



# ARIZONA NEWSLETTER

## Doctors for Disaster Preparedness

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## THE POOR MAN'S ATOMIC BOMB

Contrary to popular belief, the biggest bang for the buck does not come from nuclear weapons. The cost of killing people within an area of one square kilometer is:

Conventional weapons	\$2000
Nuclear weapons	800
Nerve gas	600
Biologic agents	1

Qaddafi's Bomb might not necessarily be nuclear.

### History

The Libyan chemical plant now in the news was built with the assistance of nations that have been world leaders in the development of chemical warfare -- Germany, Italy, and Japan.

Hitler's secret weapons were cholinesterase inhibitors, tabun and sarin. The Luftwaffe had half a million gas bombs. Other potential methods of delivery included machine gun shells and rockets. Hitler, who had been temporarily blinded by gas during World War I, did not consider using the weapons until 1945, when he no longer had an air force. He may have been deterred by the erroneous belief that the Allies also possessed the secrets of nerve gas. Retaliation with chemicals would have crippled the Wehrmacht's transportation system, which still depended on horses.

The Italians used gas against Ethiopians, and Japan launched more than 800 gas attacks in its conquest of Manchuria in the 1930s.

At the end of the war, the Russians transported two nerve-gas factories to the USSR, before the Germans could destroy them. (See Robert Harris and Jeremy Paxman: *A Higher Form of Killing*, Chatto and Windus, London, 1982.)

In more recent years, Libya has used poison gas against Chad. Egypt is believed to have dropped gas on Yemen in the 1960s. Iraq has used mustard and nerve gas against Kurds and Iranians. The Soviets have used toxins in Afghanistan and Southeast Asia. Eritreans reported that Ethiopians had taken delivery of Soviet nerve gas and had launched several attacks (*Lancet* 7/21/84).

### Delivery Mechanisms

Although recent gas attacks have occurred in the Third World, the industrial world has become increasingly vulnerable due to the proliferation of ballistic missiles. Libya is attempting to buy missiles with a range of 3000 miles. There is a growing world market for aging missiles cast off by the nuclear powers. The range of such missiles is extended if they

carry a lighter chemical warhead, and inaccuracy is less of a problem since gas can be spread over a large area by the wind. Iran, Iraq, North Korea, Libya, Syria, and several other nations possess Soviet Scud B missiles (*Wall St J* 9/15/88).

### Defenses

Troops can be effectively protected with gas masks and carbon-impregnated, chemical-repellent suits to prevent absorption of toxins through the skin, although it is very difficult to work when thus encumbered. After an attack, garments must be cleansed. Pads of fuller's earth can be used to lift off droplets of poison. Soldiers carry spring-loaded syringes of atropine, to be injected immediately if symptoms of excess salivation or dimming of vision occur. (Atropine should be included in your shelter medical kit.)

Swiss shelters are protected against biological and chemical weapons as well as radiation and blast. Among the nations which have upgraded their crisis planning, Israel has begun large-scale drills to prepare civilians for a gas attack.

The most toxic of the nerve gases, sarin, is hydrolyzed by water, and rapidly hydrolyzed by dilute solutions of sodium hydroxide or sodium carbonate to form relatively nontoxic products. Tabun, which has a fruity odor reminiscent of bitter almonds, is quickly hydrolyzed by water. Tabun is destroyed by bleaching powder (chlorinated lime), but gives rise to highly toxic cyanogen chloride.

Evacuation of areas downwind from an attack, protective gear, decontamination, antidotes, and shelters that can be temporarily sealed off are all important for civil defense. And before the delivery vehicle reaches its target, it could be destroyed by strategic defenses (if we had them).

### The Strategic Balance

In 1986, the USSR had between 150,000 and 750,000 tons of chemical weapons and the US 40,000. The Soviets were thought to have 39 storage sites, and the US 10. The Soviets had 20,000 decontamination vehicles, and the US 1,000. About 85,000 Soviet military personnel were involved in chemical warfare, with up to 5 years of training, compared with 9,000 US troops, with a maximum of 6 months training (*Wall St J* 6/12/86). Stockpiles are not accurately known because 1000 tons of deadly gas could be stored in just a few boxcars. Monitoring production is difficult because the organophosphates needed to manufacture nerve gas also are used to make pharmaceuticals (as in Libya?) and insecticides.

## Death by Mail Order

In 1984, *Shotgun News* advertised ricin, available by UPS or air mail. This poison, thousands of times more potent than the nerve toxin VX, can be made from castor beans. Although federal agents quickly shut down this operation, the development of a chemical "Saturday night special" is not technologically difficult, and unlike manufacturing a nuclear weapon, could be done in a garage. Raw materials are readily available, and methods of synthesis can be found in the open literature.

Despite the magnitude of the threat from terrorists as well as from other nations, the US is almost completely unprepared, most of its effort being invested in the EPA's war against chemicals of trivial or unproved danger. Yet defense is possible. Intelligence is the most important aspect. A crisis response team, analogous to the Nuclear Emergency Search Team (NEST), could be created to respond quickly to scenarios such as those presented in *America the Vulnerable: The Threat of Chemical/Biological Warfare*, by Joseph D. Douglass, Jr, and Neil C. Livingstone (Lexington Books, 1987).

## Assessing the Chemical Situation

"In most cases, the estimate is made in the following sequence. The substance is identified, and a preliminary estimate of the method and scale of use is made. The area on the leeward side from the area where the chemical weapon was used is investigated, and the possible distance downwind of dangerous contamination and the estimated time in which this contamination will occur are determined....These forecasted data are used to warn brigade personnel of the collective or state farm and the population.

"After the enemy attack,....all measures must be taken to restore the fighting readiness of the brigades...." (*Handbooks and Aids for Higher Agricultural Institutions: Civil Defense*, translated from the Russian at ORNL, 1971)

## Another Superpower?

According to Chong-Pin Lin of the American Enterprise Institute, China does not accept the balance of terror. The idea of allowing itself to be threatened by another's nuclear arsenal is "totally alien to a Chinese mind....The classical Chinese strategist Sun-tzu said that the best thing, even more important than winning, is to occupy an undefeatable position."

Because the Chinese hide their ballistic missiles, the Soviets could not launch a disarming first strike, stated Paul Godwin of the National War College. Also, the Chinese have a diversified force, with four kinds of land-based ballistic missiles and possibly two nuclear submarines. (Some missiles are available for export to nations such as Libya.)

The Chinese army carries out battlefield exercises designed to prepare for a Soviet attack that might include tactical nuclear weapons. And Chinese civilians are drilled in civil defense. Kazuyuki Hamada, a fellow at the Center for

Strategic and International Studies, said that "once the bells ring, all the people are guided into the shelters. And they have hospital facilities, radiation cleaning facilities, and food stockpiled underground."

If START limits go into effect, the Chinese will have 17% as many launchers as held by any superpower, and the percentage could increase to 30 within 10 years (*Washington Times* 8/18/88).

## Vengeance from the Grave: the Moral Question

If the same moral standards are applied to China as to the US, then many (e.g. American bishops) would say that the Chinese plans to fight and survive nuclear war are immoral.

For a closely reasoned analysis of the moral questions raised by deterrence, defense, and surrender, as well as a perceptive view of the strategic situation, read *A Fighting Chance: The Moral Use of Nuclear Weapons* by Joseph P. Martino, Ignatius Press, 1988.

Martino believes that a defensive arms race would not be a bad thing: "Escalation [in purely defensive weapons] is self-limiting in a way that escalation in offensive weapons is not. Once we get a defense which is *good enough*,...we don't need to increase it every time they increase their *defenses*. No matter how many *defensive* missiles they procure, nor how many antimissile radars they build, our defenses won't be weakened in the least. It is only when they increase their *offensive* capability that our defenses are threatened."

## The Armenian Earthquake

The earthquake in Soviet Armenia, which measured only 6.9 on the Richter scale compared with 8.1 and 7.8 for the back-to-back Mexico City quakes in 1985, claimed more than six times as many casualties and wreaked far greater destruction. Entire towns were destroyed, and two thirds of Leninakan (the second-largest city) and half of Kirovakan (the third-largest) were reduced to rubble. The death toll was estimated to be 100 times as great as a similar earthquake could cause in California. The scope of disaster was explained by shoddy construction: multistory buildings of unreinforced concrete, low-grade masonry, and prefabricated concrete sections hooked together haphazardly (*Washington Times* 12/14/89 -- for the complete article, call Fort Freedom).

The nuclear power plant at Metsamor, Armenia, survived and continued to generate power.

US aid to the stricken area included one of the few remaining Packaged Disaster Hospitals from the US civil defense program.

## Medical Supplies for Your Shelter

One suggested list is available on request from Dr. Orient, or in the February issue of the *Fighting Chance Newsletter* (PO Box 1279, Cave Junction, OR 97523).