.S. business, and the assassination of a U.S. Air Force officer on March 12, 1991.

⁵⁴Cited in Raphael Israeli, "The Charter of Allah: The Platform of the Islamic Resistance Movement (Hamas)," in Alexander and Foxman, *The Annual on Terrorism, 1988-1989*, op. cit., footnote 2, p. 104.

⁵⁵*Patterns of Global Terrorism: 1990*, op. cit., footnote 1, p. 33.

⁵⁶See, for example, *The Washington Post*, June 11, 1991.

⁵⁷Quoted in *The Guardian* (London), Mar. 2, 1991.

⁵⁸See, for example, Alexander and Pluchinsky, *European Terrorism Today and Tomorrow*, Op. cit., footnote 4, ch. 3.

Because no member of the 17 November group has ever been arrested during its 16-year history, little is known about its internal dynamics, composition, leadership, decisionmaking process, weapons inventory, or organizational structure. Its air of perceived invincibility creates, therefore, an operational audacity that could make this group even more dangerous and unpredictable in terms of future linkages and attacks.

The 17 November group is not the only European terrorist organization that may evolve from a minor threat to a major security problem for U.S. interests in Europe. The RAF is another potential danger, considering its history of anti-American operations.⁵⁹ Since its formation in the early 1970s, the RAF has been responsible for the deaths of more Americans than any other single European movement. During the Gulf War, it strafed the U.S. Embassy in Bonn with over 250 rounds from automatic weapons. With its infrastructure and operational capability intact, it can be expected that the RAF will pursue its “anti-imperialist” goals in the future with greater vigor. In recent attacks, its technical ability, involving difficult split-second detonations of explosives, has been manifest.

A third group is Dev Sol or ‘Revolutionary Left’ in Turkey.⁶⁰ A Marxist-Leninist group committed to establishing a proletarian dictatorship in Turkey, it was active in the 1970s, along with some 60 other leftwing and rightwing movements. These perpetrators were involved in over 170 anti-American operations, including the assassination of nine U.S. nationals. Although Dev Sol was neutralized by the Turkish military during most of the 1980s, it reemerged once again several years ago. Currently consisting of some 100 to 150 hardcore members operating in cells called “armed revolutionary units,” Dev Sol carried out 24 low-level bombings against U.S. military, diplomatic, and business interests in Turkey, assassinated two American businessmen, and attempted the murder of a U.S. Air Force officer during the Gulf War. In claiming responsibility for the first assassination in the wake of the war of a U.S. Department of Defense civilian

employee, Dev Sol warned: “We reject every agreement that fortifies the dependency on imperialism. We oppose every aspect of the economic, political, and military presence in our country.”⁶¹ This message only reinforces Dev Sol’s political determination to remain an active member of the anti-American terrorist network.

Another security concern in the European context is the removal of frontier controls under the 1992 integration program. The elimination of traditional border checks will facilitate the movement of terrorists and complicate the capability of the European security forces to discharge their responsibilities. One question is whether the European intelligence services can be integrated without compromising sources of information and sensitive collection methods. These issues have taken on greater significance as a result of the Gulf Crisis. In its aftermath, the problem of a borderless Europe will pose a more acute challenge not only to the region but also to U.S. security interests.

Finally, other threats elsewhere will face the United States in the coming months and years. Regardless of the consequences of the Middle East war, terrorist dangers remain in Asia and Latin America, and single-issue terrorists will likely continue to operate in many Western nations. A major threat exists in the Philippines where a communist insurgency is ongoing. Domestic and political violence in India, the sectarian insurgency in Sri Lanka, and ultraleftist extremists in Japan might also affect American interests.⁶² In Latin America, where some two-thirds of all anti-American international terrorist attacks took place and where U.S. targets were the principal foreign victims of indigenous groups in 1990,⁶³ violence against U.S. citizens and interests will continue unabated.

An added factor that will encourage anti-American terrorism in Latin America is narcoterrorism. It is a growing threat that combines drug criminals with political criminals. The deterioration of the situation in Colombia caused by the interna-

⁵⁹Ibid., ch. 2.

⁶⁰See, for instance, Henry W. Degenhardt (ed.), *Revolutionary and Dissident Movements* (Essex, U.K.: Longman, 1988), p. 377.

⁶¹Cited in remarks by Dennis Pluchinsky in a speech on terrorism to a conference sponsored by the American Society of Industrial Security, Apr. 2, 1991, Washington D.C.

⁶²*Patterns of Global Terrorism: 1990*, op. cit., footnote 1, p. 18.

⁶³Ibid., pp. 18-25.

tional drug cartel over the past several years is a dramatic illustration of narcoterrorism. Indeed, terrorist groups worldwide are quickly learning that international drug trafficking offers a high-profit, low-risk way to finance their activities. These activities have become so lucrative that the drug trade has become the second largest source of terrorist funding, after state sponsorship. The United States, a leader in combating this danger, will inevitably be a prime target of these narcoterrorists.

Future Strategic and Technological Challenges⁶⁴

Despite the latest favorable trends in the international political and military situations, as exemplified by the dramatic events in Eastern Europe and the discrediting of communism in most countries, the foreseeable environment poses three primary concerns for U.S. policy and defense strategy. Future threats—often localized in the Third World but containing regional and global security implications—will include terrorism, insurgency and revolution (often with anti-American overtones), and international drug trafficking.

Several factors make Third World countries especially vulnerable to these forms of low-intensity conflict:

- Soviet retrenchment in some regions (e.g., Middle East) and the withdrawal of direct and indirect Soviet bloc support to various terrorist groups (e.g., the PLO). This retrenchment means that the Soviet bloc will have less control over this area and, consequently, individual terrorist groups will be less disciplined and more prone to violent acts.
- The continued utilization of terrorism by some states.
- The continued existence of repressive authoritarian regimes (e.g., right and left ideologically) in Latin America.
- Pronounced ethnic fragmentation under pressure from cultural diversity and economic adversity (e.g., Africa).
- Regional conflicts that are deeply rooted and defy efforts at quick solutions (e.g., South Asia).

Future technical threats must be anticipated in order to maintain a proactive R&D policy. If

currently popular explosives become too difficult to bring aboard aircraft, for example, terrorists may try different explosives or incendiaries. A frightening future prospect is the employment of weapons of mass destruction. Serious consideration should be given the possibility that subnational groups, with the direct or indirect support of some states, may turn to this tactic. It has been suggested, for example, that attempts to bring terrorism under control through national and international legislation and increased security and enforcement measures might, in fact, frustrate routine terrorist actions and spur more daring types of terrorism. Vulnerable mass targets, now available because of technological advances in contemporary society, are likely to become more attractive to terrorists.

Of course, weapons differ in terms of their characteristics and modes of actions.⁶⁵ Radiological, chemical, or biological weapons are more likely to be used than nuclear explosives. More specifically, there are no serious technological impediments to the utilization of chemical or biological agents (e.g., fluoroacetates, organophosphorous compounds, botulinum toxin). They are relatively easily obtainable, their delivery systems are manageable, and their dispersal techniques are efficient. In fact, terrorists desiring to make nerve gases themselves rather than obtain them directly from Libya, Iraq, or even the commercial market, can still find the formulas at some libraries despite attempts by some governments (e.g., Great Britain) to remove them from public access.

Once in possession of such information, a terrorist with some technical know-how could synthesize toxic chemical agents from raw materials or intermediates. In fact, many poisonous radioactive or chemical substances (e.g., Cobalt-60 or TEPP insecticides) are commercially available. They can either be bought or stolen. Covert and overt options for dispersing chemical agents are virtually limitless.

As in the case of chemical violence, biological terrorism—the use of living organisms to cause disease or death in human beings, animals, or

⁶⁴This section benefits from as yet unpublished proceedings of two conferences on "Terrorism and Technology: Threats and Responses." The first was organized by the Ministry of Science and Technology of Israel and the Israel Security Research Center and held in Tel Aviv on Aug. 8, 1990. The second gathering on the same topic was held in Geneva, Switzerland on May 8, 1991, under the auspices of the Institut Henry-Dunant of the International Committee of the Red Cross. OTA staff and a consultant participated in both conferences.

⁶⁵For sources on mass destruction threats see, for example, *Terrorism: An International Resource File, Bibliography* (1970-89), pp. 191-195.

plants—is technically possible. Many agents are relatively easy to acquire, cultivate, and disseminate.

Chemical and biological weapons, then, have many advantages for terrorists. These benefits include their low cost, the ease and speed of their production, and the fact that they can be developed by individuals without much advanced training. Weapon development requires only a minimum amount of tools and space, and equipment can be improvised or purchased without arousing suspicion. A more detailed discussion of biological weapons is presented in the following section of this chapter.

Since chemical and biological weapons could also be “weak” states’ nuclear substitute for weapons, their proliferation, particularly in the Third World, is a disturbing trend. Libya and Iraq have provided recent lessons of the challenges that will confront us in the post-Gulf War period, and as noted earlier, both sponsor terrorist groups. The great danger is that if one terrorist group succeeds in achieving its goals through the utilization of mass destruction weapons, then the temptations for other extremists to escalate their operations may become irresistible.

These eventualities force us to develop adequate strategic and technological responses if future terrorist challenges are to be minimized. Because future threats will be novel, the responses of both governmental and nongovernmental bodies must be as well.

PART II: TERRORISM AND BIOLOGICAL WEAPONS

Biological Weapons: Agents and Dissemination

Biological warfare agents include living microorganisms (bacteria, rickettsia, viruses, fungi) capable of entering the human body (e.g., by inhalation or ingestion), multiplying, and causing illness or death—some of these can produce epidemics. They also include toxins produced by microorganisms, plants, or animals; and chemicals that regulate biological functions. This last category of agents (e.g., hormones, sleep peptide) has normal physiological effects in low and moderate doses but pathological effects at high doses. Unlike living microorganisms, **toxins** and chemical regulators only affect people directly exposed to the agent—they cannot spread from person to person.

Introduction of a specific agent or the mixture of biological agents into a delivery system (aerosol generator, aircraft spray tank, missile, artillery shell, or bomb) constitutes a biological weapon. Human delivery (e.g., a saboteur carrying a container filled with bacteria or toxin to be used to contaminate food, water, or medications) can also be utilized.

Tactics, weapons, and choice of agents will differ, depending on whether biological agents are to be used for military or terrorist purposes. In the former case, the aim will usually be to disable enemy troops so that an action may be successfully carried out with the least possible difficulty for the attacker. A fatal scourge, while fitting the requirement, may not be necessary; it may even be seen as excessive. The weapons should disperse quickly, the geographical area of interest maybe relatively small, and the time to develop symptoms should be relatively short, perhaps a few hours. The attacker may also gain an advantage if the agent can be disseminated without detection-countermeasures then become harder to effect. Finally, the choice of agent should not be one that the enemy can defeat with a vaccine or treat rapidly with antidotes, antitoxins, or antibiotics.

In the case of terrorism, there is more latitude for the attacker. Civilian populations are less likely to be immunized or protected against biological attacks as military populations may be. Nor will there likely be a nearby supply of appropriate medication. Also, the time to develop symptoms need not be short and the attack does not have to be surreptitious (although if it is, any defensive reaction becomes more difficult). The purpose, after all, is to sow terror. For this same reason, the terrorists might wish to cause mass casualties, as they do in aircraft bombings, rather than simply to disable victims temporarily, as in the military case.

Entry Into the Target

Biological weapons are usually designed to allow the selected agent to enter the human body by the aerosol route. Once in the lung, it invades the bloodstream and lymphatic and, in the case of micro-organisms, initiates infection. Similarly, drinking or eating contaminated food or beverages leads to infection by entry of the agent through the mucous membrane of the intestinal tract. Toxins may be ingested or inhaled. Most chemical regulators require the inhalation route, and little is known about the effects of their ingestion.

Inactivation of Biological Agents by the Environment

Many biological agents, especially living organisms, may be rapidly inactivated by ultraviolet light or by specific climatic conditions. However, stabilizing compounds or environment-resistant microorganisms have been developed to prolong the useful half-life of weapon agents. Further, some toxins are quite resistant to moderate heat and ultraviolet light. Also, staging attacks at night would avoid the degrading effects of ultraviolet light. Nighttime is also frequently a period of temperature inversion (warm air below dense cooler air) of the surface atmosphere. Inversion can trap an aerosoled agent near the Earth's surface, increasing the inhalation exposure time and the concentration of aerosol inhaled by the target population.

Detection of an Attack

An aerosol attack and food/beverage/medication contamination are not normally detectable by the human senses (the agents are invisible, silent, odorless, and tasteless).

No reliable, sensitive, and specific system, whether based on mechanical, laser, electrical, or chemical detectors, is yet available to detect an aerosol attack in time to allow the target population to put on protective masks and clothing, and thus avoid inhalation and infection. This deficiency means that there is risk even from those agents that produce illnesses that can be successfully treated.

Similarly, there is no testing system in place to ensure against food/beverage/medication contamination. In some cases, attacks may be detected by finding delivery vehicles (bomblets, rockets, or bombs containing remnants of agent) or by intercepting aircraft with spray tanks, but such attacks could be planned for miles upwind of the target and go undetected.

Vulnerability of Human Target Populations

Both civilian and military populations are vulnerable to the effects of these weapons. To ensure complete protection against aerosol infection, it would be necessary for troops and civilians to constantly wear masks and protective hoods and suits. HEPA (high-efficiency particulate air) filter masks do exist that can protect against aerosols (Racal Corp., Frederick, MD). These require a

battery-driven motor to ensure adequate ventilation, since the masks are bulky and require fatiguing respiratory effort to draw air through their filter systems. Masks and suits do work and are practical for short periods of time (a few hours), especially for military personnel, although they may cause a drop in ability to function effectively. It is, however, not practical for a military or civilian population to spend 24 hours a day in protective masks or suits.

Differences Between Biological and Chemical Agents

Biological weapons are difficult to detect while the attack is occurring, and there may be a long period of time between an attack and the onset of clinical symptoms of illness. Chemical weapons, on the other hand, may produce a specific odor (cyanide-bitter almonds; phosgene-newly mown hay). Rapid chemical tests are available in the field. These weapons produce casualties rapidly, giving early warning to the unaffected members of the target population and allowing them to don protective masks and suits in time to prevent further casualties.

Biological weapons can be effective in such low concentrations that attempts to detect them reliably in aerosol form by laser methods or by rapid biochemical tests have, thus far, been unsuccessful.

Targets-Tactical and Strategic

In the military field, biological agents may be used in tactical weapons to inflict casualties on a specific site (e.g., an airfield, aircraft carrier, missile silo, the Pentagon, the White House, the Capitol, etc.), or as a strategic weapon of mass destruction, the aim being to produce large numbers of casualties rapidly (e.g., among the U.S. and allied forces of Desert Shield, or the civilian population of a large U.S. city).

Attacks on these types of targets with biological weapons were probably possible as far back as the late 1960s (based on research done within the U.S. military offensive biological weapons program). Computer-modeled scenarios have pointed to the effectiveness of biological attacks on localized targets or large civilian populations. Livestock and plants are also vulnerable to attack. The purpose of the latter type of targeting would be to interfere with food production and damage the U.S. economy.

Possible Use by Terrorists-Availability of Technology

There has been, as yet, no major case of a terrorist attack with biological weapons. Nevertheless, terrorists have not balked at mass killing, so this possible consequence of the use of biological weapons cannot be considered to have been the principal deterrent to their use in a major attack. Such weapons may pose a risk to their users, but this can be overcome, at least to a degree, by the use of protective clothing and masks, or, in some cases, by vaccines. An advantage for the terrorists is that, in a well-planned and well-executed attack, there is less likelihood of apprehension than in case where more conventional weapons are used—they may be thousands of miles away when the first casualties occur. Such attacks also may leave no signature unless the participant terrorist group or its sponsor claims credit. It is possible that an outlaw state could utilize terrorists to deliver biological agents at a distant site.

Biological agents manufactured in a terrorist state might also be stockpiled in the United States or Europe by terrorists. They could be sent in small amounts in valises, parcels, or trunks and, over a period of months, stockpiled in major U.S. cities for later use. Since it is impossible, at present, to stop the arrival of relatively large amounts of drugs in the United States, it would similarly be impossible to prevent the arrival of much smaller quantities of living micro-organisms or toxins. Such shipments could even enter through normal shipping or airfreight routes. Alternatively, seed cultures could be smuggled into North America and the agents mass produced in clandestine laboratories in the United States or Canada.

The technical requirements for culturing micro-organisms or producing toxins for use in bioweapons are not particularly high. Most estimates are that second-year or third-year medical or microbiology students would have enough laboratory experience to prepare an agent with minimal danger to themselves. Further, some states that are suspected or known to have bioweapons programs also are known to have sponsored terrorist groups. While this does not mean that the technology for

producing bioweapons will be transferred by such states to a surrogate group, the possibility of such technology transfer, either witting or not, cannot be excluded. U.S. authorities must consider this possibility as a matter of prudent planning.

Possible Agents for Terrorist Bioweapons

Some specific biological agents that are considered most likely to be produced by terrorists are listed and briefly discussed below.

Bacillus anthracis(anthrax)-Large numbers of organisms are required to cause the disease. If a diagnosis of aerosol exposure to *B. anthracis* is made prior to the onset of symptoms (i.e., within 48 hours of exposure) high-dosage penicillin therapy may reduce mortality, which is otherwise very high.

Use of Reynier or Anderson air samplers, containing bacterial culture plates, would allow detection of an attack prior to the onset of clinical illness in those exposed. This relatively crude, but sensitive and specific system, was used during the U.S. offensive weapons program (canceled about 20 years ago) to quantify the concentration of organisms used in simulated aerosol attacks. A diagnosis of respiratory anthrax can also be made rapidly from a blood culture and a blood smear or a fine needle aspirate of a swollen node (i.e., culture and Gram-stained smear).

As with other micro-organisms, there is a risk of lethal infection for those working with *B. anthracis* from accidental release of the agent in aerosol form during preparation for use in weapons. Immunization against anthrax (as well as the use of protective masks and clothing) can prevent terrorist casualties during the manufacture and delivery process.⁶⁶

Francisella tularensis-This bacterium is highly infectious in aerosol form. The onset of illness is more rapid when a larger number of organisms is inhaled. The severity of the illness and the frequency of pneumonia produced are also dose-dependent. Far fewer organisms are needed to cause onset of symptoms than for anthrax. Serious pleuropulmonary tularemia has a mortality rate of up to 30 percent without therapy, but this can be reduced to a few

@*B. anthracis* is the agent that caused a large outbreak of fatal anthrax in Sverdlovsk, USSR in April 1979. U.S. intelligence believes that there were over 1,000 deaths and that the epidemic resulted from the accidental release of a large number of *B. anthracis* spores from a Soviet bioweapon production/storage facility. The Soviets continue to claim that the outbreak was the result of eating infected meat. They state that only 64 deaths occurred. The controversy over the nature of the epidemic continues.

percent by antibiotic treatment. The drugs of choice for therapy are streptomycin or gentamicin. Partial protection prior to exposure maybe achieved by use of a live attenuated tularemia vaccine.

Detection of exposure prior to illness or pneumonia onset is possible, but such equipment is currently not available for field use. Rapid diagnosis of mass casualties could be improved by developing better techniques (i.e., DNA probes with or without amplification of the target material by the polymerase chain reaction). Work on such systems is in progress.

Yersinia pestis (Plague)-Aerosol exposure may cause plague pneumonia. As with anthrax, large doses are usually required to cause disease.

Early detection of *Y. pestis* in clinical samples is now possible using a new *Y. pestis*-specific DNA probe. Test sensitivity could be increased by use of the polymerase chain reaction (PCR) to amplify the genetic material present. Use of streptomycin or doxycycline can reduce mortality if started before or at the onset of clinical symptoms.

Shigella flexneri-This organism or a related species could be used to contaminate water or food supplies of civilian populations. Military water and food supplies are usually safeguarded and are difficult to reach.

S. flexneri causes a wide spectrum of illness ranging from mild watery diarrhea without fever, to severe dysentery. *S. flexneri* and other shigella species are an attractive choice for use in contaminating food and water supplies, since only a small number of organisms are required to cause infection. *S. dysenteriae* (Shiga bacillus) is capable of causing extensive epidemic disease. This organism caused an epidemic in Central America in 1969 involving 500,000 people and had an unusually high mortality rate. With moderate infectious doses, shigellosis (dysentery) is a self-limited disease with a limited mortality. Doxycycline prophylaxis has been shown to be effective against this organism in field trials in military units. An oral vaccine for shigella species is under development. Several options exist for treatment, among them ampicillin and sulfamethoxide. Quinolone (e.g., ciprofloxacin) antibiotics are effective against shigella dysentery and also have activity against dysentery produced by *Campylobacter jejuni* and *Salmonella* infections. However, they may have negative side effects for children and early

adolescents. The broad activity of the quinolones against the major causes of bacterial dysentery allows for rapid institution of therapy without the need to wait for culture results.

Salmonella species-*Salmonella* may be used to contaminate food, water and other beverages. Large numbers of organisms (10^6 to 10^9) must be ingested to produce illness, so contamination must be massive. *Salmonella typhi* causes typhoid fever. The incubation period after ingestion varies with the dose (typical numbers: 10^3 organisms-9 days, and 10^9 organisms—5 days; the range can be extended, depending on the state of the host's defenses). Therapy with, for example, chloramphenicol, amoxicillin, or ciprofloxacin usually leads to resolution of fever and other symptoms within several days. *Salmonella* organisms are not ideal agents for use by terrorists because they require a large ingested dose to produce disease, and because effective therapy is available. *Salmonella* species are included as threat agents because of evidence of prior production or use by terrorist groups (e.g., Order of the Rising Sun, a U.S. fascist group in the Midwest, and Rajneesh cult, Oregon). These events are described in a following section.

The following agents are toxins, not organisms. They cannot cause epidemics, and only affect persons directly exposed:

- **Botulinum toxin**-Botulinum toxin can be harvested from anaerobic cultures of *Clostridium botulinum*. The toxin can be used as an aerosol or for the covert contamination of the food and water supplies of the target population.
Administration of polyvalent (A,B,E) antitoxin at the onset of symptoms, and to asymptomatic individuals exposed to the aerosol, may decrease rates of sickness or death. Several vaccines are undergoing evaluation, but none is available for large scale use.
- ***Staphylococcus enterotoxin B***—This organism can be used in aerosol form. The toxin may cause severe asthmatic-like respiratory distress, pulmonary infiltrates and fever within hours of exposure. The disease is generally not fatal.

Biological Weapons of the Future

Terrorists are unlikely to have access to these future weapons unless they are supplied by a state with an advanced offensive biowarfare

program. Current weapons are crude relative to what is possible with the use of advances in molecular biology and recombinant DNA technology. These suggestions, are speculative and, even if feasible, would require years of careful work with state-of-the-art technology.

The following are some of the more frightening possibilities:

- Production of hardened agents resistant to the environment—genes may be inserted into the genome of an infectious agent that render it resistant to ultraviolet light, temperature, moisture and other environmental factors that currently adversely affect the effective half-life of the organism. Such alterations would make a more efficient weapon agent.
- Production of highly lethal and infectious agents—converting a highly infectious organism, like *F. tularensis* (tularemia) into more rapidly lethal agents by inserting genes for lethal toxins into the genome.
- Production of large amounts of toxins and regulators—genes for toxins that are in limited supply could, at least in principle, be inserted into the common stool organism, *Escherichia coli*. Similarly, large amounts of peptide or protein regulators (i.e., sleep peptide, tuftsin) could be synthesized for weaponization.

Biological Agent Selection by Terrorists

The microbiological skill and the size and type of equipment available to a terrorist group will determine, to some extent, the agents that would be weaponized and utilized. Some analysts (i.e., from the Armed Forces Medical Intelligence Center) think that terrorist groups, whether state-sponsored or not, would select and use the same types of biowarfare agents. These would most likely be living bacteria such as *B. anthracis* (anthrax), *F. tularensis* (tularemia-rabbit fever), *Y. pestis* (plague), and *Shigella* (dysentery), and toxic agents that are relatively easy to manufacture (e.g., botulinum toxin, *staphylococcal enterotoxin B*). Although a terrorist group might recruit Ph.D.-level microbiologists and have a well-equipped clandestine laboratory (i.e., analogous to drug manufactur-

ing laboratories in the Colombian jungle), it is unlikely that they would attempt to weaponize highly infectious and lethal agents like the hemorrhagic fever viruses, nonlethal viral agents like Venezuelan Equine Encephalitis, or *Histoplasma capsulatum*, a fungal agent. Smallpox is an unlikely agent since there are only two sites in the world where cultures of *variola* (smallpox) exist and violation of these sites could be detected and thwarted.

Protection for the User

The first level of protection would be appropriate protective suits and masks, which are in commercial production. This would be of use to a terrorist delivering a weapon and for military applications as well. If technically advanced, the producer of such weapons could develop a vaccine to immunize its soldiers and civilians against the carrier organism (i.e., *F. tularensis* or *C. burnetii*) or the toxin of choice. In this way, the producer could protect its army and civilians against the organism. The targeted group would have no time to produce a vaccine and use it before it sustained a large number of casualties.

Infection of other species (i.e., cattle, rodents, domestic animals) or spread to other neutral countries might be a major problem with the use of such agents in war or for terrorist attacks. Such problems would have to be taken into account by any state or sub-national group considering use of biological weapons.

Why Have Biological Weapons Not Been Widely Used by Terrorists?

There has been much speculation as to the reasons for the absence of use of these weapons, considering their effectiveness and relatively low technical requirements. Analysts have suggested the following possible explanations:

- Terrorists are familiar with things that go ‘‘bang’’ and are able to achieve their objectives with the use of explosives and firearms. Since current, familiar methods appear to work, there is no need to change.⁶⁷

⁶⁷The idea that terrorists are satisfied with current methods may have to be altered if better security thwarts the use of bombs, rockets and small arms. In addition, state-sponsored terrorists may be called upon to inflict large numbers of U.S. civilian and military casualties in support of a power at war with the United States. Use of biological agents is an escalation which can lead to an increased number of fatalities or sick personnel, whose care would deplete the logistical resources of the U.S. military.

- Terrorists may fear that they will alienate their supporters by use of biological weapons to produce large numbers of fatalities (e.g., tens of thousands) in a civilian population.
- Terrorists may fear that successful use of such weapons may lead to an extreme response by the target country that would result in many terrorist casualties and destruction of their group.⁶⁸
- Terrorists are fearful of biological weapons and are unwilling to work with them.
- Terrorists may be under the control of sponsoring countries or groups of financial benefactors. Use of such weapons may be currently prohibited by these support groups.
- Terrorists may be awaiting a successful first use that leads to an important positive result. A successful use could result in “copy cat” attacks.

These suggestions are speculative; there may be other reasons that terrorists have not yet taken the bioweapon route. None of the above proposed reasons provides a guarantee that there will be no such attacks in the future.

Advantages for the terrorist of the use of biological weapons:

- Creation of fear and terror among the civilian population or military of the target country. The target government may be seen as unable to protect its citizens. Severe repressive measures taken by the target country may cause further governmental instability.
- Disruption of the economy of the target nation.
- Infliction of military casualties to weaken target forces that are in combat against the sponsoring state.
- Ability of terrorists to escape before illness begins in the target population, due to the invisible nature of the attacks and the time delay before onset of symptoms.
- Production of more terror, disruption, and casualties than conventional weapons.

Past Occurrences

A number of incidents related to threats, preparation for use, or actual use of biological and chemical agents by terrorists, are on record. These suggest that

future use of these agents cannot be excluded since they already have been used or proposed for use in the past. There have been many more threats to use these agents than known preparation for use or actual use. Some of the incidents with actual evidence of terrorist group possession of an agent or its use are listed below:

- 1972—United States. Members of the Order of the Rising Sun were found in possession of 30 to 40 kg of typhoid bacteria cultures for use against water supplies in major Midwest cities.
- 1980—The Baader-Meinhof gang of Germany was discovered to possess a *Clostridium botulinum* culture and a home biological laboratory in a Paris apartment.
- 1986—Rajneesh cult in Oregon. *Salmonella typhi* (typhoid) were allegedly used to contaminate salad bars in local restaurants to influence the outcome of a local election. Seven hundred and fifty cases resulted.

Many threats have been made to poison municipal water supplies, food, and pharmaceuticals by terrorists with political, social, and religious motivations, as well as by criminals (extortionists), disgruntled employees, and (possibly) mentally disturbed individuals.

Terrorist groups most likely to use biological weapons may have one or more of the following characteristics:

1. A large base of popular support that they are not concerned about alienating.
2. A history of large-scale violence with high numbers of casualties per attack.
3. Prior use of sophisticated weapons.
4. State sponsorship

Terrorist groups that have some of these characteristics include the Japanese Red Army, Red Army Faction, U.S. white-supremacist groups (Aryan Nations), Hizbollah, and the Abu Nidal Organization.

U.S. Defense Against Biological Weapons

An overview of defensive measures that U.S. military forces and the civilian population could use during the next few years is presented in this section. These measures are possible, but have not yet been

⁶⁸However, such fears have not been inhibitory to terrorists responsible for mass casualties (e.g., Hizbollah's attack on the Marine barracks in Beirut and the bombing of several jetliners, including Pan Am 103 over Lockerbie, Scotland in December 1988) in the recent past. Despite the large number of casualties, the perpetrators have thus far escaped unscathed.

rigorously tested in the field, implemented, and presented with appropriate training to our military forces or civilian populations. Options for improving the U.S. defense against bioweapons are also given.

Pre-attack Intelligence

Pre-attack warning is possible through intelligence. Terrorists associated with a sponsoring state are likely to use agents in the bioweapons arsenal of that state. The choice of agents available to unsponsored groups is limited to those listed and discussed above, and possibly a few others not listed because their characteristics make them unattractive offensive weapons.

Tracking known terrorists and intercepting suspicious individuals and groups moving from country to country offer some hope of preventing an attack.

Attempts by unsponsored terrorists groups operating in the United States might be detected by monitoring microbiology equipment and culture orders from noninstitutional buyers. Some attempts by individuals to acquire cultures of potential biological agents have been intercepted by such surveillance. It is unclear as to whether similar surveillance related to the purchase of laboratory equipment is in force.

Sale of cultures and equipment to individuals or groups of terrorists or terrorist suspects could be prevented.

Physical Protection

Long-term physical protection for civilians or military targets is not available at present. Collective protection for buildings using air intake biofilters (HEPA filters) is feasible, but no plans are in progress to facilitate this intervention.

Individual protection by use of light-weight masks on an almost continuous basis is not now possible because the current commercially available masks are not adequate to prevent aerosol infection. Hoods and masks used for contact with highly infectious patients at research centers are heavy and bulky and require a battery-driven motor to facilitate air movement into the mask. These masks are costly (\$650) and the batteries require replacement and recharging every 8 to 16 hours. They are, however, effective in preventing aerosol infection. Research to produce comfortable, light-weight masks with similar effectiveness should be supported with a

high priority. **At present, physical protection is the best generic defense against living organisms and/or toxins.**

Masks in current use by our military forces will protect against biowarfare and chemical agents. These masks, however, can only be worn for brief periods. Evacuation to an unexposed area and decontamination would be necessary before removal of protective clothing would be safe.

Detectors

Rapid, portable detectors are not available for living agents or toxins. Human illness will be the first sign of an attack. The air breathed by people concentrated in a specific area or building could be monitored by deploying Anderson or Reynier air samplers with culture plates that will grow aerosoled *B. anthracis* (anthrax), *F. tularensis* (tularemia) or *Y. pestis* (plague). The cultures would have to be changed several times a day to pinpoint the time of an attack. Such detection after the attack and before human illness occurs would allow use of pre-illness treatment and could limit casualties.

Prior attempts to develop a detector that utilized a large volume air sampler and a generic test for living agents or toxins were unsuccessful. The detectors developed were too sensitive and nonspecific (i.e., there were too many false alarms). These detectors were designed to warn of an attack in time to put on a protective mask. Because of the frequent false alarms that triggered mask usage during tests, the detectors were never manufactured in large numbers or deployed.

Detection of the attack hours later and prior to the onset of illness, may be more successful than attempts to rapidly diagnose an attack in time to put on a protective mask.

Medical Defense

Pre-attack Cataloging of Epidemics—It would be useful to record all epidemics occurring worldwide. The causative agent, area of the world, symptoms and signs, mortality rates, and total number of cases should be recorded. Epidemic data should be collected for each country or region. Serological surveys in countries of interest are also useful, since they further catalog subclinical epidemics. Background natural disease data are helpful for deciding if an epidemic occurring in a specific

area of the world is natural or due to a biological attack.

It may be possible to develop computer algorithms that could utilize epidemiologic data to help give an assessment of whether an epidemic is a natural or man-made disease. The epidemiological characteristics of a biological attack are listed below. These would be compared by the algorithms with the data from a suspicious outbreak of disease.

Epidemiological Characteristics of a Biological Attack—A successful attack will appear as a point source epidemic (i.e., a large number of ill patients appearing at neighboring medical facilities over a brief time interval). A bioweapon-caused epidemic may have some of the following characteristics:

1. a record number of cases;
2. a high attack rate;
3. a high rate of very severe illness;
4. a large percentage of cases with lung involvement;
5. sick or dead animals in the area;
6. disease confined to those who were in a specific area at a given time;
7. presence of more than one disease-producing agent;
8. presence of an agent that is not normally an epidemic problem in the area where the attack occurs (e.g., respiratory anthrax in Washington, DC);
9. detection of the aerosol device (i.e., bomblets or other means of dissemination).

The maintenance of a corps of experts is important to the ability of the Nation to defend itself against potential biological attack.

Specific Diagnosis

Clinical symptoms and signs, routine laboratory, and imaging methods (x-ray, computerized axial tomography, nuclear magnetic resonance imaging) can be used to narrow the list of possible causative agents of an outbreak to a manageable number. Clinical samples of body fluids or tissues can be collected from ill or dead patients, and tested to provide rapid diagnosis and characterization of the causative agent(s) or toxin. Rapid laboratory diagnosis of specific infectious agents can be accomplished by the following types of approaches:

1. antigen-capture using ELISA,⁶⁹ DNA probes, or DNA probes with the target genetic material amplified by the polymerase chain reaction;
2. bacterial or viral cultures;
3. microscopic examination of tissue by special stains, electron microscopy and immunofluorescence; or
4. detection of a specific antibody within 3 to 4 days of the onset of illness.

Therapy

Specific Therapy—Selection of an antimicrobial drug is best if the agent and its sensitivity profile are known. This could be rapidly obtained by clinical and routine laboratory methods.

Multiple drug and therapeutic trials—If the agent and/or its sensitivities remain unknown, then multiple drugs may be given to most of the patients while small groups of patients are treated with only one drug. The drug giving the best clinical response could then be used to treat all patients and the ineffective drugs discontinued. This strategy was used in the *Legionella pneumonia* outbreak and rapidly identified erythromycin as the most effective drug.

Other Defensive Measures

Warning—A central authority could collect detailed information regarding an outbreak and issue warnings to military and civilian groups. This would include information regarding prophylaxis and therapy.

Care—The number of available intensive care and support beds as well as specialized medical treatment personnel could be cataloged and kept updated.

Prophylaxis—Antibiotics could be administered when appropriate (i.e., doxycycline for *F. tularensis* or *Y. pestis*).

Vaccination—Since vaccines (of varying effectiveness) exist for *B. anthracis*, *Y. pestis*, and *F. tularensis*, their administration could be initiated among a group at risk if immunization had not been started prior to an attack.

⁶⁹ELISA stands for enzyme-linked immunospecific assay. The ELISA assay is a standard test for agents (micro-organisms or inert chemicals) that cause antibody reactions in larger organisms, generally humans.

Stockpiling—Antibiotics, antifungal, antiviral, and vaccines and antitoxins could be procured and be readily available for a potential target group.

Decontamination-Aerosoled bacteria such as *B. anthracis*, *Y. pestis* and *F. tularensis* do not usually adhere to clothing or skin in high enough concentrations to create a problem of secondary aerosol. Since there will most likely be no sign of an attack for 1 or 2 days, most bacterial agents remaining in the environment will already have been inactivated or diluted. A safe approach is use of soap and water and a change of clothing after an attack has been documented. Enspor can be used to decontaminate skin and clothing for *B. anthracis* if clothing changes are not available. Dilute bleach 1:5 or 1:10 is also useful for decontamination of *B. anthracis* and viral hemorrhagic fever agents.

Improving U.S. Defenses Against Biological Attacks

It is important to develop vaccines against biological agents most likely to be used by terrorists or states against U.S. targets. To do so first requires information and gathering by intelligence agencies and analysis by experts including those at the Armed Forces Medical Intelligence Center (AFMIC) at Ft. Detrick, MD. Beyond the obvious information on construction and operation of suspect research facilities abroad, attention needs to be paid to noninstitutional purchases of cultures and laboratory equipment that could be used to produce biological weapons. Coordination with foreign intelligence agencies could be employed to obtain information about specific state-sponsored terrorist groups. This is already being done to a limited extent. Continued surveillance of foreign bioweapon programs is necessary so that threat lists of weaponized agents remain current. The U.S. should also continue surveillance of nations suspected of providing states with an active offensive bioweapons program with laboratory equipment and scientists for production of such weapons. To improve border controls, U.S. Customs officials could be trained to recognize biological weapons to the degree possible.

Decisions on the direction of research to pursue should be coordinated among the intelligence agencies, who analyze likely threats, and the military (USAMRIID) and civilian researchers (e.g., at the National Institutes of Health and the Centers for Disease Control) responsible for developing vaccines and working on other related research, such as

early detection and diagnosis of biological attacks. An interagency oversight board composed of the above participants, would be a useful device to assure efficiency in research and to assign priorities.

Research and Development of Equipment for Physical Protection and Detection

Protection. A well-supported program for research, development and testing of motor-driven and other types of *biodefense* mask/hoods should be initiated. A mask that is light-weight, comfortable, tolerable for prolonged periods, and effective against toxins and biological agents should be the major goal of this program. Filter systems for the protection of buildings and other collective shelters are also important.

Post-attack pre-illness detection. Development of air sampling detection systems should be supported. Even detection of an attack after inhalation, but prior to the onset of symptoms, may result in the saving of many lives by initiation of early therapy.

Diagnosis and treatment. A computer database should be established to store epidemic disease information. This database could be used to help determine whether an epidemic in a specific area of the world is natural or man-made.

Tables and algorithms for the differential diagnosis of epidemic diseases using symptoms, signs, laboratory work and imaging studies, should be provided to physicians. Laboratories dedicated to perform rapid diagnostic tests for the identification of causative agents should be established near the attack site or at an accessible central location in the U.S. or Europe.

Antibiotics, vaccines and antitoxins should be stockpiled in high threat areas.

Vaccines for the major threat agents should be improved, tested, and then administered to those at risk.

Decontamination methods and useful disinfectants should be developed and tested against the major threat agents. This has only been done on a limited basis.

Pre-attack disaster planning should be done. This should include cataloging available medical personnel, intensive care beds, respirators and dialysis machines in the threat region, and in back-up hospitals outside the region.

Summary

Currently, U.S. targets are vulnerable to a biological attack. Present medical defense is reactive, designed to limit mortality after the attack has occurred.

No adequate long-term physical protection against aerosoled agents is available for soldiers or civilians. Stockpiles of drugs and vaccines being held for these groups may not be adequate. No program of pre-exposure vaccination or antibiotic use has been implemented, except in limited circumstances during the Gulf War. The principal defense against a bioweapons attack by terrorists or a sovereign state consists of identification of the attack as man-made, diagnosis of the causative agent(s), and initiation of specific therapy.

More coordination among military and civilian agencies would lead to a more effective

program of research, particularly in areas related to vaccine development and early detection and diagnosis of agents. The development of effective vaccines against most likely threat agents, such as anthrax and botulinum toxin, should be given high priority.

A physical defense in the form of effective, light-weight masks that could be worn for long periods of time is not available and has had a low priority. It would be important to have such hood/masks available in the event that bioweapons are used by terrorists or terrorist states. Antimicrobial drugs, vaccines and antitoxins effective against the threat agents should be stockpiled in threat areas. Improved intelligence is required to provide the United States with information that would allow prevention of a planned biological attack.