

WMD “Week in Review” Articles

March 14th, 2003

HISTORY OF NERVE AGENTS:

- GA (Tabun)
- GB (Sarin)
- GD (Soman)
- VX

Nerve agents are highly toxic organophosphate compounds first synthesized in Germany in the late 1930's. These agents are 20 times more deadly than potassium cyanide, 26 times more deadly than cyanide gas and 40 times as toxic as mustard vapor. Just 0.14 milligram per kilogram of body weight (VX), a pinprick sized droplet, will kill a human if gone untreated.

The first compound to be produced was Tabun, followed by Sarin and Soman. These agents were classified by the United States as GA, GB, & GD. The letter G represents Germany, and the following letters A through F designated the order in which the compound was synthesized. GC was not used by the US as it represented gonococcus and GE and GF were not widely produced thus they became obsolete very soon after their synthesis. The United States and England worked very hard after WWII to develop effective forms of protection from these agents. While conducting this research we, as well as the Brit's, were able to synthesize a more stable nerve agent known as V-agents. Ironically, one variant of V-agent was initially produced under the trade name of Amiton and released as an insecticide during the early 1950's in both the US and England. Amiton was soon taken off of the market after consistently finding a large number of mammals killed in the area of usage. In 1958, a British chemist by the name of R. Ghosh synthesized an extremely toxic V-agent known as VX. VX was placed into full-scale production by the United States in April 1961. The Soviet Union was not far behind and produced their own version of VX, which was only slightly different in structure to the US/English version of VX. These V-agents are approximately 170 times more toxic than Sarin (GB). A lethal drop of VX (7-10 mg) will fit between two columns of the Lincoln Memorial on the backside of a penny (approximately 10 mm in diameter).

Toxicity Chart	LD50 mg/70kg
GA (Tabun)	1000
GB (Sarin)	1700
GD (Soman)	50
VX	10

The "G" agents tend to be non-persistent and will evaporate at about the same rate as water whereas the VX agents will persist on the ground for three days at 60 degrees F (up to eight days at 14 degrees). Both types of nerve agents present their own unique problems for the rescuer. G agents will tend to "off gas" during the evaporation process thus will present with a "vapor hazard" for emergent personnel even if direct physical contact with the patient is avoided. V agents do not tend to "off gas" but are 5 to 170 times more toxic than G agents and remain in the area where released for much longer periods of time. (Note: Based upon the LD50 chart, VX is 170 times more toxic than Sarin)

The most recent domestic terrorist attack utilizing a nerve agent occurred in Japan in 1995. A Buddhist terrorist group known as the Shoko Asahara attacked a subway full of commuters by concealing the nerve agent Sarin in lunch boxes and soft-drink containers. These containers were placed in various locations on the floor of the subway cars. The agent was then released by puncturing the containers with umbrellas as the terrorists left the trains. Even with this crude method of delivery, over 4000 people were injured in this terrorist incident. At least 493 patients were admitted to area hospitals. Twelve people were killed as a result of this terrorist attack.

The lack of immediate access to personal protective equipment (Tyvek or charcoal impregnated over garments as well as respirators) resulted in 135 ambulance personnel succumbing to the effects of Sarin.

There were also 110 hospital personnel affected due to the "off gassing" of the Sarin from the patient's clothing as well as direct contact with the agent imbedded in the garments. This number could have been reduced if proper decontamination procedures had been implemented prior to allowing patients access to the emergency rooms.

March 21st, 2003

Nerve Agent Exposure:

Nerve agents may be absorbed through any body surface. When dispersed as a spray or aerosol, droplets can be absorbed through the skin, eyes, and respiratory tract. Vapor is primarily absorbed through the respiratory tract. Nerve agents may also be absorbed through the gastrointestinal tract when ingested with food or water. The rapidity with which organophosphate effects occur is directly related to the amount of agent absorbed in a given period of time.

The respiratory tract (inhalation) is the most rapid and effective route of absorption. Local inhalation effects include bronchospasm and bronchorrhea. Local effects after skin exposure are localized sweating and/or muscular twitching. Local effects after vapor or liquid exposure to the eye include miosis and often conjunctival hyperemia. Local effects of liquid on the mucous membrane include twitching or contracting of the underlying muscle and glandular secretions. Absorption of a nerve agent by any route may result in generalized systemic effects. The mnemonic by which most of us associate organophosphate poisoning is:

SLUDGE

- **S**alivation
- **L**acrimation
- **U**rination
- **D**efecation
- **G**astrointestinal pain & gas
- **E**mesis

This mnemonic has been replaced with an updated mnemonic **DUMBELS**, which more accurately depicts signs and symptoms one may find when examining patients exposed to nerve agent vapor, aerosol or liquid.

DUMBELS

- **D**iarrhea
- **U**rination
- **M**iosis
- **B**radycardia, **B**ronchorrhea, **B**ronchospasm
- **E**mesis
- **L**acrimation
- **S**alivation, **S**weating

Mechanism of Action:

The effects of organophosphate nerve agents in general are mainly due to their ability to inhibit acetylcholinesterase (AChE) throughout the body. Since the normal function of this enzyme is to hydrolyze acetylcholine (ACh) wherever it is released, such inhibition results in the accumulation of excessive concentrations of acetylcholine at its various sites of action resulting in over stimulation.

Let's review the basics of nerve impulse transmission. Nerve cells are electrically conducting cells, but from one cell to another, the signal is no longer electric, but chemical. When the electrical signal reaches the end of the nerve cell which is conducting it, or reaches the synapse, it causes the pre-synaptic terminal to release packets of the neurotransmitter acetylcholine which diffuse across the space between cells, the synaptic cleft, interacting with post-synaptic receptors on the second cell, and causing the second cell to react. If the second cell is a nerve cell, this will cause a new electrical signal to continue on down the line. If the second cell is skeletal or smooth muscle, the result will be muscle contraction. If the second cell is an exocrine gland, the result will be glandular secretions. The enzyme acetylcholinesterase (AChE) is the turn-off switch to these chemical reactions. It destroys, or hydrolyzes, the neurotransmitter ACh, which ends the reaction and keeps it regulated.

Muscarinic & Nicotinic Receptors:

Prior to discussing the treatment for nerve agent exposure, we must first review the two types of post-synaptic cholinergic receptors. The two types of post-synaptic receptors are muscarinic and nicotinic. Muscarinic cholinergic receptors are found in smooth or non-voluntary muscles, exocrine glands, and certain cranial nerves such as the vagus, which slows the heart. Nicotinic receptors are mostly found in skeletal muscles, but they also sit on pre-ganglionic nerves in the sympathetic nervous system.

If we turn on all of the muscarinic receptors simultaneously, we'll get constriction of all the smooth muscles in the body. In particular, the smooth muscles of the small airways will constrict, causing difficulty breathing. GI tract smooth muscles will constrict, causing

increased peristalsis, increased bowel sounds, and possibly nausea, vomiting, and diarrhea. The pupillary muscle constricts briskly when we turn on the muscarinic receptors resulting in miosis. All of our exocrine neuroglandular junctions will turn on full blast secreting fluid from all of these organs. The most life-threatening reaction will be in the respiratory system, not just from the smooth muscle hyperactivity causing bronchospasm but also from the increased secretions from exocrine glands in the airways.

Turning on all of our nicotinic synapses simultaneously will have effects predominantly at voluntary or skeletal neuromuscular junctions. First we may see fasciculations, tiny involuntary twitches which don't cause any movement across a joint. This will proceed to frank twitching, where the muscle now moves a joint. This can be very vigorous and perhaps even mimic tonic-clonic seizure activity, but it's not a seizure, just a massive overstimulation of the neuromuscular junction itself. When the muscle runs out of energy, ATP, it will fatigue resulting in flaccid paralysis. (Note: Paralysis is never the first thing you'll see. If you have ever used Raid Wasp & Hornet spray, you can actually see the progression of nerve agent exposure. The insect doesn't just drop motionless to start with; there is a period of hyperactivity first.) The nicotinic synapses in the sympathetic nervous system can also cause increased blood pressure and heart rate. This activity will counteract the muscarinic effects on the vagus nerve often resulting in normal heart rate and blood pressure initially.

Atropine is administered to counteract the effects of muscarinic overstimulation. It works by blocking acetylcholine at the post-synaptic receptor site. Atropine, however, **will not** affect nicotinic receptor sites. This is an important point to remember. Treating nerve agent exposure with Atropine only will allow the overstimulation of the nicotinic to run unchecked. This is the reason Atropine is given in conjunction with Pralidoxime (2 Pam Cl).

2 Pam Cl is administered to counteract the effects of both muscarinic and nicotinic overstimulation. It works by binding with acetylcholinesterase (AChE) and actually hydrolyzes the nerve agent allowing the AChE to function unimpeded. 2 Pam must be given early on in the exposure, otherwise, the nerve agent will "age" and bind permanently to the acetylcholinesterase enzyme.

March 28th, 2003

Preventing Nerve Agent Poisoning

The respiratory tract absorbs nerve agent vapor very rapidly. The protective mask must be put on **IMMEDIATELY** when it is suspected that nerve agent vapor is present in the air. **HOLD YOUR BREATH**, put on your mask, clear and seal the mask, then resume breathing. Ensure that you have donned and sealed your protective overgarments, gloves and boots prior to leaving your vehicle. If the nerve agent concentration in the air is high, a few breaths may result in the inhalation of enough nerve agent to be incapacitating or even lethal. When the concentration in the air is low, a longer exposure may precede the onset of symptoms and the detection of nerve agent poisoning. Since the effects of a nerve agent are progressive and cumulative, the prevention of further absorption is urgent once symptoms have begun.

Military experience in chemical operations has shown that when troops become alarmed, some believe they have been exposed to more chemical agents than they actually have been. Hence, it is important that EMS personnel **NOT** give themselves more than one Mark 1 kit initially with mild signs and symptoms. Employees who are able to breathe normally, ambulate, and know who they are and where they are will probably not need any additional Mark 1 kits administered. (It should be noted that additional administration of Atropine to co-workers with only **MILD** symptoms must be approached cautiously with at least 10 to 15 minutes elapsing between successive injections. If the signs of nerve agent poisoning disappear, or if signs of Atropinization, such as a heart rate above 90, diminished bronchial secretions, and dry skin, appear during one of these 10- to 15-minute periods, no further injections should be administered. These individuals should remain under observation without further injections of Atropine unless signs of nerve agent intoxication reappear.) However, if symptoms do recur, additional kits (up to two more for a total of three), can be administered. Personnel should consult with a co-worker to determine if he or she needs additional injections of Atropine and 2-Pam Cl.

Note: Additional Mark 1 kits may have to be given by one's partner or another EMS employee since personnel requiring additional medication may be unable to administer injections to themselves.

Respiratory effort is the most important criteria in determining whether additional Atropine is needed. Labored breathing, including coughing, wheezing, and gasping for air, indicates the need for administering additional Atropine. Evaluating heart rate is difficult when dressed in protective overgarments leaving the need for additional Atropine based primarily on the degree of respiratory impairment. When adequate Atropine has been given, labored breathing efforts will be relieved. Any assessment of co-workers must be performed without compromising protective measures (mask, suit, gloves, boots).

NOTE: DO NOT give nerve agent antidotes for preventive purposes **BEFORE** contemplated exposure to a nerve agent. To do so may enhance respiratory absorption of nerve agents by inhibiting bronchoconstriction and bronchial secretion. Atropine will degrade

performance when taken in doses of more than 2 milligram (mg) without nerve agent exposure, especially when maximal visual acuity is required. Also, Atropine will degrade an individual's ability to perform duties in a hot environment.

Essential Elements of Prevention and Treatment

The essential prevention and treatment elements of nerve agent poisoning are:

- Donning the protective mask (and hood) at the first indication of a nerve agent attack.
- Dress in your protective overgarment, boots & gloves ensuring all are sealed.
- Administering the MARK I kit as soon as any mild to moderate signs or symptoms are noted.
- Administering Diazepam to Severely poisoned casualties.
- Removing or neutralizing any liquid contamination immediately.
- Suction airway secretions if they are obstructing the airway.
- Establishing a patent airway with an endotracheal tube and administering assisted ventilation, if required.

Remember...

The most important tool in the prevention of Nerve Agent exposure is your "common sense". Always be suspicious of mass casualty scenes of unknown origin. Be observant in your approach, especially for the presence of dead animals, birds and insects.

These "subtle signs" may be your first and only indication of a Nerve Agent release prior to actually becoming a victim yourself.

Above all else, use the Buddy System when working in a hazardous environment. Watch your co-workers closely for signs and symptoms of Nerve Agent Exposure.

April 4th, 2003

RICIN

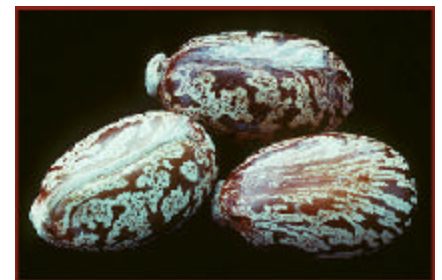
Ricin is one of the most toxic natural poisons known to man. It is derived from the Castor Bean Plant (*Ricinus communis*) and is native to the Ethiopian region of Africa. It can be found in temperate regions of the world and is fast becoming an abundant weed in the Southwestern United States. Castor bean is a herbaceous annual that can reach to nearly 15 feet tall when growing in open spaces in warm climates. Large leaves are alternate, palmately lobed with 5-11 toothed lobes.



Leaves are glossy and often red or bronze tinted when young. Flowers appear in clusters at the end of the main stem in late summer. The fruit consists of an oblong spiny pod that contains three seeds on average. Seeds are oval and light brown, mottled or streaked with light and dark brown and resemble a pinto bean. Castor plants are very common along stream banks, riverbeds, bottomlands, and just about any hot area where the soil is well drained and with sufficient nutrients and moisture to sustain the vigorous growth.

Although the seeds or beans are extremely poisonous, they are the source of numerous economically important products and were one of earliest commercial products. Castor beans have been found in ancient Egyptian tombs dating back to 4000 B.C., and the oil was used thousands of years ago in wick lamps

for lighting. To many people the castor plant is just an overgrown, undesirable weed, and yet it produces one of nature's finest natural oils.



Ricin is significant as a terrorist biological weapon due in part to its wide availability and ease of manufacture. Worldwide, one million tons of castor beans are processed annually in the production of castor oil; the waste mash from this process is five percent Ricin by weight. Ricin can be produced relatively easily and inexpensively in large quantities in a fairly low technology setting. There is recent evidence that Ricin is being produced by terrorists for use as a biological weapon of mass destruction. On January 15, 2003 a British police officer lost his life in a counter-terrorism raid in Manchester England where Ricin was thought to have been in production. On March 20, 2003 Ricin was found in a Paris railway station in a luggage depot, thought to have been placed there for later retrieval by terrorist agents. Milligram per milligram, Ricin is as toxic as VX Nerve agent. The most important thing to remember about Ricin is that there IS NO KNOWN ANTIDOTE for this toxin.

April 11th,2003

Terroristic Use of Ricin

Ricin, although extremely toxic, must be delivered in sufficient amounts to cause mortality in humans. To be used as a terrorist weapon, Ricin must be distributed either through a food source for human consumption or aerosolized for inhalation. (It would be highly unlikely that Ricin would be delivered intravenously or subcutaneous in this setting). Due to modern methods of food packaging, the most likely distribution of Ricin as a weapon of mass destruction would be through aerosolization.

Mechanism of Toxicity

The toxins are made up of two polypeptide chains, an A chain and a B chain, which are joined by a disulfide bond. Ricin is very toxic to cells. It acts by inhibiting protein synthesis. The B chain binds to cell surface receptors and the toxin-receptor complex is taken into the cell; the A chain has endonuclease activity and extremely low concentrations will inhibit protein synthesis. A single molecule of Ricin entering a cell can inactivate over 1500 ribosomes per minute.

When inhaled as a small particle aerosol, this toxin may produce pathologic changes within 8 hours and severe respiratory symptoms followed by acute hypoxic respiratory failure in 36-72 hours. When ingested, Ricin causes severe gastrointestinal symptoms followed by vascular collapse and death.

When tested on rodents, there are microscopic cellular changes after aerosol exposure. These changes are characterized by necrotizing airway lesions causing tracheitis, bronchitis, bronchiolitis, and interstitial pneumonia with alveolar edema. There is a latent period of 8 hours post-inhalation exposure before microscopic lesions are observed. In rodents, Ricin is more toxic by the aerosol route than by other routes of exposure.

There is little toxicity data in humans. The exact cause of morbidity and mortality would be dependent upon the route of exposure. During the 1940's there were several accidental sub lethal aerosol exposures of Ricin, which were characterized by an onset of fever, chest tightness, cough, dyspnea, nausea, and arthralgias, which occurred in the first four to eight hours. The onset of profuse sweating some hours later was commonly the sign of termination of most of the symptoms. Although lethal human aerosol exposures have not been observed, the severe pathophysiologic changes seen in the animal respiratory tract, including necrosis and severe alveolar flooding, are probably sufficient to cause death if enough toxin is inhaled. Time to death in experimental animals is dose dependent, occurring 36-72 hours post inhalation exposure. Humans would be expected to develop severe lung inflammation with progressive cough, dyspnea, cyanosis, pulmonary edema, and eventual acute hypoxic respiratory failure.

Diagnosis

An attack with aerosolized Ricin would be, as with many biological warfare agents, primarily diagnosed in the clinical setting. Acute lung injury affecting a large number of cases in a suspected terrorist attack should raise suspicion of an attack with a pulmonary irritant such as Ricin, although other pulmonary agents could present with similar signs and symptoms. Biological agents such as Anthrax and SEB as well as some chemical warfare agents like phosgene need to be included in the differential diagnosis.

- There would be no mediastinitis as seen with inhalation Anthrax.
- SEB would be different in that most patients would not progress to a life-threatening syndrome but would tend to plateau clinically.
- Phosgene induced acute lung injury would progress much faster than that caused by Ricin.

An important point to remember is that Ricin intoxication would be expected to progress, despite treatment with antibiotics.

Essential Elements of Prevention and Treatment

The essential prevention for Ricin in the emergent response setting is the donning of protective masks prior to arrival on scene. Secondary aerosols (similar to off gassing in Nerve agents) should generally not be a danger to health care providers. Clorox diluted to a 0.1% sodium hypochlorite solution and/or soap and water should be sufficient to decontaminate skin surfaces.

- Patients with pulmonary intoxication are managed by appropriate treatment for pulmonary edema and respiratory support.
- Gastrointestinal intoxication is best managed by vigorous gastric decontamination with activated charcoal, followed by use of cathartics such as magnesium citrate.
- Volume replacement of GI fluid loss is also important.
- In percutaneous exposures, treatment would be primarily supportive.

Treatment is based upon the route of exposure. Follow the guidelines on page(s) 44 & 45 of your NBC Field Manual.

April 18th, 2003

Dirty Bomb

The Threat

There has been much discussion, since 9/11, surrounding the use of a “Dirty Bomb” as a weapon of mass destruction. In fact, on May 8, 2002, the FBI captured Abdullah Al Muhajir, a U.S. citizen allegedly working with al-Qaeda to set off a dirty bomb in an American city. The Washington Post reported in March 2002 that the Bush administration’s consensus view was that Osama bin Laden’s al-Qaeda terrorist network probably had in their possession enough stolen radioactive contaminants such as strontium 90 and cesium 137, which could be used to make a dirty bomb. Getting this material into the United States undetected poses the biggest problem for the terrorists at this time.

In January 2003, British officials found documents in the Afghan city of Herat that led them to conclude that al-Qaeda had successfully built a small dirty bomb. It has also been reported that Iraq tested a one-ton radiological bomb in 1987 but gave up on the idea because the radiation levels it generated were not deadly enough. Based upon this information it appears that the threat is real, however, the jury is still out on how effective a “Dirty Bomb” would be as a weapon of mass destruction.

What is a Dirty Bomb?

A “Dirty Bomb”, also known as a Radiological Dispersal Device (RDD), is in no way a conventional nuclear device. A nuclear weapon detonation involves a fission reaction that generates an extreme amount of heat (several tens of millions of degrees centigrade), neutrons, x and gamma rays, electromagnetic pulse, and a large area of thermal blast devastation. The triggering device for a nuclear weapon is extremely sophisticated, well beyond the technical abilities of most terrorist agents.

In contrast, a “Dirty Bomb” is quite easy to manufacture because it is assembled utilizing conventional explosives such as dynamite, ANFO, C-4, etc. combined with low level radiological material in the form of powder or pellets. However, since September 11, 2001, stringent reporting measures involving theft of radiological material have been put into place regulating this material and hospital waste products. Only one stolen high-risk radioactive source, Iridium-192, has not been recovered in the last five years in the United States. However, this source (Iridium-192) would no longer be considered high-risk because much of the radioactivity has decayed away since it was reported stolen in 1999. In fact, the combined total of all un-recovered sources over a 5-year time span would barely reach the threshold for one high-risk radioactive source.

The idea behind a dirty bomb is to blast radioactive material into the area surrounding the conventional explosion. This could possibly cause buildings and people to be exposed to radioactive material. However, at the levels created by most probable sources, not enough radiation would be present in a dirty bomb to cause severe illness from exposure to radiation. In fact, the primary cause of death in the use of such a device would be from the conventional blast itself.

The main purpose of a “Dirty Bomb” is to terrorize citizens and make buildings or land unusable for a long period of time. Cleanup after such an event would take several months costing perhaps tens of millions of dollars. This is why the “Dirty Bomb” has often been referred to as a *Weapon of Mass Disruption*.

Response Profile

There are several things that must be considered when responding to events involving explosions. First of all - **Don’t assume that the event is over after the initial explosion.** Treat every event involving explosion as if there were secondary material involved, in other words, as if it were a Haz-Mat event. There could even be secondary explosive devices timed to explode after the area is saturated with emergent personnel. Use extreme caution when approaching the scene. Always approach upwind and maintain a safe distance from the scene. **Remember: Time, Distance, & Shielding.** Always wear your bunker gear and respirator when outside of your vehicle. This will provide you the best protection from radiological emissions as well as from biological contaminants both at the scene and when treating patients or the walking wounded. Above all else, use your common sense. Don’t rush in and become a victim yourself.

April 25th, 2003

Suicide Bombing

The Threat

Suicide terrorism is the readiness to sacrifice one's life in the process of destroying or attempting to destroy a target to advance a political goal. The aim of the psychologically and physically war-trained terrorist is to die while destroying the enemy target.

In the 1980s suicide terrorism was witnessed in Lebanon, Kuwait and Sri Lanka. In the 1990s it had spread to Israel, India, Panama, Algeria, Pakistan, Argentina, Croatia, Turkey, Tanzania and Kenya. With enhanced migration of terrorist groups from conflict-ridden countries, the formation of extensive international terrorist infrastructures and the increased reach of terrorist groups in the post Cold War period, suicide terrorism is likely to affect Western Europe and North America in the foreseeable future.



Key Characteristics

Examination of suicide terrorism across a range of groups has revealed that terrorist groups use suicide bombers when they are both strong and weak. Suicide-capable groups differ in form, size, orientation, goal and support. There are now 10 religious and secular terrorist groups that are capable of using suicide terrorism as a tactic against their governments and/or foreign governments. They are: the Islam Resistance Movement (Hamas) and the Palestinian Islamic Jihad of the Israeli occupied territories; Hezbollah of Lebanon; the Egyptian Islamic Jihad (EIJ) and Gamaya Islamiya (Islamic Group - IG) of Egypt; the Armed Islamic Group (GIA) of Algeria; Barbar Khalsa International (BKI) of India; the Liberation Tigers of Tamil Eelam (LTTE) of Sri Lanka; the Kurdistan Worker's Party (PKK) of Turkey; and the Osama bin Laden network (Al Qaeda) of Afghanistan. A review of the key characteristics of the 10 suicide-capable groups reveals that any group can acquire suicide bomb technology and engage in suicide terrorism.

Method of Operation

The organization of suicide operations is extremely secretive. The success of the mission depends on a number of elements: level of secrecy; thorough reconnaissance; and thorough rehearsals. Secrecy enables the preservation of the element of surprise, critical for the success of most operations.

Thorough reconnaissance enables the group to plan, often by building a scale model of the target. Thorough rehearsals allow the bomber to gain stealth and speed. There are other elements, such as getting the bomber to the target zone and then to the target itself. The bomber is usually supported by an operational cell, responsible for providing accommodation, transport food, clothing and security to the bomber until he/she reaches the target. Resident agents help generate intelligence for the operation, from target reconnaissance to surveillance. The cell members confirm the intelligence. Often, immediately before the attack, the bomber conducts the final reconnaissance.

As a comprehensive knowledge of the target is essential for the success of a suicide operation, terrorist groups depend on building solid agent-handling networks. Some security and intelligence agencies have succeeded in penetrating the agent-handling network of various terrorist groups. In some cases, the only form of defense is to penetrate the terrorist group itself. This is because bombers penetrate governments or societies as sleepers and gradually gain acceptance as a trusted member. Thus the bomber can reach and destroy a valuable target - human or infrastructure.

Method of Delivery

There are six types of suicide improvised explosive devices (IEDs). These are: the human-borne suicide IED, also known as the suicide bodysuit; the vehicle-borne suicide IED; the motorcycle-borne suicide IED; naval craft-borne suicide IED; scuba diver-borne suicide IED; and aerial- (microlight, glider, mini-helicopter) borne suicide IED. All these categories have been used in South Asia and the Middle East.

The largest number of suicide IEDs used has been the suicide bodysuit. The suicide body suit has evolved to improve concealment and is becoming increasingly small. Initially, the device was a square block of explosives worn in the chest and the belly area. Gradually, the device evolved into a heart shaped block of explosives placed just above the navel. As body searchers for suicide devices are usually conducted around the abdomen, a group is also developing breast bombs.



Most suicide body suits have no/little electronics, making it difficult for security agencies to develop counter-technologies to detect these devices. A suicide body suit can be made from commercial items. With the exception of the malleable plastic explosives and detonator, all the other components can be purchased from a tailor shop (stretch denim) and an auto shop (steel ball bearings, wires, batteries and switches). Furthermore, when a device is sophisticated it becomes difficult to operate, as well as fixing it when it fails to function. Suicide devices will thus remain simple.



However, there are likely to be variations of suicide devices. Terrorists tend to select from a repertoire of tactics. This is to retain an element of surprise and to evade the attention of security authorities directed at countering a standard set of tactics.

A Growing Threat

The threat of suicide terrorism is likely to spread with time. It is likely that suicide terrorism will affect Western Europe and North America in the future.

Terrorist groups are increasingly providing intensive training to their bombers, with the intention of increasing their endurance. For instance, the suicide bomber who destroyed the U.S. embassy in Nairobi in 1998 had been resident in Kenya for four years. He had married in Kenya and lived in the capital before carrying out the suicide operation. Similarly, the suicide bomber who assassinated President Premadasa of Sri Lanka had lived in the capital, Colombo, for three years before carrying out the attack.

Terrorist groups are setting a dangerous trend of using suicide bombers to destroy targets far away from their traditional theatres of operation. Many groups are likely to use suicide bombers to infiltrate target countries and conduct suicide attacks against Western VIPs and critical infrastructure in the foreseeable future.

August 22nd, 2003

Explosions and Blast Injuries

Original Article can be found at - www.cdc.gov

As the risk of terrorist attacks increases in the US, disaster response personnel must understand the unique pathophysiology of injuries associated with explosions and must be prepared to assess and treat the people injured by them.

Background

Explosions can produce unique patterns of injury seldom seen outside combat. When they do occur, they have the potential to inflict multi-system life-threatening injuries on many persons simultaneously. The injury patterns following such events are a product of the composition and amount of the materials involved, the surrounding environment, delivery method (if a bomb), the distance between the victim and the blast, and any intervening protective barriers or environmental hazards. Because explosions are relatively infrequent, blast-related injuries can present unique triage, diagnostic, and management challenges to providers of emergency care.

Few U.S. health professionals have experience with explosive-related injuries. Vietnam era physicians are retiring, other armed conflicts have been short-lived, and until this past decade, the U.S. was largely spared of the scourge of mega-terrorist attacks. This primer introduces information relevant to the care of casualties from explosives and blast injuries.

Classification of Explosives

Explosives are categorized as high-order explosives (HE) or low-order explosives (LE). HE produce a defining supersonic over-pressurization shock wave. Examples of HE include TNT, C-4, Semtex, nitroglycerin, dynamite, and ammonium nitrate fuel oil (ANFO). LE create a subsonic explosion and lack HE's over-pressurization wave. Examples of LE include pipe bombs, gunpowder, and most pure petroleum-based bombs such as Molotov cocktails or aircraft improvised as guided missiles. HE and LE cause different injury patterns.

Explosive and incendiary (fire) bombs are further characterized based on their source. "Manufactured" implies standard military-issued, mass produced, and quality-tested weapons. "Improvised" describes weapons produced in small quantities, or use of a device outside its intended purpose, such as converting a commercial aircraft into a guided missile. Manufactured (military) explosive weapons are exclusively HE-based. Terrorists will use whatever is available - illegally obtained manufactured weapons or improvised explosive devices (also known as "IEDs") that may be composed of HE, LE, or both. Manufactured and improvised bombs cause markedly different injuries.

Blast Injuries

The four basic mechanisms of blast injury are termed as primary, secondary, tertiary, and quaternary (Table 1). "Blast Wave" (primary) refers to the intense over-pressurization impulse created by a detonated HE. Blast injuries are characterized by anatomical and physiological changes from the direct or reflective over-pressurization force impacting the body's surface. The HE "blast wave" (over-pressure component) should be distinguished from "blast wind" (forced super-heated air flow). The latter may be encountered with both HE and LE.

Table 1: Mechanisms of Blast Injury			
Category	Characteristics	Body Part Affected	Types of Injuries
Primary	Unique to HE, results from the impact of the over-pressurization wave with body surfaces.	Gas filled structures are most susceptible - lungs, GI tract, and middle ear.	Blast lung (pulmonary barotrauma) TM rupture and middle ear damage Abdominal hemorrhage and perforation - Globe (eye) rupture- Concussion (TBI without physical signs of head injury)
Secondary	Results from flying debris and bomb fragments.	Any body part may be affected.	Penetrating ballistic (fragmentation) or blunt injuries Eye penetration (can be occult)
Tertiary	Results from individuals being thrown by the blast wind.	Any body part may be affected.	Fracture and traumatic amputation Closed and open brain injury
Quaternary	All explosion-related injuries, illnesses, or diseases not due to primary, secondary, or tertiary mechanisms. Includes exacerbation or complications of existing conditions.	Any body part may be affected.	Burns (flash, partial, and full thickness) Crush injuries Closed and open brain injury Asthma, COPD, or other breathing problems from dust, smoke, or toxic fumes Angina Hyperglycemia, hypertension

LE are classified differently because they lack the self-defining HE over-pressurization wave. LE's mechanisms of injuries

are characterized as due from ballistics (fragmentation), blast wind (not blast wave), and thermal. There is some overlap between LE descriptive mechanisms and HE's Secondary, Tertiary, and Quaternary mechanisms.

Overview of Explosive-Related Injuries	
System	Injury or Condition
Auditory	TM rupture, ossicular disruption, cochlear damage, foreign body
Eye, Orbit, Face	Perforated globe, foreign body, air embolism, fractures
Respiratory	Blast lung, hemothorax, pneumothorax, pulmonary contusion and hemorrhage, A-V fistulas (source of air embolism), airway epithelial damage, aspiration pneumonitis, sepsis
Digestive	Bowel perforation, hemorrhage, ruptured liver or spleen, sepsis, mesenteric ischemia from air embolism
Circulatory	Cardiac contusion, myocardial infarction from air embolism, shock, vasovagal hypotension, peripheral vascular injury, air embolism-induced injury
CNS Injury	Concussion, closed and open brain injury, stroke, spinal cord injury, air embolism-induced injury
Renal Injury	Renal contusion, laceration, acute renal failure due to rhabdomyolysis, hypotension, and hypovolemia
Extremity Injury	Traumatic amputation, fractures, crush injuries, compartment syndrome, burns, cuts, lacerations, acute arterial occlusion, air embolism-induced injury

Note: Up to 10% of all blast survivors have significant eye injuries. These injuries involve perforations from high-velocity projectiles, can occur with minimal initial discomfort, and present for care days, weeks, or months after the event. Symptoms include eye pain or irritation, foreign body sensation, altered vision, periorbital swelling or contusions. Findings can include decreased visual acuity, hyphema, globe perforation, subconjunctival hemorrhage, foreign body, or lid lacerations. Liberal referral for ophthalmologic screening is encouraged.

Selected Blast Injuries

- Lung Injury**
 "Blast lung" is a direct consequence of the HE over-pressurization wave. It is the most common fatal primary blast injury among initial survivors. Signs of blast lung are usually present at the time of initial evaluation, but they have been reported as late as 48 hours after the explosion. Blast lung is characterized by the clinical triad of apnea, bradycardia, and hypotension. Pulmonary injuries vary from scattered petechiae to confluent hemorrhages. Blast lung should be suspected for anyone with dyspnea, cough, hemoptysis, or chest pain following blast exposure. Blast lung produces a characteristic "butterfly" pattern on chest X-ray. A chest X-ray is recommended for all exposed persons and a prophylactic chest tube (thoracostomy) is recommended before general anesthesia or air transport is indicated if blast lung is suspected.
- Ear Injury**
 Primary blast injuries of the auditory system cause significant morbidity, but are easily overlooked. Injury is dependent on the orientation of the ear to the blast. TM perforation is the most common injury to the middle ear. Signs of ear injury are usually present at time of initial evaluation and should be suspected for anyone presenting with hearing loss, tinnitus, otalgia, vertigo, bleeding from the external canal, TM rupture, or mucopurulent otorrhea. All patients exposed to blast should have an otologic assessment and audiometry.
- Abdominal Injury**
 Gas-containing sections of the GI tract are most vulnerable to primary blast effect. This can cause immediate bowel perforation, hemorrhage (ranging from small petechiae to large hematomas), mesenteric shear injuries, solid organ lacerations, and testicular rupture. Blast abdominal injury should be suspected in anyone exposed to an explosion with abdominal pain, nausea, vomiting, hematemesis, rectal pain, tenesmus, testicular pain, unexplained

hypovolemia, or any findings suggestive of an acute abdomen. Clinical findings may be absent until the onset of complications.

- **Brain Injury**

Primary blast waves can cause concussions or mild traumatic brain injury (MTBI) without a direct blow to the head. Consider the proximity of the victim to the blast particularly when given complaints of headache, fatigue, poor concentration, lethargy, depression, anxiety, insomnia, or other constitutional symptoms. The symptoms of concussion and post traumatic stress disorder can be similar.

- **Emergency Management Options**

- Follow your hospital's and regional disaster system's plan.
- Expect an "upside-down" triage - the most severely injured arrive after the less injured, who by-pass EMS triage and go directly to the closest hospitals.
- Double the first hour's casualties for a rough prediction of total "first wave" of casualties. Obtain and record details about the nature of the explosion, potential toxic exposures and environmental hazards, and casualty location from police, fire, EMS, ICS Commander, regional EMA, health department, and reliable news sources.
- If structural collapse occurs, expect increased severity and delayed arrival of casualties.

- **Medical Management Options**

- Blast injuries are not confined to the battlefield. They should be considered for any victim exposed to an explosive force.
- Clinical signs of blast-related abdominal injuries can be initially silent until signs of acute abdomen or sepsis are advanced.
- Standard penetrating and blunt trauma to any body surface is the most common injury seen among survivors. Primary blast lung and blast abdomen are associated with a high mortality rate. "Blast Lung" is the most common fatal injury among initial survivors.
- Blast lung presents soon after exposure. It can be confirmed by finding a "butterfly" pattern on chest X-ray. Prophylactic chest tubes (thoracostomy) are recommended prior to general anesthesia and/or air transport.
- Auditory system injuries and concussions are easily overlooked. The symptoms of mild TBI and post traumatic stress disorder can be identical.
- Isolated TM rupture is not a marker of morbidity; however, traumatic amputation of any limb is a marker for multi-system injuries.
- Air embolism is common, and can present as stroke, MI, acute abdomen, blindness, deafness, spinal cord injury, or claudication. Hyperbaric oxygen therapy may be effective in some cases.
- Compartment syndrome, rhabdomyolysis, and acute renal failure are associated with structural collapse, prolonged extrication, severe burns, and some poisonings.
- Consider the possibility of exposure to inhaled toxins and poisonings (e.g., CO, CN, MetHgb) in both industrial and criminal explosions.
- Wounds can be grossly contaminated. Consider delayed primary closure and assess tetanus status. Ensure close follow-up of wounds, head injuries, eye, ear, and stress-related complaints.
- Communications and instructions may need to be written because of tinnitus and sudden temporary or permanent deafness.

May 9th, 2003

Chlorine (Pulmonary Agents) History

After last week's article depicting worst-case scenarios involving Vulcan, I thought it might be important to review the effects of pulmonary agents, in particular Chlorine. Chlorine gas was first used as a weapon of mass destruction during the First World War. In order to break a stalemate on the front in Belgium in early 1915, the German Army spent two months implanting 6,000 commercial cylinders of chlorine in their trenches along a 7-kilometer salient near Ypres, Belgium. On the 22nd of April the prevailing westerly winds shifted in favor of the Germans. Over a ten-minute period, they released the contents of all 6,000 cylinders and a six-foot tall, yellow-green cloud wafted toward the French lines. Neither side anticipated the effectiveness of this chemical assault. Those allied troops that did not die in place, broke and ran, leaving a four-mile wide gap in the allied line. While it is unlikely that an adversary would use chlorine to attack US Forces on today's battlefield, this agent and related compounds (Phosgene) still pose a serious threat to the US military and the American people. Thousands of tons of Chlorine are produced, stored and transported each year in this country, creating the potential for a large-scale release from an industrial accident. The potential for domestic terrorism is also a significant concern. Terrorists use weapons of opportunity. Simply opening the valve on a chlorine or phosgene tank-car near a large metropolitan area could produce mass casualties. Both chlorine and phosgene are ever-present in the chemical industry. These compounds are used as precursors for more complex chlorinated hydrocarbons, the primary components of modern plastics and dyes.

Recent Events

The second largest release of Chlorine in the United States occurred near Alberton Montana on April 11th, 1996. Around 4:00 AM on



Alberton, MT.; KPAX TV video; Missoula, MT

that date, a 72-car train derailed approximately 1 mile west of Alberton. At least one tank car of pressurized Chlorine ruptured creating a 24-inch gap in the cylinder, venting approximately 122,000 lbs of Chlorine. Over 1000 people were evacuated from an 8 to 15 square mile area, including the entire town of Alberton (population 374). At least one person died as a result of this release and over 352 people were hospitalized. People exposed to the toxic chemical fumes reported a number of health effects: burning eyes and nose, lung irritation and inflammation, sore throats, difficulty breathing, wheezing, coughing up yellow or green sputum, nose bleeds, coughing up blood, headaches and dizziness, and other symptoms or reactions including, depression, lack of motor skills, hopelessness, and anxiety. Exposed animals and livestock also developed reactions: including eye lesions, difficulty breathing, wheezing, which are indicative of lung irritation.

Chemical Properties

Chlorine was discovered in 1774 and was named from the Greek word *Khloros*, when translated, means “green”. Because it is highly reactive, chlorine is usually found in nature bound with other elements like sodium, potassium, and magnesium. When chlorine is isolated as a free element, chlorine is a greenish yellow gas, which is 2.5 times heavier than air. It turns to a liquid state at -29°F, and it becomes a yellowish crystalline solid at -153°F. Chlorine can be liquefied under pressure for transport by rail and is slightly soluble in water. When released to air, chlorine will react with water to form hypochlorous acid and hydrochloric acid, which are removed from the atmosphere by rainfall. The hypochlorous acid breaks down rapidly. The hydrochloric acid also breaks down; its breakdown products will lower the pH of the water making it more acidic.



Health Considerations

The toxic effects of chlorine are primarily due to its corrosive properties. The action of chlorine is due to its strong oxidizing capability, in which chlorine splits hydrogen from water in moist tissue, causing the release of nascent oxygen and hydrogen chloride which produce major tissue damage. Alternatively, chlorine may be converted to hypochlorous acid which can penetrate cells and react with cytoplasmic proteins to form N-chloro derivatives that destroy cell structure. Symptoms may be apparent immediately or delayed for a few hours. Respiratory Chlorine is water-soluble and therefore, primarily removed by the upper airways. Exposure to low concentrations of chlorine (1 to 10 ppm) may cause eye and nasal irritation, sore throat, and coughing. Inhalation of higher concentrations of chlorine gas (>15 ppm) can rapidly lead to respiratory distress with airway constriction and accumulation of fluid in the lungs (pulmonary edema). Patients may have immediate onset of rapid breathing, blue discoloration of the skin, wheezing, rales or hemoptysis. In symptomatic patients, pulmonary injury may progress over several hours. Lung collapse may occur. The lowest lethal concentration for a 30-minute exposure has been estimated as 430 ppm. Exposure to chlorine can lead to reactive airways dysfunction syndrome (RADS), a chemical irritant-induced type of asthma. Cardiovascular Tachycardia and initial hypertension followed by hypotension may occur. After severe exposure, cardiovascular collapse may occur from lack of oxygen. Metabolic Acidosis may result from insufficient oxygenation of tissues. Dermal Chlorine irritates the skin and can cause burning pain, inflammation, and blisters. Exposure to liquefied chlorine can result in frostbite injury. Ocular Low concentrations in air can cause burning discomfort, spasmodic blinking or involuntary closing of the eyelids, redness, conjunctivitis, and tearing. Corneal burns may occur at high concentrations. Pulmonary function usually returns toward baseline within 7 to 14 days. Although complete recovery generally occurs, symptoms and prolonged pulmonary impairment may persist. Exposure to chlorine can lead to reactive airways dysfunction syndrome (RADS).

If victims show signs and symptoms of skin burning or eye injury, remove clothing and decontaminate with soap and water. Victims who present with signs of respiratory distress, without s/s of skin injury, usually do not need decontamination. There is no antidote for Chlorine poisoning so treatment is mainly supportive. Quickly access for a patent airway, ensure adequate respiration and pulse. If trauma is suspected, maintain cervical immobilization manually and apply a cervical collar and a backboard when feasible. High flow O₂, ventilation assist with bag-valve mask, and intubation may be required to maintain the victims airway. Treat pulmonary edema as required. (Note: Health information obtained from CDC documents).

Personal Protection

EMS personnel should stay upwind and avoid low-lying areas. If entry into the area of contamination is required, ensure that you wear your chemical protective clothing, hood, gloves, and gas mask with a cartridge designed for chlorine (multi-gas) exposure (M-

95, 3M P100, etc). Always use the buddy system when working in hazardous areas. Expect to be overwhelmed by the sheer volume of patients if an event as described in last weeks article should occur. Above all else, use your common sense and ensure that you have donned all appropriate gear before entering the area of contamination.

Photographs of Albertain Montana 1996 Chemical Release



Albertain, MT; KPAX TV video; Missoula, MT



Albertain, MT; KPAX TV video; Missoula, MT



Albertain, MT.; KPAX TV video; Missoula, MT

Note: Articles dealing with Soft Targets in and around Sedgwick County have been omitted from this document for security reasons.

Terrorism – “Taking a look back”

For the past nine months or so, I have attempted to make available documents, video, and PowerPoint training modules via our intranet website ‘EMS Online’ and internet website ‘SC-EMS.com’ as well as research and post several weekly and bi-weekly articles dedicated to education on various forms of terrorism and WMD. As we approach the second anniversary of September 11, 2001; I think it important to take a look at the history of Terrorist Incidents over the past 10 years as well as identify major terrorist groups worldwide.

I hope that you have found the information provided thus far informative.

“Never doubt that a small group of thoughtful citizens can change the world. Indeed, it is the only thing that ever has.” -
Margaret Mead

“Democracy is two wolves and a lamb voting on what to have for lunch. Liberty is a well-armed lamb contesting the vote!” -
Benjamin Franklin

Terrorist Activity Timeline: 1993-2003

(Does not include terrorist activity involving the Israel - Palestine conflict)

Feb. 26, 1993: A bomb explodes in a garage under the World Trade Center in New York City, killing six and injuring more than 1,000. A group of Islamic extremists, followers of Egyptian cleric Sheik Omar Abdel Rahman, are later convicted.

April 14, 1993: The Iraqi intelligence service tries to assassinate former US President George H.W. Bush during a visit to Kuwait.

May 1, 1993: A Tamil Tiger suicide bomber assassinates Sri Lankan President Ranasinghe Premadasa.

Feb. 25, 1994: Jewish extremist and US citizen Barach Goldstein opens fire with a machine gun on worshipers in a mosque in Hebron, West Bank, killing 29 and wounding approximately 150.

Nov. 13, 1995: Seven people, including five Americans, are killed when two bombs explode at a US-Saudi military facility in Riyadh, Saudi Arabia. Usama bin Laden blamed for the attack.

March 20, 1995: Twelve people die and 5,700 are injured when members of the Aum Shinrikyu cult release sarin, a nerve gas, in the Tokyo subway system. A near-simultaneous attack was launched on the Yokohama subway system.

April 19, 1995: An Israeli law student assassinates Israeli Prime Minister Yitzhak Rabin, who had just finished addressing 50,000 people at a peace rally in Tel Aviv.

Feb 16, 1996: The IRA ends its 18-month ceasefire by detonating a bomb in London's Docklands area that kills two.

June 25, 1996: Bin Laden followers detonate a fuel truck carrying a bomb at the Khabar Towers housing facility at the U.S. Military base near Dhahran, Saudi Arabia, Killing 19 American soldiers and wounding 515 Americans and Saudi Arabians.

July 27, 1996: A bomb explodes at the Olympic Park in Atlanta, Georgia, killing one and wounding 110. Eric Robert Rudolph is eventually charged with the bombing, as well as others in the Southeast that wounded 60.

Sept. 27, 1996: The Taliban Islamic movement, which later gave refuge to bin Laden, takes control of Kabul, capital of Afghanistan.

Dec. 17, 1996: Tupac Amaru revolutionaries take several hundred people hostage at the Japanese ambassador's residence in Lima, Peru, including several U.S. officials. The terrorists release most of the hostages but keep dozens of Peruvians and Japanese in custody until April 22, 1997, when security forces retake the building and kill the gunmen.

Feb. 23, 1997: A Palestinian opens fire on tourists on the observation deck of the Empire State Building in New York. A Danish citizen is killed and several people are injured before the man turns the gun on himself.

Nov. 17, 1997: Members of the Al-Gama's al-Islamiyya (Islamic Group) gun down 58 foreign tourists and 4 Egyptians, and wound 26 others, at the Valley of the Kings near Luxor, Egypt.

Aug. 7, 1998: The U.S. embassies in Nairobi, Kenya, and Dar es Salaam, Tanzania, are destroyed by truck bombs. In Kenya, 291 people are killed, including 12 Americans, and 5,000 injured; 10 are killed and 77 wounded in Tanzania. The Clinton administration deems Usama bin Laden responsible and launches air strikes against suspected Al Qaeda facilities in Sudan and Afghanistan.

Aug. 15, 1998: The Real IRA, a splinter group of the main body which had instituted a cease-fire, detonates a 500-pound car bomb in a shopping district of Omagh, Northern Ireland, killing 29 and injuring 330.

Aug. 28, 1998: The FBI accuses bin Laden of having declared "jihad", or holy war, against the United States. The complaint also alleges bin Laden founded Al Qaeda that year to promote Islamic fundamentalism and force non-Muslims out of Muslim countries.

Nov. 4, 1998: Bin Laden charged with ordering embassy bombings.

Feb. 26, 1999: FARC left-wing guerrillas abduct three U.S. citizens working for Pacific Cultural Conservancy International in Columbia; their bodies are found on March 4 in Venezuela. FARC, and six of its members, were indicted by the U.S. government in 2002 for the murders.

Dec. 14, 1999: An Algerian man is arrested trying to enter Washington state from Canada in a car loaded with explosives, intending to bomb Los Angeles International Airport before the millennial celebrations. He admits to receiving training - and funds - at camps run by Usama bin Laden in Afghanistan.

Oct. 12, 2000: Suicide bombers in Yemen attack the U.S. Navy destroyer USS Cole, killing 17 sailors and injuring 39. Officials suspect Usama bin Laden was involved.

Jan. 15, 2001: The U.N. imposes new economic sanctions against the Taliban for refusing to turn bin Laden over for trial.

May 26, 2001: The Philippine Muslim rebel group abu Sayaaf kidnaps 20 people, including three Americans, from a resort in Malaysia. Another American is beheaded by the group a month later, and several Filipinos are also killed.

June 1, 2001: A suicide bomber attacks a Tel Aviv nightclub in Israel, killing 21 and injuring more than 100 other people. Palestinian Islamic Jihad claims responsibility.

Sept. 11, 2001: Two hijacked airliners crash into both towers of the World Trade Center in New York City, and a third flies into the Pentagon outside Washington, D.C. A fourth hijacked jet, possibly headed for the White House, crashes in a field in Pennsylvania as passengers try to overpower the hijackers. The World Trade Center towers collapse, and approximately 2,000 people die. Usama bin Laden's Al Qaeda organization is held responsible.

Sept. 12, 2001: President Bush labels the attacks "acts of war" and asks Congress to devote \$20 billion to recovery and allies to join a war on terrorism. NATO declares the attacks an attack on all 19-member states. The FBI says that it has identified most of the hijackers. Firefighters continue to douse flames in New York and Washington, as "missing" posters begin to appear across New York City.

Sept. 14, 2001: The Justice Department names 19 suspects in the attacks, whom intelligence sources link directly to Usama bin Laden. Bush gives military authority to call up 50,000 reservists. Afghanistan's ruling Taliban warns of revenge if United States attacks. Bush leads the nation in prayer at National Cathedral and visits Ground Zero for the first time, delivering his "Bullhorn Speech."

Sept. 20, 2001: President Bush addresses the nation, declaring, "Either you are with us, or you are with the terrorists." He announces the creation of the new cabinet-level Office of Homeland Security, to be led by Pennsylvania Gov. Tom Ridge.

Sept. 24, 2001: President Bush orders U.S. financial institutions to freeze the assets of 27 groups and individuals suspected of supporting terrorism.

Sept. 25, 2001: Saudi Arabia cuts ties with the Taliban.

Sept. 28, 2001: The U.N. Security Council approves a U.S.-sponsored resolution demanding that all nations take sweeping action against terrorism.

Oct. 5, 2001: A photo editor for American Media in Florida dies from inhalation anthrax. Over the next two months, four more people will die from anthrax and more than a dozen other cases of exposure will be reported. Anthrax will also be discovered in letters sent to the New York Post, NBC's Tom Brokaw, then-Senate Majority Leader Tom Daschle, Sen. Patrick Leahy of Vermont and the New York offices of CBS and ABC.

Oct. 7, 2001: After negotiations to have bin Laden turned over fail, the U.S. launches air strikes on Afghanistan. Targets include Kabul, Al Qaeda training camps and Taliban bases. Bin Laden, in videotaped message, praises God for the Sept. 11 attacks and swears America will never "dream of security" until "the infidels' armies leave the land of Muhammad."

Oct. 26, 2001: President Bush signs an anti-terrorism bill giving police unprecedented ability to search, seize, detain and eavesdrop in pursuit of possible terrorists. Officials announce discovery of trace amounts of anthrax at State Department and CIA buildings.

Dec. 11, 2001: The first criminal charges in Sept. 11 attacks are brought against Zacarias Moussaoui, who had been arrested in August after instructors at a flight-training school in Minnesota grew suspicious of his intentions.

Dec. 13, 2002: Five gunmen attack the Indian parliament building in New Delhi, killing seven. The attackers, thought to be linked to a Pakistan-based Islamic group fighting in Kashmir, are killed during a gun battle with security forces.

Dec. 22, 2001: Richard Reid, a British citizen with alleged ties to Al Qaeda, tries to blow up an American Airlines jet flying from Paris to Miami using a bomb hidden in his shoe. He is subdued by flight attendants and passengers.

Jan. 27, 2002: The first female Palestinian suicide bomber kills one and wounds 113 in an attack on a shopping area in Jerusalem.

Feb. 17, 2002: The Federal government assumes control of security checkpoints at the nation's 429 commercial airports.

March 18, 2002: U.S. commanders declares the end of Operation Anaconda, the largest U.S.-led ground operation in the Afghan campaign, but many Taliban and Al Qaeda fighters slip through the dragnet and seek refuge in the largely lawless border areas of Pakistan.

March 20, 2002: Nine people are killed when a bomb goes off outside the U.S. embassy in Peru, three days before a scheduled visit by President George W. Bush. The Shining Path Maoist rebel group is suspected.

June 7, 2002: American missionary Gracia Burnham is rescued from the Abu Sayyaf in a Philippine Army raid, but her husband Martin and a Filipino nurse being held with them are killed.

July 15, 2002: 'American Taliban' John Walker Lindh pleads guilty to supplying services to Taliban and carrying explosives during commission of a felony. He agrees to cooperate with terrorism investigations.

July 31, 2002: A bomb explodes at a cafeteria at Hebrew University in Jerusalem, killing seven - including five Americans - and wounding more than 80. Hamas claims responsibility, but apologizes for the deaths of the Americans.

Oct. 12, 2002: An explosion tears through a crowded nightclub in Bali, Indonesia, killing more than 200 people, most of them Australian or from other Western countries. The U.S. government ties the attack to the Al Qaeda network.

Oct. 23-25, 2002: Chechen rebels take about 800 people hostage when they seize a Moscow theater, threatening to destroy the building unless their demands are met. Approximately 120 hostages and 50 rebels are killed when Russian special forces use "sleeping gas" to storm the building.

Oct. 28, 2002: U.S. diplomat Laurence Foley is assassinated outside his home in Amman, Jordan.

Nov. 28, 2002: More than a dozen people, many of them Israeli tourists, die when a truck bomb explodes in an Israeli-owned hotel on the Indian Ocean near Mombasa, Kenya. At the same time, surface-to-air missiles narrowly miss a chartered Israeli jet taking off from the Mombasa airport. Al Qaeda is blamed.

May 12, 2003: Thirty-four people are killed in a series of bombings at foreign housing facilities in Riyadh, Saudi Arabia. Al Qaeda is blamed for the attacks.

May 16, 2003: Over 30 people die in five simultaneous bombings in Casablanca, Morocco targeting Jewish and Western targets. Al Qaeda is suspected, but indigenous Islamists may have been to blame.

Aug. 5, 2003: A car bomb goes off in front of the Marriott hotel in downtown Jakarta, Indonesia, killing 15 people and wounding close to 150. Jemaah Islamiyah is suspected to be behind the attack.

Aug. 7, 2003: A car bomb explodes at the Jordanian embassy in Baghdad, Iraq, killing 19 people. U.S. officials suspect that Ansar al-Islam, a group linked to Usama bin Laden.

Aug. 19, 2003: A truck bomb explodes outside of the UN Embassy in Baghdad, Iraq killing at least 20 people including the top UN envoy Sergio Vieira de Mello.

Aug. 29, 2003: A car bomb explodes in Iraq at the holy city of Najaf killing 85 including the Ayatollah Mohammed Baqir al-Hakim.

Major International Terrorist Groups:

(Does not include Domestic Terrorist Groups such as PETA, ELF and ALF)

Abu Nidal

AKA: Not applicable.

- **Description:** International terrorist organization founded by Sabri al-Banna (a.k.a Abu Nidal). Split from PLO in 1974. Made up of various functional committees, including political, military and financial. In November 2002, Abu Nidal died in Baghdad. The new leadership of the organization is unclear.
- **Activities:** Has carried out terrorist attacks in 20 countries, killing or injuring almost 900 people. Targets include the United States, the United Kingdom, France, Israel, moderate Palestinians, the PLO and various Arab countries. Major attacks included the Rome and Vienna airports in December 1985, the Neve Shalom synagogue in Istanbul, the Pan Am Flight 73 hijacking in Karachi in September 1986 and the City of Poros day-excursion ship attack in Greece in July 1988. Suspected of assassinating PLO deputy chief Abu Iyad and PLO security chief Abu Hul in Tunis in January 1991. ANO assassinated a Jordanian diplomat in Lebanon in January 1994 and has been linked to the killing of the PLO representative there. Has not staged a major attack against Western targets since the late 1980s.
- **Strength:** Few hundred members, plus limited overseas support structure.
- **Area of Operation:** Al-Banna relocated to Iraq in December 1998, where the group maintains a presence. Has an operational presence in Lebanon, including in several Palestinian refugee camps. Authorities shut down the ANO's operations in Libya and Egypt in 1999. Has demonstrated ability to operate over wide area, including the Middle East, Asia and Europe. Financial problems and internal disorganization have reduced the group's activities and capabilities.
- **External Aid:** Has received considerable support, including safe haven, training, logistic assistance and financial aid from Iraq, Libya and Syria (until 1987), in addition to close support for selected operations.

Abu Sayyaf

AKA: ASG

- **Description:** The ASG is the most violent of the separatist groups operating in the southern Philippines. Some ASG leaders allegedly fought in Afghanistan during the Soviet war and are students and proponents of radical Islamic teachings. The group split from the Moro National Liberation Front in the early 1990s under the leadership of Abdurajak Abubakar Janjalani, who was killed in a clash with Philippine police on Dec. 18, 1998. His younger brother, Khadaffi Janjalani, has replaced him as the nominal leader of the group, which is composed of several semiautonomous factions.
- **Activities:** Engages in kidnappings for ransom, bombings, assassinations and extortion. Although from time to time it claims that its motivation is to promote an independent Islamic state in western Mindanao and the Sulu Archipelago, areas in the southern Philippines heavily populated by Muslims, the ASG has primarily used terror for financial profit. Recent bombings may herald a return to a more radical, politicized agenda. The group's first large-scale action was a raid on the town of Ipil in Mindanao in April 1995. In April 2000, an ASG faction kidnapped 21 people, including 10 foreign tourists, from a resort in Malaysia. On May 27, 2001, the ASG kidnapped three U.S. citizens and 17 Filipinos from a tourist resort in Palawan, Philippines. Several of the hostages, including one U.S. citizen, were murdered. During a Philippine military hostage rescue operation on June 7, 2002, U.S. hostage Gracia Burnham was rescued, but U.S. hostage Martin Burnham and Filipina Deborah Yap were killed during the operation. Philippine authorities say that the ASG had a role in a bombing near a Philippine military base in Zamboanga on Oct. 2 that killed three Filipinos and one U.S. serviceman, and wounded 20.
- **Strength:** Estimated to have 200 to 500 members.
- **Area of Operation:** The ASG was founded in Basilan Province and mainly operates there and in the neighboring provinces of Sulu and Tawi-Tawi in the Sulu Archipelago. It also operates in the Zamboanga peninsula, and members occasionally travel to Manila and other parts of the country. The group expanded its operations to Malaysia in 2000 when it abducted foreigners from a tourist resort.
- **External Aid:** Largely self-financing through ransom and extortion; may receive support from Islamic extremists in the Mideast and South Asia. Libya publicly paid millions of dollars for the release of the foreign hostages seized from Malaysia in 2000.

Al Aqsa Martyrs Brigade

AKA: Not applicable.

- **Description:** The Al Aqsa Martyrs' Brigade comprises an unknown number of small cells of Fatah-affiliated activists that emerged at the outset of the current intifada attack Israeli targets. It aims to drive the Israeli military and settlers from the West Bank, Gaza Strip and Jerusalem and to establish a Palestinian state.
- **Activities:** Al Aqsa has carried out shootings and suicide operations against Israeli military personnel and civilians, and has killed Palestinians who it believed were collaborating with Israel. At least five U.S. citizens, four of them dual Israeli-U.S. citizens, were killed in Al Aqsa's attacks. The group probably did not attack them because of their U.S. citizenship. In January 2002, Al Aqsa claimed responsibility for the first suicide bombing carried out by a female.
- **Strength:** Unknown
- **Area of Operation:** Al Aqsa operates mainly in the West Bank and has claimed attacks inside Israel and the Gaza Strip. It may have followers in Palestinian refugee camps in southern Lebanon.
- **External Aid:** Unknown

Al Jihad

AKA: Not applicable.

- **Description:** Egyptian Islamic extremist group active since the late 1970s. Merged with bin Laden's Al Qaeda organization in June 2001, but may retain some capability to conduct independent operations. Primary goals are

to overthrow the Egyptian government and replace it with an Islamic state, and to attack U.S. and Israeli interests in Egypt and abroad.

- **Activities:** Historically specialized in armed attacks against high-level Egyptian government personnel, including cabinet ministers, and car bombings against official U.S. and Egyptian facilities. The original Jihad was responsible for the assassination in 1981 of Egyptian President Anwar Sadat. Claimed responsibility for the attempted assassinations of Interior Minister Hassan al-Alfi in August 1993 and Prime Minister Atef Sedky in November 1993. Has not conducted an attack inside Egypt since 1993 and has never targeted foreign tourists there. Responsible for Egyptian Embassy bombing in Islamabad in 1995. In 1998, an attack against U.S. Embassy in Albania was thwarted.
- **Strength:** Unknown, but probably has several hundred hard-core members.
- **Area of Operation:** Historically operated in the Cairo area, but most of its network is outside Egypt, including Yemen, Afghanistan, Pakistan, Lebanon and the United Kingdom, and its activities have been centered outside Egypt for several years.
- **External Aid:** Unknown. The Egyptian government claims that Iran supports the Jihad. Its merger with Al Qaeda also boosts Usama bin Laden's support for the group. Also may obtain some funding through various Islamic nongovernmental organizations, cover businesses and criminal acts.

Al Qaeda

AKA: None

- **Description:** Established by Usama bin Laden in the late 1980s to bring together Arabs who fought in Afghanistan against the Soviet Union. Helped finance, recruit, transport and train Sunni Islamic extremists for the Afghan resistance. Current goal is to establish a pan-Islamic Caliphate throughout the world by working with allied Islamic extremist groups to overthrow regimes it deems "non-Islamic" and expelling Westerners and non-Muslims from Muslim countries - particularly Saudi Arabia. Issued statement under banner of "the World Islamic Front for Jihad Against the Jews and Crusaders" in February 1998, saying it was the duty of all Muslims to kill U.S. citizens - civilian or military - and their allies everywhere. Merged with Egyptian Islamic Jihad (AI-Jihad) in June 2001.
- **Activities:** In 2002, carried out bombing on Nov. 28 of hotel in Mombasa, Kenya, killing 15 and injuring 40. Probably supported nightclub bombing in Bali, Indonesia, on October 12 that killed about 180. Responsible for an attack on U.S. military personnel in Kuwait on Oct. 8 that killed one soldier and injured another. Firebombed a synagogue in Tunisia on April 11 that killed 19 and injured 22. On Sept. 11, 2001, 19 Al Qaeda suicide attackers hijacked and crashed four U.S. commercial jets: two into New York's World Trade Center, one into the Pentagon and one into a field in Shanksville, Pa., leaving about 3,000 individuals dead or missing. Directed the Oct. 12, 2000, attack on the USS Cole in Aden, Yemen, killing 17 U.S. Navy members and injuring 39. Conducted the bombings in August 1998 of U.S. embassies in Nairobi, Kenya, and Dar es Salaam, Tanzania, that killed at least 301 and injured more than 5,000. Al Qaeda is linked to several plans that were not carried out, including a plot to assassinate Pope John Paul II in Manila in 1994, an attempt on the life of President Clinton in the Philippines in 1995 and a plot to set off a bomb at Los Angeles International Airport in 1999.
- **Strength:** Al Qaeda probably has several thousand members and associates. The arrests of senior-level Al Qaeda operatives have interrupted some terrorist plots. Also serves as a focal point or umbrella organization for a worldwide network that includes many Sunni Islamic extremist groups, some members of al-Gama'a al-Islamiyya, the Islamic Movement of Uzbekistan and the Harakat ul-Mujahidin.
- **Area of Operation:** Al Qaeda has cells worldwide and is reinforced by its ties to Sunni extremist networks. Was based in Afghanistan until Coalition forces removed the Taliban from power in late 2001. Al Qaeda has dispersed in small groups across South Asia, Southeast Asia and the Middle East, and probably will attempt to carry out future attacks against U.S. interests.
- **External Aid:** Al Qaeda maintains moneymaking front businesses, solicits donations from like-minded supporters and illicitly siphons funds from donations to Muslim charitable organizations. U.S. efforts to block Al Qaeda funding has hampered the group's ability to obtain money.

Armed Islamic Group

AKA: GIA

- **Description:** An Islamic extremist group, the GIA aims to overthrow the secular Algerian regime and replace it with an Islamic state. The GIA began its violent activity in 1992 after Algiers voided the victory of the Islamic Salvation Front - the largest Islamic opposition party - in the first round of legislative elections in December 1991.
- **Activities:** Frequent attacks against civilians and government workers. Since 1992 the GIA has conducted a terrorist campaign of civilian massacres, sometimes wiping out entire villages in its area of operation, although the group's dwindling numbers have caused a decrease in the number of attacks. Since announcing its campaign against foreigners living in Algeria in 1993, the GIA has killed more than 100 expatriate men and women - mostly Europeans - in the country. The group uses assassinations and bombings, including car bombs, and it is known to favor kidnapping victims and slitting their throats. The GIA hijacked an Air France flight to Algiers in December 1994. In 2002, a French court sentenced two GIA members to life in prison for conducting a series of bombings in France in 1995.
- **Strength:** Exact numbers unknown; probably fewer than 100.
- **Area of Operation:** Algeria
- **External Aid:** None known.

FARC

AKA: Revolutionary Armed Forces of Colombia

- **Description:** Established in 1964 as the military wing of the Colombian Communist Party, the FARC is Colombia's oldest, largest, most capable and best-equipped Marxist insurgency. The FARC is governed by a secretariat, led by septuagenarian Manuel Marulanda (a.k.a. "Tirofijo") and six others, including senior military commander Jorge Briceño (a.k.a. "Mono Jojoy"). Organized along military lines and includes several urban fronts. In February 2002, the group's slow-moving peace negotiation process with the Pastrana administration was terminated by Bogotá following the group's plane hijacking and kidnapping of a Colombian senator from the aircraft. On Aug. 7, the FARC launched a large-scale mortar attack on the Presidential Palace where President Alvaro Uribe was being inaugurated. High-level foreign delegations - including from the United States - attending the inauguration were not injured, but 21 residents of a poor neighborhood nearby were killed by stray rounds in the attack.
- **Activities:** Bombings, murder, mortar attacks, kidnapping, extortion, hijacking, as well as guerrilla and conventional military action against Colombian political, military and economic targets. In March 1999, the FARC executed three U.S. Indian rights activists on Venezuelan territory after it kidnapped them in Colombia. Foreign citizens often are targets of FARC kidnapping for ransom. Has well-documented ties to full range of narcotics trafficking activities, including taxation, cultivation and distribution.
- **Strength:** Approximately 9,000 to 12,000 armed combatants and several thousand more supporters, mostly in rural areas.
- **Area of Operation:** Colombia with some activities - extortion, kidnapping, logistics and R
- **External Aid:** Cuba provides some medical care and political consultation. A trial is currently underway in Bogotá to determine whether three members of the Irish Republican Army - arrested in Colombia in 2001 upon exiting the FARC-controlled demilitarized zone - provided advanced explosives training to the FARC.

Hamas

AKA: Islamic Resistance Movement

- **Description:** Formed in late 1987 as an outgrowth of the Palestinian branch of the Muslim Brotherhood. Various Hamas elements have used both political and violent means, including terrorism, to pursue the goal of establishing an Islamic Palestinian state in place of Israel. Loosely structured, with some elements working clandestinely and others working openly through mosques and social service institutions to recruit members, raise

money, organize activities and distribute propaganda. Hamas' strength is concentrated in the Gaza Strip and the West Bank. Also has engaged in peaceful political activity, such as running candidates in West Bank Chamber of Commerce elections.

- **Activities:** Hamas activists, especially those in the Izz al-Din al-Qassam Brigades, have conducted many attacks - including large-scale suicide bombings - against Israeli civilian and military targets. In the early 1990s, they also targeted suspected Palestinian collaborators and Fatah rivals. Hamas increased its operational activity during 2001-2002 claiming numerous attacks against Israeli interests. The group has not targeted U.S. interests - although some U.S. citizens have been killed in Hamas operations - and continues to confine its attacks to Israelis inside Israel and the territories.
- **Strength:** Unknown number of official members; tens of thousands of supporters and sympathizers.
- **Area of Operation:** Hamas currently limits its terrorist operations to Israeli military and civilian targets in the West Bank, Gaza Strip and Israel. The group's leadership is dispersed throughout the Gaza Strip and West Bank, with a few senior leaders residing in Syria, Lebanon and the Gulf States.
- **External Aid:** Receives some funding from Iran but primarily relies on donations from Palestinian expatriates around the world and private benefactors in moderate Arab states. Some fund-raising and propaganda activity take place in Western Europe and North America.

Hezbollah

AKA: Party of God

- **Description:** Formed in 1982 in response to the Israeli invasion of Lebanon, this Lebanon-based radical Shi'a group takes its ideological inspiration from the Iranian revolution and the teachings of the late Ayatollah Khomeini. The Majlis al-Shura, or Consultative Council is the group's highest governing body and is led by Secretary General Hassan Nasrallah. Hezbollah is dedicated to liberating Jerusalem, ultimately eliminating Israel, and has formally advocated ultimate establishment of Islamic rule in Lebanon. Nonetheless, Hezbollah has actively participated in Lebanon's political system since 1992. Hezbollah is closely allied with, and often directed by, Iran but may have conducted operations that were not approved by Tehran. While Hezbollah does not share the Syrian regime's secular orientation, the group has been a strong tactical ally in helping Syria advance its political objectives in the region.
- **Activities:** Known or suspected to have been involved in numerous anti-U.S. and anti-Israeli terrorist attacks, including the suicide truck bombings of the U.S. Embassy and U.S. Marine barracks in Beirut in October 1983 and the U.S. Embassy annex in Beirut in September 1984. Three members of Hezbollah, Imad Mughniyah, Hasan Izz-al-Din and Ali Atwa, are on the FBI's list of 22 Most Wanted Terrorists for the hijacking in 1985 of TWA Flight 847 during which a U.S. Navy diver was murdered. Elements of the group were responsible for the kidnapping and detention of Americans and other Westerners in Lebanon in the 1980s. Hezbollah also attacked the Israeli Embassy in Argentina in 1992 and the Israeli cultural center in Buenos Aires in 1994. In fall 2000, it captured three Israeli soldiers in the Shab'a Farms and kidnapped an Israeli noncombatant whom it may have lured to Lebanon under false pretenses.
- **Strength:** Several thousand supporters and a few hundred terrorist operatives.
- **Area of Operation:** Operates in the southern suburbs of Beirut, the Bekaa Valley and southern Lebanon. Has established cells in Europe, Africa, South America, North America and Asia.
- **External Aid:** Receives financial, training, weapons, explosives, political, diplomatic and organizational aid from Iran, and diplomatic, political and logistic support from Syria.

Jemaah Islamiya

AKA: JI

- **Description:** Jemaah Islamiya is a Southeast Asian terrorist network with links to Al Qaeda. The network plotted in secrecy through the late 1990s, following the stated goal of creating an idealized Islamic state comprising Indonesia, Malaysia, Singapore, the southern Philippines and southern Thailand.

- **Activities:** The JI was responsible for the Bali bombings on Oct. 12, 2002, which killed nearly 200 and wounded 300 others. The Bali plot was apparently the final outcome of meetings in early 2002 in Thailand, where attacks against Singapore and soft targets such as tourist spots in the region were considered. In December 2001, Singapore authorities uncovered a JI plot to attack the U.S. and Israeli embassies and British and Australian diplomatic buildings in Singapore. Recent investigations also linked the JI to December 2000 bombings where dozens of bombs were detonated in Indonesia and the Philippines.
- **Strength:** Exact numbers are currently unknown, and Southeast Asian authorities continue to uncover and arrest additional JI elements. Singapore officials have estimated total JI members to be approximately 5,000. The number of actual operationally oriented JI members probably is several hundred.
- **Area of Operation:** Following the regional crackdown against JI, it is unclear how the network has responded. The JI is believed to have cells spanning Indonesia, Malaysia, Singapore, the Philippines and southern Thailand, and may have some presence in neighboring countries.
- **External Aid:** Based on information from ongoing investigations, in addition to raising its own funds, the JI receives money and logistic assistance from Mideast and South Asian contacts, NGOs and other groups, including Al Qaeda.

Kurdistan Workers Party

AKA: PKK

- **Description:** Founded in 1974 as a Marxist-Leninist insurgent group primarily composed of Turkish Kurds seeking to establish an independent Kurdish state in the Mideast. In the early 1990s, the PKK moved beyond rural-based insurgency to include urban terrorism. Turkish authorities captured Chairman Abdullah Ocalan in Kenya in early 1999. He was sentenced to death. In August 1999, Ocalan announced a "peace initiative," ordering members to refrain from violence and requesting dialogue with Ankara. At a PKK Congress in January 2000, members supported Ocalan's initiative and claimed the group would use only political means to achieve its new goal, improved rights for Kurds in Turkey. In April 2002, at its 8th Party Congress, the PKK changed its name to the Kurdistan Freedom and Democracy Congress (KADEK) and proclaimed a commitment to nonviolent support of Kurdish rights. A PKK/KADEK spokesman stated that its armed wing, The People's Defense Force, would not disband or surrender its weapons for reasons of self-defense, however. The PKK/KADEK maintains its capability to carry out terrorist operations. The PKK/KADEK's new ruling council is virtually identical to the PKK's Presidential Council
- **Activities:** Primary targets have been Turkish government security forces in Turkey, local Turkish officials and villagers who oppose the organization in Turkey. Conducted attacks on Turkish diplomatic and commercial facilities in dozens of West European cities in 1993 and again in spring 1995. In an attempt to damage Turkey's tourist industry, the PKK bombed tourist sites and hotels, and kidnapped foreign tourists in the early-to-mid 1990s. The PKK/KADEK did not conduct a terrorist attack in 2002; however, the group periodically issues veiled threats that it will resume violence if the conditions of its imprisoned leader are not improved. It continues its military training and planning.
- **Strength:** Approximately 4,000 to 5,000, most of who currently are located in northern Iraq. Have thousands of sympathizers in Turkey and Europe.
- **Area of Operation:** Operates in Turkey, Europe and the Mideast.
- **External Aid:** Has received safe haven and modest aid from Syria, Iraq and Iran. Damascus generally upheld its September 2000 antiterror agreement with Ankara, pledging not to support the PKK. Conducts extensive fund raising in Europe.

Palestine Liberation Front

AKA: PLF

- **Description:** Broke away from the PFLP-GC in the late 1970s. Later split again into pro-PLO, pro-Syrian and pro-Libyan factions. Pro-PLO faction led by Muhammad Abbas (a.k.a Abu Abbas), currently based in Baghdad.

- **Activities:** The Abu Abbas-led faction is known for aerial attacks against Israel. Abbas' group also was responsible for the attack in 1985 on the Italian cruise ship Achille Lauro and the murder of U.S. citizen Leon Klinghoffer. A warrant for Abu Abbas' arrest is outstanding in Italy. Has become more active since the start of the Al Aqsa intifada, and several PLF members have been arrested by Israeli authorities for planning attacks in Israel and the West Bank.
- **Strength:** Unknown
- **Area of Operation:** Based in Iraq since 1990; has a presence in Lebanon and the West Bank.
- **External Aid:** Receives support mainly from Iraq. Has received support from Libya in the past.

Real IRA

AKA: RIRA

- **Description:** Formed in early 1998 as clandestine armed wing of the 32-County Sovereignty Movement, a "political pressure group" dedicated to removing British forces from Northern Ireland and unifying Ireland. RIRA also seeks to disrupt the Northern Ireland peace process. The 32-County Sovereignty Movement opposed Sinn Fein's adoption in September 1997 of the Mitchell principles of democracy and nonviolence and opposed the amendment in December 1999 of Articles 2 and 3 of the Irish Constitution, which laid claim to Northern Ireland. Despite internal rifts and calls by some jailed members - including the group's founder Michael "Mickey" McKevitt - for a cease-fire and the group's disbandment, the group pledged additional violence in October and continued to conduct attacks.
- **Activities:** Bombings, assassinations and robberies. Many Real IRA members are former Provisional IRA members who left that organization following the Provisional IRA cease-fire, and bring to RIRA a wealth of experience in terrorist tactics and bomb-making. Targets have included civilians (most notoriously in the August 1998 Omagh bombing), the British military, the police in Northern Ireland and Northern Ireland Protestant communities. Since October 1999, RIRA has carried out more than 80 terrorist attacks. RIRA claimed responsibility for an attack in August at a London Army Base that killed a construction worker.
- **Strength:** One hundred to 200 activists plus possible limited support from IRA hardliners dissatisfied with the IRA cease-fire and other republican sympathizers. Approximately 40 RIRA members are in Irish jails.
- **Area of Operation:** Northern Ireland, United Kingdom and Irish Republic
- **External Aid:** Suspected of receiving funds from sympathizers in the United States and of attempting to buy weapons from U.S. gun dealers. RIRA also is reported to have purchased sophisticated weapons from the Balkans. In May, three Irish nationals associated with RIRA pleaded guilty to charges of conspiracy to cause an explosion and trying to obtain weapons following their extradition from Slovenia to the United Kingdom.

Tamil Tigers

AKA: LTTE

- **Description:** Founded in 1976, the LTTE is the most powerful Tamil group in Sri Lanka and uses overt and illegal methods to raise funds, acquire weapons and publicize its cause of establishing an independent Tamil state. The LTTE began its armed conflict with the Sri Lankan government in 1983 and has relied on a guerrilla strategy that includes the use of terrorist tactics. The LTTE is currently observing a cease-fire agreement with the Sri Lankan government and is engaged in peace talks.
- **Activities:** The Tigers have integrated a battlefield insurgent strategy with a terrorist program that targets not only key personnel in the countryside but also senior Sri Lankan political and military leaders in Colombo and other urban centers. The Tigers are most notorious for their cadre of suicide bombers, the Black Tigers. Political assassinations and bombings are commonplace. The LTTE has refrained from targeting foreign diplomatic and commercial establishments.

- **Strength:** Exact strength is unknown, but the LTTE is estimated to have 8,000 to 10,000 armed combatants in Sri Lanka, with a core of trained fighters of approximately 3,000 to 6,000. The LTTE also has a significant overseas support structure for fund raising, weapons procurement and propaganda activities.
- **Area of Operation:** The Tigers control most of the northern and eastern coastal areas of Sri Lanka but have conducted operations throughout the island. Headquartered in northern Sri Lanka, LTTE leader Velupillai Prabhakaran has established an extensive network of checkpoints and informants to keep track of any outsiders who enter the group's area of control.
- **External Aid:** The LTTE's overt organizations support Tamil separatism by lobbying foreign governments and the United Nations. The LTTE also uses its international contacts to procure weapons, communications, and any other equipment and supplies it needs. The LTTE exploits large Tamil communities in North America, Europe and Asia to obtain funds and supplies for its fighters in Sri Lanka.

The Palestine Islamic Jihad

AKA: PIJ

- **Description:** Originated among militant Palestinians in the Gaza Strip during the 1970s. PIJ-Shiqaqi faction, currently led by Ramadan Shallah in Damascus, is most active. Committed to the creation of an Islamic Palestinian state and the destruction of Israel through holy war. Also opposes moderate Arab governments that it believes have been tainted by Western secularism.
- **Activities:** PIJ activists have conducted many attacks including large-scale suicide bombings against Israeli civilian and military targets. The group increased its operational activity in 2002, claiming numerous attacks against Israeli interests. The group has not yet targeted U.S. interests and continues to confine its attacks to Israelis inside Israel and the territories, although U.S. citizens have died in attacks mounted by the PIJ.
- **Strength:** Unknown
- **Area of Operation:** Primarily Israel, the West Bank and Gaza Strip, but the group's leaders reside in other parts of the Mideast, including Lebanon and Syria.
- **External Aid:** Receives financial assistance from Iran and limited logistic support assistance from Syria.