Journal of Civil Defense

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The *Journal of Civil Defense* presents authentic information relating to civil defense – to the survival of free government, the United States and peace in the nuclear age. Its aim is public education in this field and service as a forum.

Authors are encouraged to submit manuscripts for consideration by the editorial committee for publication (the *Journal*, as a non-profit organization, pays no fees). Articles, preferably illustrated, should be 500 to 1,200 words in length, slanted to the non-technical reader, and oriented toward the civil defense field. Views expressed in contributions to the *Journal* are those of the authors and do not necessarily reflect *Journal* policy. Material may be reproduced if context is preserved, credit given, and copy sent to the *Journal of Civil Defense.*

WASHINGTON PERSPECTIVE

– Kevin Briggs

Can We Afford a True Defense?

$12-16 Trillion Dollars! That's roughly how much the U.S. has spent on defense programs over the past 50 years, according to a recently released Brookings Institute supported study. Of this, only $12 billion (0.1%) was reportedly spent on civil defense, apart from additional billions that were spent to protect our *leaders.* If true, then my parents who've been married and paying taxes for over 50 years, have likely contributed more than $100,000 to the Defense Department (DOD) during these years. Yet, the DOD only spent roughly $1 per parent per year from my parents' tax payments in directly protecting them from the effects of nuclear war. My parents can thankfully say the $99,900 in "deterrence" tax dollars they've spent have helped to prevent nuclear war. Yet, if deterrence should ever fail, will the $100 total they've contributed toward civil defense through taxes really save them (or for that matter, anyone else)? The obvious answer is: "NO!"

Yet Americans are generally under the illusion that the DOD can actually defend them in some way against intercontinental or sea-launched ballistic missile (ICBM and SLBM) attacks. At a recent children's birthday party, a friend (who has seen the blast shelter we've constructed off our basement to protect roughly 200 of our friends/neighbors) was shocked to learn that there is no government-provided defense against ICBMs and SLBMs. He, like most U.S. citizens, thought we had some way to shoot them down. And today while writing this article, I talked with a new neighbor and showed her our shelter. She too felt there probably was a capability to shoot down incoming missiles, like in the Gulf War, if the military were given some warning in advance. She (like most U.S. citizens) did not realize that the limited capability we have to shoot down theater missiles, as demonstrated during Desert Storm, would not help at all to intercept and destroy ICBMs/SLBMs that would attack the U.S. homeland at much higher velocities. And once she understood that we've had the technology to intercept these high velocity missiles for decades, she openly wondered why no current protection exists. Another neighbor who was listening to this conversation then suggested that it would probably "cost too much" to provide this defense. He was not comforted by the fact that cost, though a factor, was not the primary reason we in the U.S. are unprotected. He found it hard to believe that for many years our leadership has adopted a policy of "mutual assured destruction" (MAD) and that we had an ABM treaty that was a major stumbling block to our testing and fielding one leg of a true defense for our country.

Most of my friends who do not track international or military affairs wonder why I am still concerned about these matters, now that the Cold War "is over." What most of them do not realize is that many traditional factors that have kept the deterrence equation in balance are now crumbling away. The world community is becoming less stable both financially and politically. We are increasingly finding ourselves at odds with Russia and China over such issues as nuclear proliferation to Iran and Pakistan and over international crises brought on by unstable regions like Korea, Serbia, and the Middle East. Economic tremors are further being felt that are merely a prelude to the earthquake we can expect with the international monetary and banking crises. Russia may well turn more hostile toward the U.S. as its central bank's gold reserves recede and its economy continues to spiral downward despite Western loans (whose understandably conditional nature also foment internal and external political rage and conflicts).

In addition, ballistic missiles and other weapons of mass destruction (like chemical and biological weapons) are increasingly available to countries/groups who could use them against the U.S. and who do not appear to be easily deterred. We've only recently seen the ripples from the "Great White Shark" of terrorism (like the Oklahoma City bombing and the ongoing chemical weapons attacks in Japan's subways). Yet we as a nation are swimming in deep waters that are filled with creatures who can attack without warning and cause incomprehensible destruction. Perhaps, you may think I am overstating the case. If so, consider the example of Iraq, who only recently, when faced with sanctions and overwhelming evidence, admitted after many years of lying to the world community that they had developed an incredible stockpile of biological weapons (namely 5,300 gallons of botulism toxin and 158 gallons of anthrax spores) that theoretically could kill billions, but practically **could only kill "thousands or millions"** within the U.S. or overseas, if dispensed as a means of terrorism, revenge, or weapon of war. Should we take comfort in Iraq's claim that it has now destroyed all of these stockpiles? I think not, especially if press reports are true that say the U.S./allied intelligence services didn't discover the location of the germ warfare production plant until Iraq plainly told us where it was (note: it wasn't bombed during the war). Echoes of the phrase "the poor man's atom bomb" ring in our ears as we realize that Iraq's biological warfare program may be but a reflection of other suspected, but undiscovered programs. A **shelter program**, such as exists in Norway, Switzerland, etc., could greatly diminish the effects of nuclear, biological, and chemical attacks against a population.

Yet our defense dollars are still unevenly being allocated to "deterrence" versus "defense" at roughly the historical ratio: $1,000 for deterrence, $1 for "civil defense." Is this how you want your tax dollars to be spent? Do you still want to be held captive to the concept of "assured destruction?" If not, have you taken the time to write or call your Congressmen to ask what is going to be done to uphold their constitutional responsibility to "provide for the common defense?" Note too that the high tech dollars we spend today on offensive weapons of deterrence exponentially lose value (due to system lifespans) versus the expenditure of funds for passive defenses that often retain value over decades and are perhaps the best long-term investment against weapons of mass destruction.

Can we afford a true defense? Perhaps it is a question of little importance if the current lack of civil defense advocacy continues (a natural consequence of meager support of organizations and individuals advocating true defenses – like TACDA and High Frontier). On a personal level, where are you investing your treasures? Many civil defense initiatives lay fallow for want of resources – even ones that could perhaps **turn a profit**. Is your heart truly behind Civil Defense and protecting loved ones? Remember, where your treasures are, there your heart will be also. The situation is not hopeless if those with resources (time, $s, contacts, etc.) and vision act.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

Nuclear weapons scientist Sam Cohen's contributions to American nuclear technology are legend. His calculations demonstrating the effectiveness of the neutron bomb as a weapon for national defense were important in accelerating its development.

Here Cohen reveals a deep-set concern about miniature neutron weapons which pose new and alarming threats to society and challenges to the United States to provide preemptive countermeasures.

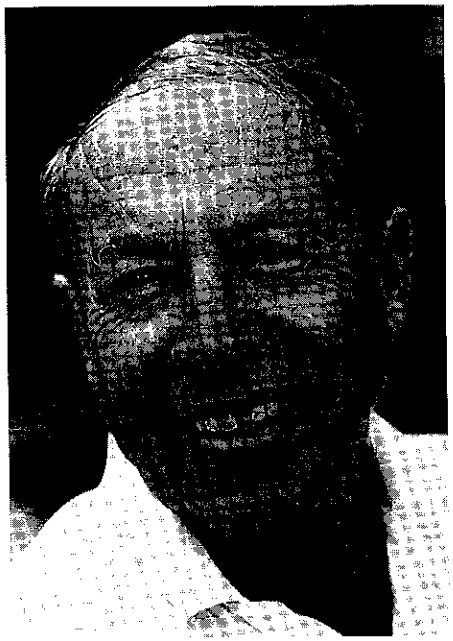
NUCLEAR TERRORISM COVERUP

– Sam Cohen

Since World War II, to a very large extent, U.S. nuclear policy has been guided by arms control objectives. This policy was reflected immediately after World War II when through the United Nations we sought a treaty, the so-called "Baruch Plan," which would place nuclear weapons under stringent UN control – and heaven help any nation attempting to develop these weapons on its own! Primarily due to Soviet recalcitrance, the proposed treaty never emerged, and since that time we have seen an extensive proliferation take place which has yet to stop.

At the beginning, and still today, the expectation of the nuclear arms control community was that new members of the nuclear club would be repeating the original U.S. approach, the most practical being implosion weapons using plutonium, uranium or both. This expectation has been reflected in recent years as the U.S. has assumed that new members of the nuclear club most likely, almost certainly, would first develop plutonium-fueled implosion warheads closely resembling the bomb dropped on Nagasaki – namely, a massive warhead weighing thousands of pounds.

Considering that a half century has gone by since the Nagasaki warhead was detonated and that enormous technological progress, mostly unclassified, has been made over this period, it would seem illogical to make such an assumption. (For example, within 10 years after the war the U.S. had developed a battlefield warhead weighing approximately a hundredth that of the Nagasaki version.) However, when nuclear arms control and proliferation have been involved, logic has operated at minimum levels, and politically emotional mindsets have dominated the scene. U.S. intelligence estimates that Iraq, North Korea and Iran might be able to produce one or two, maybe three, nuclear warheads originally have been mainly spun from whole cloth. But to admit to the possibility that the numbers might be significantly higher would have been politically unacceptable. And to admit to the possibility that the warheads might be sufficiently compact to pose a real terrorist threat was equally unacceptable.



Sam Cohen

Sufficiently compact to pose a real terrorist threat

Not too long into the nuclear age, scientists began to wonder about the possibility of a nuclear device devoid of fissionable materials. Specifically, the concern was over the development of a "pure fusion" explosive where the fuel would consist of the heavy isotopes of hydrogen, deuteriuim and tritium (which does not occur in nature and must be pro-

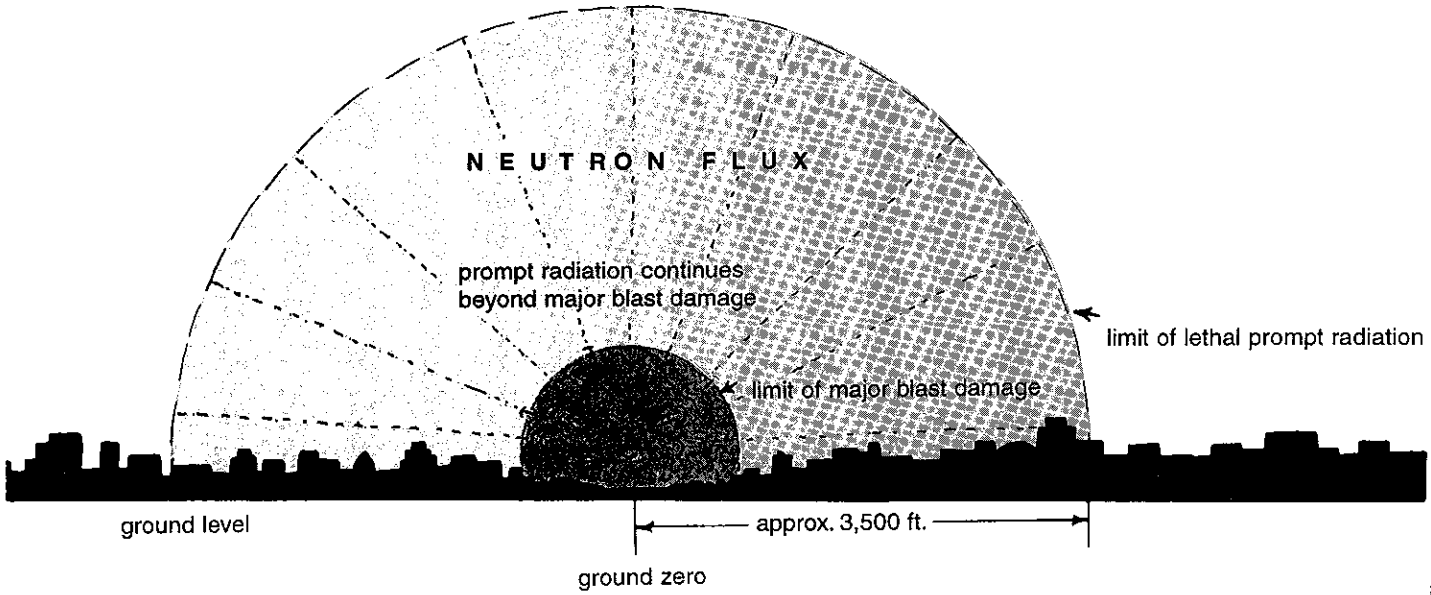


Figure 1. Illustration of typical neutron bomb explosion at optimum altitude (300-400 feet)

duced in nuclear reactors where lithium is bombarded by neutrons). Were such devices feasible, a new class of nuclear weapons could exist which could have an extremely disturbing terrorist potential.

Since only very small amounts of tritium (on the order of a gram, or even less) would be required, as compared with kilogram amounts in plutonium-fueled weapons, these weapons could be extremely cheap and therefore could be produced in very large numbers.

As for the mechanics of such devices, the challenge was to use a mass, a large mass, of high explosive to compress a mixture of deuterium and tritium and heat it to a degree where thermonuclear reactions would take place. Such a device could be used for physically destructive purposes or, vastly more effectively, for producing radiological damage to humans via the neutrons produced by the deuterium-tritium reactions. In effect, they would be mini-neutron bombs having yields on the order of a hundredth those developed by the U.S., but lethal radii (against people) roughly a half of a fission-fusion neutron bomb.

Mini-neutron bombs

In the early 1950s, the Soviets initiated a high explosive-driven pure fusion program, reporting in 1957 that significant progress had been made. Shortly after that, open technical reporting ceased, but a few years later Red Army Colonel M. Pavlov wrote an article in the prestigious journal *Red Star* giving a full account of the military effects and meanings of such a device, an account which conformed almost precisely to what I had been giving in secret when briefing U.S. government agencies on pure fusion neutron bombs.

In the late 1950s, the U.S., at the Livermore nuclear weapons laboratory, began its own pure fusion program, code-named "DOVE" after the Dove of Peace. However, when the military and terrorism implications of this program became known in Washington, the classification of the program was upgraded to TOP SECRET with highly restricted access, which excluded me from knowing about a project that I was instrumental in pushing. At the basis of this decision for such secrecy were the proliferation and terrorist implica-

(Continued on page 8)

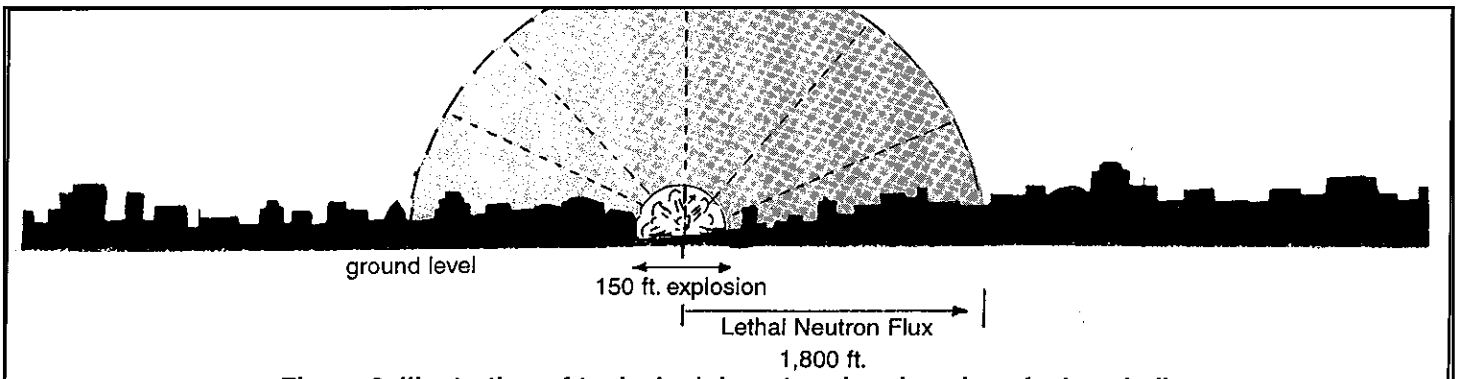


Figure 2. Illustration of typical mini-neutron bomb – size of a baseball

tions. However, to the relief of Washington arms controllers, the DOVE program failed, and it was possible in 1968 to consummate the Nuclear Non-Proliferation Treaty (NPT) without including tritium in the list of nuclear materials to be monitored by the United Nations International Atomic Energy Agency. There were a few, including myself, who warned about excluding tritium from inspection by the IAEA, but Livermore's failure was seized upon to mean that in the foreseeable future pure fusion weapons would not be feasible. In the indefinite extension of the NPT agreed upon last April this assumption still held sway, even though there was now compelling evidence to show that it was wrong and extremely dangerous.

* * *

A couple of years ago disturbing statements on advanced small, very low yield nuclear warheads began emanating from Russia. For example, Russian General Y. Negin claimed his country had developed a low-yield nuclear explosive "in which a doubling of yield is achieved with a hundredfold reduction of weight compared to existing weapons." Without getting into technical specifics, it is pointed out that to build such a nuclear fission device as Negin depicts one would need a warhead that weighs much less than the amount of plutonium required to produce an explosion. The only conclusion to be drawn regarding this claim is that he was talking about a warhead using a fusion fuel where gram, not kilogram, amounts would suffice. Furthermore, he obviously was talking about a device that used an explosive trigger mechanism drastically different from the conventional high explosives used previously in pure fusion experiments. He was talking about a nuclear device which could weigh on the order of pounds, not tens of pounds, which conforms in weight to the most advanced fission warheads developed by the U.S.

New compelling evidence

As another example, to give credence to Negin's claim, Russian political official Evgeny Korolev boasted, in the *London Times,* that a "bomb the size of a grenade could blow a ship out of the sea." Like Negin he was referring to a warhead weighing perhaps several pounds, a seemingly incredible claim considering the weight of even the smallest fission warheads.

Still another example, and equally disturbing, was a public comment by Russian Minister of Atomic Energy, Viktor Mikhailov who, apparently referring to these mini-devices, said: "you can drop a couple of hundred little bombs on foreign territory, and the enemy is devastated. The armed force dropping these weapons, in turn, would suffer "no consequences." In a subsequent interview in the Russian newspaper *Pravda,* Mikhailov strongly hinted that these "little bombs" were mini-neutron bombs designed to kill enemy troops with radiation, leaving buildings in the vicinity of the burst standing. While not actually admitting that Russia had developed these weapons, he warned that they "would appear by the year 2000."

New explosive materials

What might this new explosive triggering device be? For obviously, some new explosive material was at hand that bore little, if any, similarity to the conventional explosives developed and refined over the years to trigger fission weapons and, unsuccessfully in the U.S., trigger a fusion weapon of any size and weight.

Within the last few years, articles have appeared in the U.S., European, and even Russian media dealing with an exotic new material known as "Red Mercury" which had been developed by the Russians and allegedly held properties capable of producing far more efficient nuclear fission warheads than the conventional explosives developed thus far. This new material, a mercury antimony oxide, allegedly, when properly detonated, would release vastly more energy per unit of weight than the most advanced chemical explosives. Apparently it conformed in nature to a new class of explosive materials based on technology known as "ballotechnics." Not only was this ballotechnic material far more energetic than normal conventional explosives, but it also didn't behave like normal explosives. Instead of producing a powerful blast wave and emitting a cloud of smoke, it stayed reasonably intact in either solid or gel form. These peculiar properties seemed to hold the key for producing the pressures and temperatures required to ignite a very small mass of deuterium and tritium – in other worlds, capable of producing a mini-neutron bomb.

At the same time, in discussing Red Mercury, these articles revealed that a massive smuggling ring had emerged where the material was being sold around the world to a number of countries, some of which were recognized terrorist nations. For example, when the UN nuclear inspection team went into Baghdad after the Gulf War voluminous files were discovered indicating transactions between Russia and Iraq. (Curiously, the final UN reported contained no mention of this. Why? When one UN investigating official was asked about this, his reply was "Why don't you guess?")

Within Russia, it emerged in the press that no less than Boris Yeltzin had officially sanctioned these sales, signing Secret Directive No. 75-RPS which authorized a Russian company to "manufacture, purchase, store, transport, deliver, and sell for rubles and foreign currency 'red mercury' in amounts up to ten tons a year." However, this order was rescinded after a storm of public criticism. But there is no evidence that the smuggling of this material has stopped.

Is it really true that Red Mercury or some ballotechnic variant can produce ultra-lightweight pure fusion devices? I believe so. But the U.S. government seemingly does not believe it and has officially stated so. However, this opinion has been contradicted by Russian nuclear weapons scientists and by U.S. scientists at Los Alamos as well.

Red Mercury research

One prominent Russian nuclear scientist who had been engaged in Red Mercury research was queried, in secret, by a British journalist and former nuclear weapons designer. When asked about my claims that Red Mercury could be used to make a pure fusion device his answer was "Yes." When asked if it already had been developed in Russia his answer was "Yes." When pursued with further questions, he became very nervous

and stopped the interview, saying it had become "too dangerous."

In the *Los Angeles Times an* article recently appeared (June 23, 1995) which, to put it mildly, was shockingly revealing – not only in terms of its contents but in revealing how far the U.S. Government will go to cover up a matter deemed to be of the most sensitive security importance. In the article was an accounting of U.S.-Russian collaboration on pure fusion explosive research. When asked by a *Times* science reporter about government approval of this collaboration, Steven Younger, director of the Los Alamos Center for International Security Affairs, stated that "In the early days our government was not exactly enthusiastic about these interactions." However, he added, "we decided we were not going to ask permission." He went on to say that as the principle U.S. contact for the Soviet weapons designers he had visited Arzamas-16 (Russia's most prestigious nuclear weapons laboratory) a dozen times since 1992, more often than anyone without a Russian "secret" clearance. He recalled, while at Arzamas-16 he had warmed his hands with a piece of copper shrapnel still glowing from the explosion of an experimental fusion device. He also stated that, a few months later, Russian scientists from Arzamas-16 traveled to Los Alamos to test a high explosive fusion device.

Amazing! Can anyone imagine such things going on during the Soviet regime? It's almost impossible to imagine this going on now, but apparently it is.

As to the terrorist implications of these mini-neutron bombs, the number of horror scenarios that one can concoct border on the infinite. As one example, assume that one of these devices, roughly the size of a baseball, were to be detonated across the street and a couple of hundred yards from the White House while the president, Vice President and the staff were at work. Within a small fraction of a second almost everyone occupying the White House complex would have received lethal doses of neutrons of such intensity that within minutes most of them would be incapacitated and die of shock. In addition, there would be an electromagnetic pulse effect (neutron bombs make very efficient EMP generators) which would render central Washington electronically dead.

And this is only one bomb going off. Imagine what dozens or hundreds of these bombs strategically detonated around the country could do?

As to this impending (or even existing) threat, what should the U.S. do to cope with it? Needless to say, no U.S. Government agency is prepared to do very much, if anything at all. Perhaps, one hopes that the U.S. intelligence community, despite the official government denial, is exploring ways and means to prevent such horrible occurrences.

No U.S. Government agency is prepared to do very much

However, considering such tragedies as the World Trade Center and Oklahoma City bombings, and the failure after 17 years to catch the notorious Unabomber, it is difficult to be too sanguine. However, if the government is willing to reveal the facts of this "unthinkable" matter, so that public opinion can be brought to bear, perhaps something might be done. But considering what was done by the government about civil defense when a realistic threat of nuclear war existed, again it is difficult to be too sanguine.

Civil defense could have worked to a very high degree had the political courage existed to implement it. So could defense against terrorist mini-neutron bombs were the government and the people willing to seriously consider the threat. ❑

Paris Preparedness Show Attracts Thousands From Around the World

The upcoming October 25-27 7th International "Alarmes Protection Securité" exhibition in Paris, France promises to go beyond its well-earned reputation as Europe's No. 1 safety show this year.

With well over 100 exhibitors and expected crowds that will generously surpass those of previous years – over 6,000 visitors from 50-or-so countries – the 1995 exhibition extravaganza is projected to set a new high in safety displays and emergency management.

Add to this the refreshing October weather along the historic Seine, the seductive Paris panoramas, the fabulous cuisines and an unexcelled entertainment fare and you have a slice of paradise that's hard to pass up.

Further information may be obtained from:

Blenheim
70 rue Rivay
925223 Levallois Perret CEDEX
France

Tel: 33 (1) 47 56 52 66
FAX: 33 (1) 47 56 08 18

(See also exhibition announcement – page 21.)

CD SCENE

NOW IN RUSSIA: "EMERCOM"

Civil Defense may be a matter of indifference and neglect in many Western countries, but this is not so in what we call the "Eastern Bloc."

For one instance, Russia in January 1994 created "EMERCOM" a new and wide-ranging concept of civil defense which focuses on "a rapid and efficient response to natural and man-made disasters."

Careful analyses of past disasters – in particular the 1988 nuclear disaster at Chernobyl – have worked to gear Russian civil defense to a set of practical responses to disasters that work in concert to provide a credible organization.

The *International Civil Defence Journal* for July 1995 spells all this out and a good bit more. It quotes EMERCOM as follows:

> Providing aid and a rapid and efficient assistance to the victims of natural and man-made disasters or other crises is one of EMERCOM of Russia's main tasks, and one that is not considered to be limited to the boundaries of our country....

❑

GREENPEACE AND FRANCE IN STANDOFF ON FRENCH NUCLEAR TESTS

France's scheduled nuclear tests at Mururoa Atoll in the South Pacific are cause for widespread disapproval, not only in the South Pacific countries, but world-wide, even in France itself.

The tests are scheduled to take place beginning in September 1995 and ending in May 1996. Eight tests are planned for this period, in plenty of time for France to sign the International Test Ban Treaty in late 1996 as planned.

However, objections to the tests are mounting and go well beyond Greenpeace. Australia, New Zealand and other South Pacific countries want no testing in their areas. And protests also come from Germany, Italy, England and France itself. French Premier Jacques Chirac, heir to General Charles De Gaulle's tough program of French preparedness, is firm in his commitment to go ahead with the tests. This in spite of threatened boycotts of French exports and general embargoes.

The current Greenpeace protest ship, *Rainbow Warrior II,* now in the Mururoa Atoll area, was boarded by French military troops seeking to discourage its further presence. Arrests were made. Two crew members were injured. This was reminiscent of a similar incident 10 years prior to the current one when *Rainbow Warrior I* – which also was objecting to nuclear tests – was sunk in the Aukland, New Zealand harbor by French intelligence agents.

The situation does not appear to be working toward a solution. Two other Greenpeace boats are now close to Mururoa Atoll. Other actions include the temporary recall of Australian and New Zealand ambassadors from France.

❑

DDP MEETING IN OREGON SCORES A "BIG SUCCESS"

The 13th annual meeting of Doctors for Disaster Preparedness held in Grants Pass, Oregon August 4-6 attracted over 150 participants and was rated a "big success" by its promoters.

Speakers included Dr .Edward Teller, Dr. Conrad V. Chester, Cresson Kearny, Sam Cohen, Dr. Michael Baker and Dr. Arthur Robinson.

Special emphasis was placed on terrorism and recent examples of it in France, Japan and the United States.

❑

PEROT FOR PRESIDENT IN '96???

Ross Perot looks like a serious candidate for President in 1996, and a 3-page article by Kenneth Walsh and Jennifer Seter in *U.S. News and World Report* looks at a Third Party effort in 1996. Perot's party – "United We Stand" – is now organizing, and prospects for a serious campaign that will put Perot in the White House are starting to look promising.

With the Republicans and Democrats taking pot shots at one another and suffering from the wounds inflicted there appears to be a much better opportunity in 1996 for United We Stand as a third party to be successful.

Perot's first salvos at the two traditional parties are aimed primarily at the economy, at lobbying reform, at our trade difficulties, and on our relations with Viet Nam.

Although Perot's criticisms of these and other deficiencies look good vis-à-vis the positions of other candidates, another question area needs to be explored: that of preparedness against the possibility of modern warfare involving the United States. Where does Perot stand on preparedness against attack by modern weapons of mass destruction – missiles? Honest answers could make or break him.

The problem of defenses against missile attack is one that needs to be very seriously addressed, explored, and provided with sure-fire solutions.

Support for Perot rests also – and mainly – on his ability to provide a safe America through known measures of hard-core national defense against modern weapons of war – and his rhetoric devoted to these assurances.

❑

RUSSIA GETTING U.S. HELP IN WEAPONS RESEARCH?

By donating millions in aid to the Science and Technology Center in Moscow, the United States may be contributing to Russian research on nuclear weapons and new nerve gas weaponry. So contends a study being prepared by the General Accounting Office (GAO).

This according to a story by staff reporter Thomas E. Ricks of the *Wall Street Journal.* The $46 million already received and the $90 million more scheduled to follow are, according to GAO, meant to help stop the flow of Russian nuclear weapons scientists and technicians to Third World countries attempting to promote meaningful nuclear programs.

Reports of Russian scientists being hired by nuclear-ambitious countries have surfaced previously. Other reports – of intercepted plutonium shipments and progress in biological-chemical-nuclear research in these countries etc. – have also appeared in the media.

Proliferation is no longer in the rumor category but is accepted fact.

ALABAMA SENATORS SPEAK OUT

Earlier this year the *Decatur Daily* newspaper (Alabama) pointed out that the two Alabama U.S. Senators said that a recent poll by the American Defense Preparedness Association means that a system of U.S. defense is required.

The poll showed that 90% of Americans *want* missile defense.

"The poll," said Senator Richard Shelby, "points to serious discrepancy between reality and perception regarding our national defense against missile attacks."

Serious discrepancy between reality and perception

And Senator Howell Heflin, also of Alabama, observed:

"With the instability...and the spread of ballistic missile and nuclear technology, the possibility certainly exists that the U.S. may face this type of danger in the future. Just recently we heard reports that Pakistan is building its own nuclear-weapons system, that North Korea is developing a system and that Iran may be only five years away from having its own nuclear weapons."

If the country were to take the threats seriously and enter into an anti-missile program the "overwhelming majority" of the work would be done in Huntsville.

❑

TACDA2000 – ON LINE!

As reported in the July 1995 *TACDA Alert,* TACDA's staff coordinator Dianne La Croix is now active in Internet and spreading the word on TACDA's mission of preparedness for disasters of all kinds. Internet – or AMERICA ON LINE as it is more properly called – has a working membership of 3 million.

Ms La Croix's Internet (AMERICA ON LINE) signature is:

TACDA2000@aol.com. (Dianne La Croix).

Internet contacts are a daily affair, and recommendations for input, suggestions, etc. are invited.

In addition to Internet, Ms La Croix may be contacted at TACDA headquarters (phone: 904-964-5397 or FAX: 904-964-9641).

Donated Supplies

Agencies that provide help during disasters or emergencies can get new, donated supplies, through a nationwide program. Available materials include maintenance supplies, clothing, shoes, building materials, paper products, personal care items, office supplies, and toys and games. The goods are donated by major corporations to a not-for-profit called NAEIR, the National Association for the Exchange of Industrial Resources. Recipient groups pay $645 annual dues, plus shipping and administrative fees, but the merchandise itself is free. NAEIR says member groups receive an average of $7,000 worth of new materials a year, picking what they need from 300-page catalogs issued every ten weeks. All first year members are covered by a moneyback guarantee. Government agencies must possess 501 (c) (3) nonprofit status to qualify for this program. For a free information, phone NAEIR at 1-800-562-0955 or fax a request on agency letterhead to 1-309-343-0862.

NCCEM Region IV Workshop Decatur, Alabama

– TACDA Report

Decatur, Alabama's "Holidome" Holiday Inn provided the sumptuous and friendly locale for the 1995 Workshop of the National Coordinating council on Emergency Management (NCCEM) July 16-18. The inspiring program included speakers from across the nation, and workshop host J. Howard Proctor was complimented by participants for his outstanding job of organizing the workshop and coordinating its many activities from start to finish.

NCCEM Workshop host J. Howard Proctor, Emergency Management Director for Decatur-Morgan County.

After a Sunday (July 16) golf tournament and opening reception the formal program took place on Monday and Tuesday, July 17th and 18th.

Among the special presentations was a session moderated by Alabama emergency management director Lee Helms with directors of emergency management offices from the Region IV states – or their representatives.

Focal Point: Exhibit Area

The NCCEM Region IV exhibit area featured 15 special exhibits including the Sandbagger Corporation of Wauconda, Illinois, EVAC ONE of Emerald Isle, North Carolina, Ferguson-Harbour, Inc. of Hendersonville, Tennessee and American Signal of Mequon, Wisconsin.

Of special interest was a new exhibit – DTN Weather Systems of Harpersville, Alabama. It gives the local (and state, etc.) emergency management office instant information on weather developments, temperatures, etc. For instance, the emergency management office is advised by a special screen the location and characteristics of approaching storms.

(For information contact Richard Crumpton, DTN Weather Systems, P.O. Box 160, Harpersville, Alabama 35078 – phone: 1-800-610-0777.)

Cost of "start-up" $295. Monthly fee: $64.

NCCEM region IV states are:

Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina
Tennessee

A special workshop feature was the awards luncheon on Tuesday, July 18th.

Luncheon speaker was America's veteran war correspondent Charles Wiley (a frequent speaker at TACDA seminars). Wiley has covered 11 wars in years past, has reported from over 100 countries, and is in constant demand as a celebrity speaker by civic, professional and political organizations across America and abroad. Wiley hails from the prestigious Accuracy in Media Speakers Bureau.

In his address to NCCEM Region IV Wiley focussed on preparedness for disaster and the need for putting a strong spotlight on organizing the local, state, regional and national nuts and bolts of meaningful response – and making this a matter of immediate implementation when it is called for in a disaster situation. As a prominent member of the American media Wiley challenged the media "to become part of the solution, not part of the problem" and to support emergency management by passing on timely information as needed.

Dave Jernigan of the Federal Bureau of Investigation spoke on "Recovery After Terrorism."

"I see this great country slipping, slipping, slipping," stated Wiley and stressed his contention that advocacy journalism embraces the wrong premises and produces the wrong answers. "The country can do anything it decides to do," he emphasized.

Other speakers also had major impact. Banquet speaker on Tuesday was Col. Robert Reed, Director of Emergency Administration and Planning at the University of North Texas who addressed the workshop on "Recovering Our Attitudes."

Steve Schildecker, Executive Assistant at the Georgia Emergency Management Agency reported on planning for the 1996 Olympics in Atlanta (with events farmed out to other cities as well).

Coordinating the events of the workshop was the friendly and helpful staff of the Decatur-Morgan County Emergency Operating Center. The annual meeting of NCCEM Region IV was held in the impressive Decatur-Morgan County Emergency Operations Center.

Entertainment was a feature of the workshop. At the Sunday reception the "Sophisticated Swingers" offered inspiring music. And at the Monday evening fish fry the "Free Country" country band held forth with equally popular renditions. Both bands are composed of senior citizens and are popular entertainers in the area.

At the Opening Ceremonies, TACDA's staff coordinator Dianne La Croix sang "God Bless America" to give the workshop an inspiring send-off.

All-in-all the Region IV NCCEM Workshop was a remarkable success. Comments to that effect came from all those attending.

The 1996 Region IV NCCEM Workshop will be held in Burlington, Kentucky. ❑

Red Cross Interview

Workshop host J. Howard Proctor arranged for a special TACDA interview with guest speaker Armond T. Mascelli, Operations Director for the American Red Cross National Headquarters in Falls Church, Virginia. (Mr. Mascelli is a veteran American Red Cross executive with wide on-the-spot experience in disasters world-wide.)

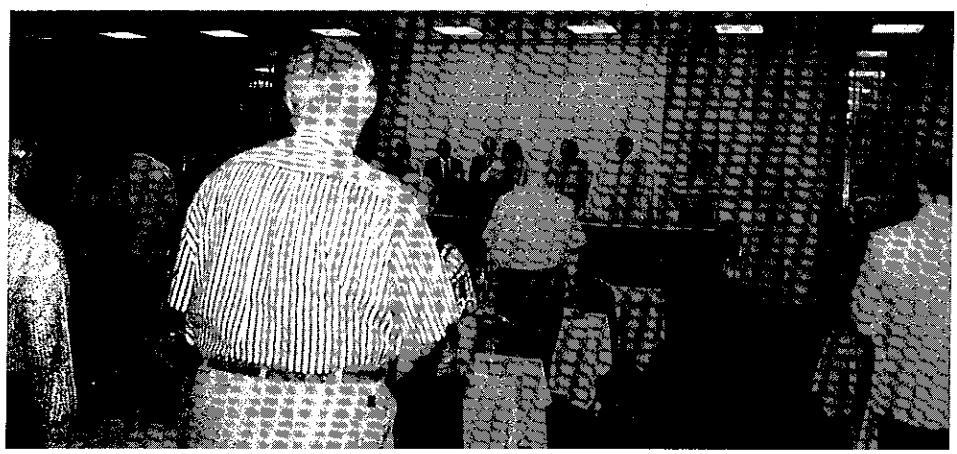
In his workshop interview Mascelli underlined the role played by the Red Cross staff and volunteers in contending with disasters, in particular the new requirements imposed by terrorist attacks such as that in Oklahoma City last April.

The Red Cross Headquarters, said Mascelli, works closely with FEMA and would occupy space in the FEMA Emergency Operating Center at Mount Weather, Virginia in a disaster that required its use. In responding to disasters the Red Cross depends on 80% volunteers. In wartime the Red Cross supports the Federal Government and its military operations. 90% of the efforts in disaster work focuses on logistics.

What is new on the disaster response horizon, said Mascelli, is a sudden deep concern about terrorism. This comes as a result of the Oklahoma City bombing. A new system of Red Cross disaster response planning is one major result. The problem assumes a global aspect. "It's a whole new ball game, which includes speeded up response times," Mascelli pointed out.

As for nuclear warfare possibilities, he said, there has been a de-emphasis with the dissolution of the Soviet Union, but the possibility exists and is not discarded by the Red Cross. The full spectrum of disasters needs to be kept in mind.

In all its disaster work, stressed Mascelli, the Red Cross maintains a close working relationship and the full support of government.



Opening ceremonies on Monday, July 17th.

View of one part of the NCCEM Region IV exhibit area in the Holiday Inn "Holidome."

Lt. Colonel Joseph T. DePaolo, CAP is a veteran of over 40 years service with the Civil Air Patrol. He has dedicated the last 20 years to "Aviation Disaster Planning." An FAA Academy-trained instructor, he has also attended the National Civil Defense Staff College, the CAP National Staff College and is a graduate of the Air Force Squadron Leadership School and the Air Force Air Command and Staff School.

ANGELS IN THE AIR

State and Regional Disaster Airlift

Lt. Col. (ret.) Joseph T. DePaolo, CAP

After a few days of warning the hurricane hit the Gulf Coast of the United States with all the fury that winds of over 120 miles an hour and torrential rain can bring. Its name is not important. Its effect on the coast *is* important. Those that heeded the warning of the National Weather Service left. Those that did not leave witnessed the destruction that emergency managers call a "natural disaster."

A new media term has now evolved that response organizations are learning about, and that is "Electronic News Gathering" (ENG).

This is the term that describes TV cameras in helicopters or airplanes flying over disaster areas. It brings the full impact of what nature has wrought into American living rooms across the country. We see dramatic scenes of destruction only duplicated by Hollywood.

Suppose you live in a small town located near the coast. The storm rolls across your town uprooting trees, tearing down signs, tearing off roofs (and worse) and roars across the local airport destroying aircraft left there in tie-downs. There is only one small local hospital, and there are many injured. Power lines are down throughout the town. The hurricane leaves behind a scene like that of a horror movie.

Pilots and plane owners are a special breed of people, usually more than willing to help anyone in need. They are, to be sure, "Angels in the Air." On wings or rotor blades – whatever keeps them up. This response cannot be accomplished by pilots who just run out to the airport, jump into their aircraft and fly off hoping somehow to help someone, somewhere. There must be *forethought, planning* and *training.* The time to train and prepare disaster responders is *before,* not during, an emergency. Organizations and units that train and prepare before disasters work much better than those that are just "thrown together" at the moment of an emergency.

Today, because of experience in past disasters, we have a plan for the use of General Aviation – and all of its resources – its "air assets." The plan's name is "State and Regional Disaster Airlift" (SARDA), and it is published by the Federal Aviation Administration (FAA) as "Advisory Circular 00-7C." SARDA is not just a "war" response program. It is a "disaster" response program.

This advisory circular calls for every state to develop plans to use all of the General Aviation resources, including aircraft, pilots, airports, mechanics, etc., within the state to mitigate disasters or emergency situations whenever a disaster or state of emergency is declared by the governor of that state. Usually the Director of Aviation for that state is designated as "State SARDA Director."

ABBREVIATIONS

AC	– Advisory Circular
CAA	– Civil Aviation Authority
CAP	– Civil Air Patrol
CASF	– Civil Aeromedical Staging Facility
ENG	– Electronic News Gathering
FAA	– Federal Aviation Administration
FEMA	– Federal Emergency Management Agency
OCD	– Office of Civil Defense
SARDA	– State and Regional Disaster Airlift

It is very important that the state SARDA Director work very closely with the state Office of Emergency Management because it is that office which provides the missions that will be flown by SARDA forces. According to the Advisory Circular most SARDA planning is focussed around the Civil Air Patrol. For this reason, the CAP Wing Commander for that state is usually designated as "Assistant SARDA Director." This gives all SARDA planning a trained emergency organization around which it can form a base.

Many disasters, be they natural or man-made, cause widespread destruction. For example, roads can

be destroyed, washed away or strewn with debris, making them unusable for long periods of time. Bridges, railroads and waterways can be affected the same way. And so on.

Unless a community has enough resources whereby it can depend upon itself to recover from a disaster (and very few do) it must plan on other nearby communities and/or outside assistance for help. The question then becomes: "How to get help and how long will it take?" With other avenues of response probably blocked, there is one avenue that is usually open: the skies above. This may be the only path available.

The United States has the finest "General Aviation" resources of any country on earth. 1993 figures indicate 184,400 aircraft, which account for 98% of the aircraft in America. Over 665,060 pilots of all types, which include 283,700 private pilots, 143,000 commercial pilots and 103,500 student pilots. On the ground there are 18,317 airports of which 17,600 are listed as "General Aviation Airports," and over 5,000 heliports.

As an example of aviation-minded individuals helping others, consider the Civil Air Patrol (CAP). CAP is the emergency service organization for general aviation. It was formed in 1941 by pilots and aircraft owners watching the world around us being torn apart by war and believing that the light plane could be of use before, during and after the war. The war record of the Civil Air Patrol is something those of us in CAP are very proud of. After World War II CAP was incorporated by Congress, and in 1947, when the United States Air Force came into being, CAP was chartered by Congress as an "Official Auxiliary" of the Air Force.

It was the Cuban Missile Crisis and a resurgence of civil defense activity in the early 1960's that brought to light the use of all of General Aviation (including the CAP) to mitigate and respond to disasters. It was a time of heightened national "emergency preparedness." Plans were coordinated between the Office of Civil Defense (OCD), the Civil Aviation Authority (CAA) and the U.S. Air Force. In April 1964 the CAA, which had the regulatory powers, published the first Advisory Circular for "State and Regional *Defense* Airlift" planning. In August 1987, the Federal Aviation Administration (FAA), which took over from the CAA, published Advisory Circular (AC) 00-7A titled "State and Regional Disaster Airlift (SARDA) Planning." This guidance calls for every state to develop plans to utilize general aviation to help mitigate disasters. The Federal Emergency Management Agency (FEMA) is presently working on plans to use these resources also.

Because of the flexibility of aircraft, including helicopters, there are many missions that can be accomplished, including: airborne radiological monitoring, courier and light transport flights, medical support, cargo and logistics airlift support, operation of "air needs" (for recipient and shipment of disaster supplies, equipment and personnel), aerial photographic and reconnaissance flights, aerial control, direction and surveillance of surface traffic, damage estimates and evaluations, airborne communications and relay of ground communications, airborne public address missions, patrol and surveillance of restricted areas, and search and rescue – to name a few.

Take for example the reassuring value of a single aircraft or helicopter circling over a disaster area. If all the roads are blocked, chances are that communications are also out or at least obstructed, making damage assessment and response difficult to say the least.

"Are we alone in this or will help come?"

People ask "Are we alone in this or will help come?" That single aircraft can mean a lot to an awful lot of people, but mostly it can mean that someone is there, looking, reporting, sharing the storm's effect on everyone below. The radio in that aircraft can be heard far and wide. The call can go out to the state and to many organizations that can help.

To explore a little deeper into one area – medical support – suppose we look back at the beginning of this story and return to the small town hit by a hurricane. All roads in and out are blocked. I mentioned that aircraft left in tie-downs were destroyed, but this airport could be made serviceable in a very short time, perhaps in only an hour. Even if it were not, we could look for "alternate landing sites" – a straight stretch of highway, a country road, a large open field, for examples. Into one of these could be brought an emergency medical facility called a "Civil Aeromedical Staging Facility" (CASF). This airborne medical assistance is contained in a plan I call "Disaster Circus" because of its mobility and the tents under which it would operate. It is a total civilian concept for a service which can only be provided by our own military. This is but one example of something that, with proper planning and training, SARDA forces can accomplish.

Pilots and aircraft owners should prepare themselves for disasters, recognize those types that occur in their areas (tornadoes, hurricanes, earthquakes, floods, or whatever) then make plans to react when one occurs. Some hazards can strike without notice, and there is not much we can do about that. But there are others for which we get some warning. We need to make sure that the airports where the aircraft are based have current phone numbers for owners and pilots. There are some pilots that do not want to join or be part of the Civil Air Patrol, but all of them should know about it and be prepared to help if asked.

It was during the Vietnam War that aeromedical evacuation came into the public eye. The pilots that flew "Dustoff" flights were truly "Angels in the Air" as many a GI will swear to, I am sure. The efforts of these pilots have not gone unnoticed.

It seems that in this day and age, if an emergency manager is not a pilot the use of general aviation is not thought of until those TV helicopters start showing everyone across the country scenes that these emergency managers should have seen much earlier. This airborne news gathering has had a very beneficial effect. It has made emergency managers aware of the fact that we are experiencing many disasters of significant magnitude – floods, hurricanes, tornadoes, earthquakes, snowstorms and many others – all requiring *prompt* response and recovery.

Every emergency manager needs to know all the resources that are available to mitigate and respond to disaster. These resources should certainly include the "air assets" which General Aviation can provide. The emergency manager must know how to contact them and how to use them.

When disaster strikes he can then set free his "Angels in the Air." ❑

Samuel Cahan, as a retired New York City Fire Chief, looks back on years of dealing with fire and explosion emergencies. Chief Cahan's career also includes professional service as a port security officer with the United States Coast Guard Reserve – and ongoing involvement with the American Society of Safety Engineers.

AMMONIUM NITRATE DISASTER

TEXAS CITY, TEXAS APRIL 16, 1947

– Samuel Cahan

April is a cruel month for disasters involving ammonium nitrate explosions. The ammonium nitrate involved in the bomb that blew up the federal office building in Oklahoma City, April 19, 1995, had similar, but even more disastrous ramifications for Texas City, Texas on April 16, 1947 – a half-century earlier and almost to the day.

468 deaths and over 2,000 injuries

On the docks of Texas City that fatal day, the blowing up of an ammonium nitrate-laden ship set off a chain of explosions and conflagrations that resulted in 468 deaths and over 2,000 injuries. The 27 firefighters who responded to the initial alarm were all killed by the explosion. The blasts rocked surrounding regions for 150 miles. Nearby workers streaming from buildings had blood gushing from noses and ears, the result of concussions. Survivors within buildings suffered from glass and splinter wounds and those outside, from multiple injuries from the blast effects. Many of the deaths were caused by head injuries, many others suffered ruptured eardrums.

In the heart of the town one mile away, structures sustained irreparable damages. Windows were blown out of every building and many doors blown off hinges by the blast. In the business district, ceilings collapsed and the newer buildings cracked from end to end. Freeways and causeways were blocked by frantic Texas City residents working in nearby Galveston, as they rushed home to help.

Like President Bill Clinton in the Oklahoma City disaster, then President Harry Truman ordered every Government agency to assist and cooperate in relief activities. Truman, too, invoked the help of the Deity, asking God to "lighten the burden of sorrow which has fallen on the community with such tragic force."

Without waiting for a call for help, the Fourth Army at San Antonio swung into action, flying in blood plasma, gas masks, supplies and blankets to the stricken city. Red Cross and disaster units from many agencies converged upon Texas City to assist. More than 240 nurses registered for duty.

*

At about 8:00 a.m. on the morning of the fatal day fire was discovered aboard the docked French Line freighter "Grandcamp" which was in the process of loading ammonium nitrate. The crew thought that by closing the hatch containing the chemical, the fire would extinguish itself. Instead, the build-up of heat and compression set the stage for disaster.

The initial report of "a fire" brought the local fire units for what seemed a routine blaze. Shortly thereafter at 9:12 a.m. the ship exploded, triggering a further chain of explosions and fires. All the firemen were killed. A nearby steel barge, 30 by 100 feet, was lifted out of the water by the explosion and flung nearly fifty yards away from the dock with the twisted remains of one of the fire trucks perched upon it.

Balls of burning hemp and twine from the "Grandcamp" soared over the nearby town and flaked down like confetti on fire, igniting everything that could burn. Chunks of hot, flying steel pierced many nearby oil storage tanks igniting them one by one. Moments later three horrendous blasts wracked the nearby Monsanto Chemical Corporation plant, a huge $19,000,000 structure. The plant processed and stored many chemicals, including styrene, a highly flammable ingredient of synthetic rubber.

Arriving firemen could hear the screams of workers trapped inside, but rescue was impossible due to the intense heat and flames. Hundreds died, seared to death, decapitated, or were killed by concussion.

Explosions hurled hot, metal brands into the air

Ensuing explosions hurled hot, metal brands into the air, spreading to distant factories and into residential areas. A third of all homes were destroyed. Clouds of black flames and chemical fumes extended everywhere. The carnage continued for three days.

Like a huge rescue camp under a roof, the block-square city auditorium was converted to an emergency hospital and shelter for the homeless and injured. Staring at the amphitheater below them, anxious friends and rel-

atives sat exhausted and mute waiting for word of loved ones.

Cots were set up to handle over 2,000 injured and homeless. Scores of volunteer nurses and doctors were on hand to care for the shocked and injured. Other volunteers carried boxes of sandwiches, coffee, soup, blankets, cots, blood plasma – all mercy gifts that quickly appeared following the disaster. Red Cross canteens sprung up in the lobby.

The local high school gymnasium was converted to a morgue. Survivors faced the grisly heartache of identifying loved ones amongst the almost 200 corpses stretched out in rows. Ironically, many of the dead were lying on the same gymnasium floor where they had previously taken calisthenics or played basketball to the cheers of the same people now seeking to identify them.

Field medical units were also established to provide tetanus shots and administer to the sick and injured. Immediate attention was given to the safety of the water supply with careful testing and additional chlorination as a safeguard. Sewage, electric power and gas facilities were restored rapidly. The town was sprayed with DDT to minimize disease.

Army engineers brought in a detail of civilian engineers to work along the docks with bulldozers and cranes to remove wreckage and start the restoration process. Many high pressure railroad tank cars containing propane, butane and other explosive materials were removed from the danger zone, thus preventing potential chain reactions. In the evening giant searchlights played upon the remaining chemical and oil fires to provide visibility to rescue workers and firefighters.

Hundreds of skilled firemen were brought in to help extinguish the many refinery storage tanks still burning, pouring tons of foamite to snuff out the oxygen. Like their Oklahoma City counterparts in 1995, firemen with begrimed faces and smoke-smarting eyes created order out of chaos. Many sunk exhausted upon grassy plots and yards to snatch their first sleep in days of constantly battling to save the town.

At the time, the events in Texas City sent shudders throughout the fire protection and safety code-writing community. What went wrong? How insufficient are ammonium nitrate regulations? What needs to be done to prevent similar disasters in the nation? How do we protect our firefighters? It was theorized that the closing of the "Grandcamp" ship hatch created the compression and heat necessary for an explosion. (As a consequence, it is interesting to note that one prominent fire protection textbook advises firemen: "If an ammonium nitrate fire grows beyond control, all personnel should leave the area").

What went wrong? How insufficient are ammonium nitrate regulations?

Some port officials stopped ammonium nitrate-laden cargo ships from entering port, insisting they weigh anchor away from the city. Code writers toiled to establish rational rules for updating the classification, manufacture, transportation, storage and use of the product. Of particular concern was overland transportation because of the maximum exposure of the public to fire and explosion hazards. Overland trucks transporting the chemical were re-evaluated in terms of safe distances to bridges, tunnels, schools and other public facilities. The time of day or night for such transportation was also reviewed.

However, yesterday's code writers never contemplated the transformation of ammonium nitrate into the pernicious product used today by car bombers and terrorists, using for example, a mixture of ammonium nitrate and fuel oil made into a granular solid – a mixture easily obtained and difficult to detect. A dangerous article that can be further sensitized for more effective blasting or explosions, depending upon formulation and sensitivity.

This deadly use is a far cry from the legitimate handling of the product by farmers, construction and quarrying companies, and others.

The relative ease of producing this item has also led to the construction of many small manufacturing plants, located in widely scattered areas.

As a result of the Oklahoma City explosion there is a renewed urgency for code writers to effectively revise former rules – to fully recognize that, although the mixture is utilized as an explosive in 95% of all commercial blasting operations in the country, technical controls must be established to neutralize illegal usage of the product. Under consideration, for example, are the use of tracer chips to identify specific manufacturers, sellers and buyers, or via reformulation, provide ways to make it difficult to convert the product into a bomb.

Texas City has regained its health and economy. Today it has a population of about 237,700. Well over half the residents own passenger vehicles. Its principal industry remains petrochemical. Shopping centers contain many of the retail stores found everywhere, such as J.C. Penney, K-Mart, Sears and other chain stores. A half-billion dollars are found in bank deposits. Its two-year college has an enrollment of 3,800 students. The port has since been rebuilt and is thriving, with eight railroad lines serving the area. Major airlines provide scheduled flights from nearby Houston.

The Texas City explosion was by accident, the Oklahoma City blast by design. The utter destruction caused indescribable human pain and suffering in both events. In both events, too, Americans reacted with shock and dismay upon receipt of the news, with public outpourings of compassion across the nation and immediate efforts to ease the sufferings of those afflicted.

Can this type of nightmare happen again? In the wrong hands ammonium nitrate can be more pernicious and deadly. At the time the Texas City explosions resulted in stricter codes. Currently many of the victims of the Oklahoma City blast are pursuing civil actions against a prime maker of ammonium nitrate fertilizers and explosives, claiming the company failed to modify the product to make it insensitive to flames and detonation.

Without doubt the national attention focused on the Oklahoma City bombing will also lead to timely and effective legal changes that will result in increased public protection from criminal perversion of this product. The sooner such changes occur the more assurance the physical and emotional protection of our nation's citizens will have been advanced. All this works hand-in-glove with a credible civil defense program. ❑

Chemicals used in terrorist attacks obviously deserve thorough familiarization and analysis – and a comprehensive knowledge of treatment measures for victims as well as precautions to be taken by those engaged in the rescue operations. This jump into the nerve gas field requires for the rescue workers (from emergency management units, hospitals, industry, fire-rescue teams and whatever) a thorough understanding.

Not all that easy. Here a life-long expert and leader in rescue operations spells out the problems that rescue specialists will encounter in responding to today's terrorist incidents where the weapon is nerve gas.

ORGANOPHOSPHORUS POISONING (Nerve Gas)

– Max Klinghoffer, M.D.

During the later years of World War II, Hitler voiced threats concerning his "secret weapon," which would ultimately win the war for the Nazis. Since Germany was deeply involved in research relating to a possible atomic weapon, there has been considerable conjecture that this was Hitler's idea of the way to turn the war around. German scientists had been working industriously to develop a form of energy which would result in the "super bomb." They had been working largely through the idea of heavy water, in order to use Deuterium as the basis for an atomic weapon. It is uncomfortable to consider how much progress they had made, and especially since they were far advanced in rocket sciences.

But the "secret weapon" may not have been an atomic device. It may have been chemical and biological in nature.

. . . Hitler's idea of the way to turn the war around.

Most of us who read this material on nerve gas may have unknowingly been exposed to such chemicals, which vary in their degree of toxicity. Malathione, for example, is one of the less potent of these chemicals, and is used widely for insect control. It is nevertheless a "nerve gas," and some communities have regulations regarding its use as an insecticide. Parathion, on the other hand, has been used for years, mostly in greenhouses and nurseries, to combat the "red spider" and other plant pests. But the use of Parathion requires trained personnel, and stringent protective measures. The use of such chemicals requires the use of impervious clothing, goggles, and respirators. A small amount, absorbed through the respiratory tract, the skin, or the gastro-intestinal tract, may be fatal.

The slightest leak in the protective garb has had serious and even fatal effects.

There are numerous products available which are organophosphates. Phosdrin, for example, has been used to treat farm fields. But, in some cases, workers were apparently sent back to work in those fields prematurely and suffered toxic effects. There are efforts at present to eliminate the use of Phosdrin.

Max Klinghoffer, M.D.

Ideal weapons . . . in war or terrorism

There are, however, many chemicals in this category which are so deadly, and so rapid in their action, that they may be ideal weapons for use in war or in terrorism. They can be colorless and odorless (or almost so) and might easily be transported for clandestine contamination of air, food, or water; or contained in artillery shells.

Technically, a "nerve gas" is a CHOLINESTERASE INHIBITOR.

Dr. Gerhard Schrader, a German scientist, was investigating chemical agents in the search for more effective insecticides in 1936. He discovered that some of the organic phosphorate material with which he was experimenting was not only a potent insecticide, but also – in very small concentrations – could cause harmful reactions in man. He and his co-

workers, despite precautions, experienced severe visual symptoms, and difficulty in breathing. They were forced to discontinue experimenting with these compounds for long periods of time in order to recover from the toxic effects.

The first of these compounds was named TABUN. A short time later, an even more dangerous chemical was found, and was called SARIN. The most toxic of these chemicals is called SOMAN. In spite of a high rate of illness and death among those working with these materials, the research continued, since the German High Command recognized the possible value of these agents in warfare.

What is a CHOLINESTERASE INHIBITOR? Our bodies are regulated, to a great extent, by the sympathetic nervous system, and by the parasympathetic nervous system. Each of these acts through the release of specific chemicals. The parasympathetic nervous system releases Acetylcholine, which is essential for muscle contraction. If there is excessive Acetylcholine in the body, there is a dangerous (and often fatal) muscle contraction, leading to convulsions and other dangerous effects. Some of these effects are:

Bronchospasm (constriction of the air passages).
Constriction of the pupils.
Tearing.
Profuse release of fluids into the respiratory tract (pulmonary edema).
Salivation.
Bradycardia or tachycardia.
Diaphoresis (profuse sweating).
Vomiting and diarrhea.
Convulsions.
Severe muscle cramping.
Weakness and confusion.
Depression of the nervous system.
Breathlessness, coma, and death.

If the body normally produces Acetylcholine, how does it protect itself against excessive amounts of this chemical? The body secretes Cholinesterase, as needed, to counteract the Acetylcholine, thus protecting the body against the lethal effects of too much Acetylcholine. But the poisons known as CHOLINESTERASE INHIBITORS neutralize the action of Cholinesterase. Thus, the body poisons itself with an overdose of Acetylcholine. If not treated promptly, death follows by asphyxiation. The body poisons itself through the uncontrolled release of a chemical which is essential for muscle function, but which is lethal in large, uncontrolled amounts.

Definitions

Parasympathetic nervous system – That portion of the nervous system which provides the chemical acetylcholine which in turn controls muscle contractions.

Organophosphates – The group of chemicals first developed in Germany in the 1930s as insecticides. The more potent of these are highly lethal to man. *These chemicals might be encountered in war, in terrorism, or in accidental exposure.*

Titration – The balancing of one chemical against another.

Emesis – Vomiting.

All rescuers must be protected . . . by use of protective gear.

The symptoms of organophosphate poisoning may appear within a minute or two after exposure. Rarely, symptoms may be delayed for several hours. But successful treatment depends upon starting treatment as soon as exposure is known. There are also instances in which the victim has been revived, only to relapse hours later. In some cases, this may be due to inadequate decontamination.

It is apparent that there are dangers inherent in the rescue of victims of such poisoning. All rescuers must be protected against the poison by use of protective gear.

In the treatment of such patients (and remembering that the rescuers must be protected) there are multiple factors involved. The urgency is such that multiple rescue and treatment teams are needed. There are at least three major principles in treatment:

1. As quickly as is practical, move the victim from proximity to the poisonous material, and decontaminate with water irrigation if possible. (Remember that such irrigation water, and the victim's clothing, are contaminated.)

2. Start IMMEDIATE suction of the mouth and nose if the victim is "drowning in his own fluids."

3. Administer an antidote IMMEDIATELY. The major antidotes used in this type of poisoning are Atropine and Pralidoxime ("PAM"). RESPIRATORY STIMULANTS ARE CONTRAINDICATED.

Atropine is given in dosages of 2-5 mg. every ten to fifteen minutes. The danger of organophosphorus poisoning is so great that the dosage of Atropine may be determined by "titration." Titration, in the case of an antidote for Cholinesterase inhibitor poisoning, means the introduction of Atropine into the intravenous tube, in order that the victim receive immediate effect of the antidote. Using this method, relief from the symptoms of the poisoning may be seen at once, and the dosage and frequency of administration adjusted accordingly. Further, there is a marked disadvantage to the use of the antidote by intramuscular injection. The patient is (or soon may be) in a state of circulatory collapse. Thus the dosage of antidote given by the intramuscular route may not be absorbed into the circulation for some time. If there are repeated doses of the antidote, and if the circulation improves, the victim may be subject to a massive dose of the antidote and, paradoxically, may be poisoned by that antidote.

The dosage of Atropine for this purpose, in the adult, is from 2-5 milligrams every ten to fifteen minutes. (Again, this is an arbitrary dosage, and much depends on the severity of the poisoning, and actual dosage will depend on "titration.") The dosage of Atropine for children is .05 mg per kilogram of body weight, every ten to fifteen minutes.

The dosage of PAM (Pralidoxime) is one to two grams intravenously, at the rate of .5 grams per minute, for adults. For children, the dosage of PAM is 25-50 mg. per kilogram of

(Continued on page 20)

body weight, given over a 5 to 30 minute period. PAM may be used in addition to, or in place of, Atropine.

If the poison has been ingested, the victim may be given from 30 to 100 grams of activated charcoal, as a slurry in water. Proportionately less may be given for children. It may be necessary to give the charcoal by naso-gastric tube.

Vomiting should NOT be induced, since emesis may initiate seizures. An additional hazard in emesis is the risk of aspiration pneumonia.

Although some papers on the subject offer the usual advice: "move the patient to a noncontaminated area," the severity of organophosphate poisoning is such (even in small doses) that all caution and all means of protection should be observed for the rescuers. It should also be noted that removing the victim from the contaminated area may, in some cases, mean that some of the contaminated area has simply been moved to another location.

For the problem of increased secretion in the gastric and in the respiratory systems, mechanical suction should be used. (NEVER MOUTH-TO-MOUTH.)

If the eyes have been exposed, irrigation with tepid water is indicated, for at least one-half hour.

. . . tasteless . . . odorless . . . easily transported.

Using appropriate precautions for the rescuers, the victim's clothing must be removed, and the skin washed thoroughly with soap and water, with frequent rinsing. Any item of clothing made of leather poses a particular hazard, since leather absorbs these pesticides. All leather, along with any contaminated clothing should be stored in plastic bags, tightly tied, to be later disposed of by those trained in such disposal.

In addition to specific treatment, general life support measures should be applied, remembering also that symptoms may recur several hours or days after apparent recovery.

It should be emphasized again that these organophosphate poisons are, in many ways, ideal for use in warfare and in terrorism. They are highly lethal, even in small quantities; they can be virtually tasteless and odorless; and they are easily transported. The recent use of such poisons in Japan emphasizes the danger, especially by "copycat" terrorists.

Recognizing the ease with which we might be attacked with these poisons, it seems logical that various branches of government should be aware of the problem and the possible solutions. Every hospital and every medical establishment should have available antidotes for this type of poisoning, and personnel should be trained in treating such patients. They should be aware of methods of treatment, including decontamination, and of protection for rescue and medical personnel. All medical establishments should have supplies of Atropine and PAM in equipment which is designed for rapid administration. ❑

NCCEM 1995 Conference November 4-7

The annual conference for the National Coordinating Council on Emergency Management (NCCEM) will be held at the Rhode Island Convention Center in Providence, Rhode Island November 4-7, 1995.

This marks the 43rd annual NCCEM conference and will feature the usual exhibit area displays. Special emphasis this year will be placed on terrorism, what can be done about combatting it and what to anticipate in the future.

Conference fees are $185 for members and $210 for non-members. For further information on the conference call NCCEM Headquarters at 703-533-7672.

See also NCCEM Conference announcement on page 11 of this issue of the *Journal of Civil Defense*.

REVIEWS

WAR AS I KNEW IT, by General George S. Patton, Jr. Annotated by Colonel Paul D. Harkins. Published by Houghton Mifflin Company, Boston/ New York. 1995. 425 pages, paperback. 13 maps, 8 appendices. Price: $15.95.

– Reviewed by Edwin N. York.

This is a new publication of the 1947 book *WAR AS I KNEW IT* published two years after General Patton's death in December 1945. There is a new and excellent introduction by Rick Anderson. The introduction gives a concise summary of Patton's military career from aide to General Pershing in Mexico in 1916 through World War I, then the invasions of North Africa and Sicily, and as commander of the U.S. Third Army in its great drive across Europe in World War II.

See also Philip C. Clarke review of *THE PATTONS* by Robert H. Patton (General Patton's grandson), page 22, Fall issue 1994, *JOURNAL OF CIVIL DEFENSE.*

The book is a collection of essays taken mostly from Patton's journal which he had kept from the time he became a West Point cadet in 1905 until just a few days before the automobile accident that caused his death. The journal entries show that his thoughts were a challenging mixture of practical measures, rather calm acceptance of the vagaries of battle, firm decisions, desire for unrelenting attack, appreciation of beauty and historical continuity – but extreme impatience with political decisions by higher headquarters.

On November 6, 1942, just before the invasion of North Africa, he writes: "It seems that my whole life has been pointed to this moment." After the successful landing he writes on November 11th: "I decided to attack Casablanca this day with the 34th Division and one tank battalion. It took some nerve..." The entry of February 1, 1943 tells of a hunting trip with the Pasha of Marrakech in which he kills a wild boar. "It has always been my ambition to meet a robber chief in his own country and also to have an exciting hunt with little danger. The Pasha and my wild boar, which was the largest killed, satisfied my two ambitions."

During the Sicilian campaign Patton recounts his conversation with the mayor of Agrigento who tells him that a partly destroyed temple was damaged by an unfortunate incident of the other war. When I asked which "other war" he said that this temple was destroyed in the Second Punic War (218-201 B.C.). Patton then gives a quick history of the many invasions of Sicily by Cathaginians, Greeks, Romans, Vandals, Arabs, Crusaders, French, English and now Americans.

Patton frequently used past military campaigns for guidance. Before Normandy he read *THE NORMAN CONQUEST* by Freeman "paying particular attention to the roads William the Conquerer used in his operation in Normandy and Brittany. The roads used in those days had to be on ground which was always practical. " When crossing a river in France he notes: "The Melun crossing is the same as that used by Labienus with his Tenth Legion about 55 B.C."

A pint of sweat saves a gallon of blood

Patton gives many items of advice: "A pint of sweat saves a gallon of blood." "Commanders should not command too far down." "It is always best, where practicable, to drive to the front so that soldiers can see you going in that direction, and to save time, fly back by Cub so that you are never seen going to the rear." "One continues to learn about war by practicing war." "...the report of no incident which happens after dark should be treated too seriously. They are always overstated." "When soldiers are caught in a barrage...the surest way out of it is to go forward fast." "Infantry troops can attack continuously for sixty hours." "Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity."

He frequently criticizes policies and decisions he dislikes. "...at Thiacourt...is a huge United States cemetery – a monument to the pacifists who produced the last war." In August 1944 when Supreme Headquarters Allied Expenditionary Force diverted gasoline supplies to other forces he states "It was my opinion that this was the momentous error of the war."

Patton always gives high praise to the American soldier. His summary after the Battle of the Bulge was: "During this operation the Third Army moved farther and faster and engaged more divisions in less time than any other army in the history of the United States – possibly in the history of the world. The results attained were made possible only by the superlative quality of American officers, American men, and American equipment. No country can stand against such an army."

At the end Patton makes the nostalgic comment of a warrior seeing his mission over: "In terminating these remarks it is sad to remember that, when anyone has fairly mastered the art of comment, the necessity for that art usually expires – either through the termination of the war or through the advanced age of the commander." Patton clearly had mastered the art of command, but as he once wrote: "Leadership is the thing that wins battles. I have it, but I'll be damned if I can define it."

CARNEGIE COMMISSION ON PREVENTING DEADLY CONFLICT PROGRESS REPORT, by Jane E. Holl, Executive Director, July 1995. 25 pages large format. Free from Carnegie Commission on Preventing Deadly Conflict, 1400 N St. NW, Sixth Floor, Washington DC 10037-1153.

– Reviewed by Kevin Kilpatrick.

The ambitious mission of the Carnegie Foundation is to "address the looming threats to world peace" and to come up with measures that can deal successfully in minimizing the problem, perhaps solving it.

"We have in mind," states the pamphlet's overview, "a wide range of circumstances, including those where the hatreds and fears of groups are exploited in violent ways by political opportunists and those where the potential for uncontrolled possession of nuclear, chemical and biological

UNDERGROUND BASES AND TUNNELS: WHAT IS THE GOVERNMENT TRYING TO HIDE?, by Richard Sauder, Ph.D. 1995. Paperback, 142 pages (plus 50 pages of illustrations and photos). Order from Mylin Publishing, San Diego, CA – phone: 1-800-497-6646. Price: $16.90 (includes shipping and handling).

– Reviewed by Walter Murphey.

Here is a truly remarkable book for those interested in prospects for a meaningful (pardon the expression) civil defense. *Underground Bases and Tunnels* provides eye-opening information on American underground protective facilities for government, the military and industry. Unfortunately not for the people per se – this is not its aim, no criticism of the author.

Since the advent of nuclear weapons in 1945 and the dramatic destruction of Japan's Hiroshima and Nagasaki there has been fast-growing interest in protecting national assets deep underground where nuclear weapons have difficulty in reaching targets.

The NORAD installation under Cheyenne Mountain in Colorado is probably the best known "nuclear fortress."

The Rand Corporation became involved in working with the U.S. Air Force in 1948 to research, plan and work on underground bases. In 1960 it published a study for the Air Force giving 12 U.S. locations for possible deep underground installations.

Lots more.

One item comes close to home – or what used to be "home" – and that is the citing of a 1989 article in *U.S. and World Report* which revealed that the Federal Emergency Management Agency (FEMA) and the Pentagon were involved in supervising about 50 secret underground command posts across the U.S. where allegedly the President could find safety in the event of a threatened nuclear attack. It also put the finger on the FEMA "special facility" at Mount Weather in Virginia.

Many other underground facilities are cited. One is the multi-levelled deep "hole" under the White House. Others are scattered from Hawaii to Maine.

Another is the Greenbriar Hotel in White Sulphur Springs, West Virginia. It is to house Congress in a nuclear emergency. Deep underground, it is meant to allow Congress to remain in session, to provide communications, etc.

FEMA's extensive protected facilities in the ten "regions" are also listed. These, of course, trickle down to protected state facilities, and county "emergency operating centers."

Many more protected underground headquarters are described in Dr. Sauder's remarkable volume. Fifty illustrations give the reader a visual idea of what appears in print.

Tunneling equipment is the most efficient way of going underground – sometimes to depths of 5,000 feet or more. One problem up until the recent past has been the disposal of the debris loosened by the tunneling operation, and the tell-tale piles of it which inevitably appeared on the surface outside the excavation.

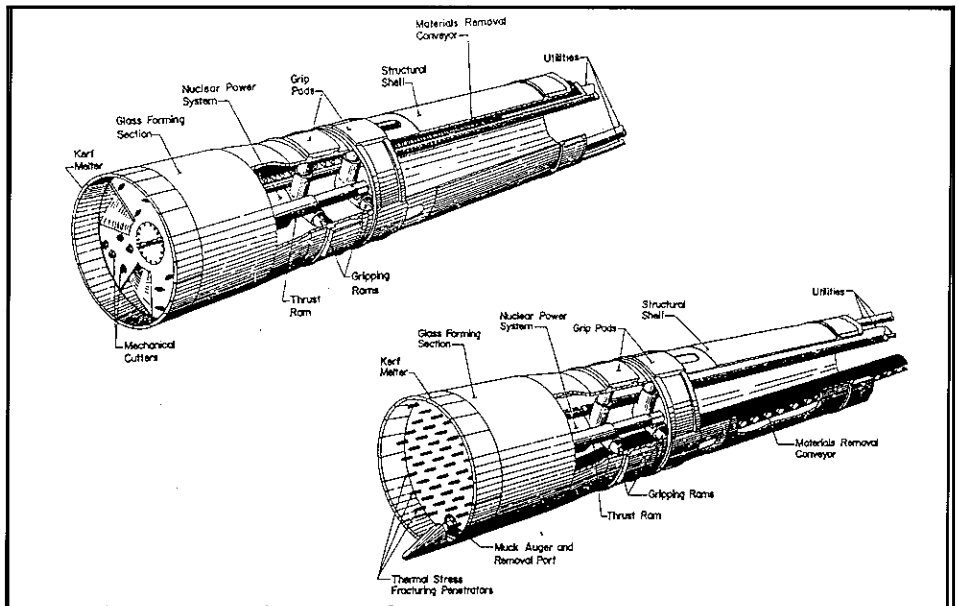
Solution: the new Nuclear Subterrene Tunneling Machine, a nuclear device that simply melts the excavated debris and paves the sides of the new tunnel in glass. Surplus glass is forced into rock crevices. No surface debris.

Dr. Sauder's remarkable book doesn't stop here. It goes into lunar tunneling possibilities, and UFO "alien" appearances on earth. Much more. Dr. Sauder is the first to admit that there is more to be covered, and he asks the help of readers in furnishing him with further information.

As the heading of this report reveals, *Underground Bases and Tunnels* may be ordered direct from the publisher.

Hopefully the book will also stimulate interest in population protection – like the extensive population tunnel systems under Shanghai and Peking, for instance.

"The present underground facilities," observes Dr. Sauder, "are for the political, financial, technical and military elite – not for the populace at all. The average person is simply written off as "collateral" radioactive damage should it come to an exchange of nuclear missiles."



Two types of Nuclear Subterrene Tunnel Boring Machines.

weapons menaces the lives of millions."

An ambitious "work plan" is spelled out. Members of the Commission's Advisory Council include former president Jimmy Carter, Mikhail S. Gorbachev, Robert S. McNamara, Sidney Drell and Senator Nancy Kassenbaum.

The commission's publications are offered free of charge.

REVIEWS (Cont.)

OPERATION ANADYR by General Anatoli I. Gribkov and General William T. Smith, and edited by Alfred Friendly, Jr. Edition Q, Inc., 551 N. Kimberly Dr., Carol Stream, IL 60188-1881, 1994. 178 pages, plus annexes, notes, and index. Price $24.95.

– Reviewed by James M. Ridgway, Ph.D.

Operation ANADYR is the Soviet code name for its Caribbean Initiative, known in the United States as the Cuban Missile Crisis. The Anadyr is a river in northeast Russia that flows into the Bering Sea. To help with the deception of an Arctic exercise, some Russian troops were issued skis and winter gear.

Nikita Khrushchev, with a global view, advanced the project. The operation would defend a friendly nation from U.S. invasion; provide a springboard to Latin America; put missiles close to the U.S., countering its technological and numerical advantages; and check China's advances to Cuba. General Gribkov was head of the Operations Directorate, Soviet Defense Ministry. On May 21, 1962 he received orders to develop a secret plan to put missiles in Cuba and to deliver the plan by May 24. Deployment under the plan was to be completed by early November, 1962.

Before any action could be taken, a secret treaty had to be negotiated with Castro and a field inspection made. These matters completed, General Issa Pliyev left Russia July 10 to take charge of things in Cuba. On July 26 the first of 85 merchant ships left Russia, making 150 round trips in about three months. Atomic warheads arrived in Cuba October 4.

The Soviets knew they were playing with fire. However, Gribkov writes, "The scheme he devised fit precisely with Khrushchev's fundamental belief that Soviet military power rested on our rockets, our submarines, and our civil defense measures...." Possible U.S. attack on Cuba was a planning assumption. Consequently, a Group of Forces, totalling 41,902 men, plus short range Luna rockets were sent.

While never unpacked or armed, the Soviet bombers could have reached any port of embarkation on the U.S. east coast. SS-4 missiles could have reached an arc from El Paso through Cincinnati to Washington. SS-5s could have reached any place within the continental U.S. Atomic weapons varied from two kilotons on the Lunas to 700 kilotons on the larger missiles. (Roughly, on the larger missiles, that is 30 times more powerful than the bombs the U.S. dropped on Japan.)

"...Soviet military power rested on our rockets, our submarines, and our civil defense measures...."

Initially General Pliyev had authority to use atomic weapons if attacked by the U.S. As negotiations progressed, this authority was retracted to the point that only Khrushchev could authorize their use. On October 27, during negotiations, the Russians in Cuba shot down a U.S. U-2, flying at 70,000 feet. This caused concern both in Moscow and Washington. President Kennedy had addressed the public on the crisis on October 22, and had ordered a naval blockade of Cuba as of October 24.

On October 14 Gribkov was ordered to Cuba to see how things were going. The Central Finance Directorate gave him limited hard currency – $10. A two day stopover at the Dakar, Senegal airport left him broke. He was ordered back to Russia via Czech air late in November. On this trip he arrived in Gander, Newfoundland broke. Fortunately, a Russian poet's wife on the flight had U.S. dollars and bought breakfast for the group.

Gribkov thought the U.S. requirement to open crates containing missiles on the ships, on high seas returning to Russia, was a "humiliation." Castro would not let U.N. inspectors inspect in his country.

...telltale marks of missile launching pads in Cuba.

Now, for the U.S. side of the story. In 1962 William Y. Smith was a Major, and an assistant to General Maxwell D. Taylor. Taylor was military advisor to President Kennedy. October 1, 1962 Kennedy brought Taylor out of retirement and made him Chairman of the Joint Chiefs of Staff. Smith followed Taylor to The Pentagon.

The U.S. had picked up the increased sea and air traffic to Cuba early. U.S. planes buzzed ships and even civilian aircraft. The Soviets put farm equipment on decks, or covered military goods. Troops were not permitted on deck until dark. Ships were loaded and unloaded at several Russian and Cuban ports.

August 29 U-2 photography picked up telltale marks of missile launching pads in Cuba. By October 10 the U.S. Tactical Air Command was on a war footing, ready to defend the southeastern U.S.

The U.S. response was halting because: Operation MONGOOSE, a plan to attack Cuba, had to be put aside; the Russians spread diplomatic disinformation; the President had to fit Cuba into the world picture – Berlin was the big problem; and Kennedy was getting mixed advice. U.S. diplomats wanted negotiations; the Joint Chiefs of Staffs – and General Curtis LeMay in particular – wanted military action.

...armed forces, worldwide... advanced state of readiness.

On October 16 the Executive Committee of the National Security Council took the Cuban problem up in earnest. On October 17 "Charles E. Bohlen and Llewellyn E. Thompson, both former ambassadors to the Soviet Union...suggested making a diplomatic approach to Khrushchev and Castro before military moves." President Kennedy decided upon an address to the public on October 22, announcing a blockade of Cuba beginning October 24, 1962.

This led to agreements. Russia would observe the blockade and remove its missiles and atomic warheads from Cuba. The U.S. agreed not to attack Cuba and to curtail its missile work in Turkey. Final agreement was held up to the end of November by a debate over the Soviet bombers still in their crates. Castro wanted them. The U.S. considered them to be offensive weapons. Ultimately the Soviets sided with the U.S. on the point.

President Kennedy did have force available in case the blockade failed. The Strategic Air Command went on DEFCONs 2 and 3 on October 24.* All of the armed forces, worldwide, were on an advanced state of readiness. This, of course, was noted by the Soviets.

...secret treaty between Castro and the Soviets.

In retrospect the U.S. intelligence and the Secretary of Defense missed two big points. First, the potential impact of the Luna missiles on attacking sea and ground force was not fully recognized. Second, Soviet forces in Cuba were thought to be 10,000 men or less. There were, in fact, over four times that number.

Appendix 1 contains the secret treaty between Castro and the Soviets. It also has the memo Mikoyan sent to Khrushchev on his exit interview with Castro, telling him he could not keep the bombers. The end pages of the book are helpful maps of the disposition of Soviet and U.S. forces. These should be studied before plunging into the generals' chronology of events.

NOTE: The Cuban Missile Crisis generated public reaction throughout the United States. At the University of Florida (Gainesville, Florida), it brought about the founding of The American Civil Defense Association – then known as the Association for Community-Wide Protection From Nuclear Attack. It was founded (in 1962) by a group composed of Dr. Arthur A. Broyles (President), Prof. Byron D. Spangler, Prof. Herbert Sawyer, Dr. Werner Lauter, Col. R. G. Sherrard and Albert Edgar.

*DEFCON means Defense Condition or state of military force readiness. In 1962 DEFCON 5 was "normal"; DEFCON 1 was the highest level of readiness. On a DEFCON 3 the armed forces became really active.

ASSESSING THE POTENTIAL FOR CIVIL-MILITARY INTEGRATION: TECHNOLOGIES, PROCEDURES, AND PRACTICES, U.S. Congress, Office of Technological Assessment, 1994, 191 pages. To order, send a check or money order for $13 per copy, or send a VISA or Master Card number and card expiration date to: Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Order must specify stock number S/N 852-003-01394-1. Price includes shipping and handling.

– Reviewed by James M. Ridgway, Ph.D.

The subject study and report were mandated by the Senate and House Armed Services Committees. The study is significant to federal officials, scholars, defense industry planners, and members of the National Defense Executive Reserve who are involved with the national mobilization bases and military procurement processes.

To do the study the Office of Technological Assessment (OTA), formed a project staff, an advisory panel, and two workshop groups, one on shipbuilding and one on Civil-Military Integration of Manufacturing Processes.The advisory panel and workshop groups had a good mix of people from federal agencies (mainly Department of Defense civilian officials), "think tanks," universities, and industries. Considering the gigantic complexities and requirements of military items – from nuclear subs to socks – and of the industrial prime and sub-contractors needed to produce them, the groups painted a good, broad picture of the problems and the processes of military procurement.

The report covers many objectives: avoidance of the evil troika – waste, fraud, and abuse; reduction of legislative intrusion into military procurement; elimination of over-specific military specifications; improvement of cross fertilization between military and industrial research and development and production methods and capabilities; and, in the face of declining defense budgets, getting more bang for the taxpayers' bucks through civil-military integration. Analysis went through three tiers or levels: industrial sector, firm or corporate, and facility or plant.

Three strategies are recommended to get to better civil-military integration: readjustment, reform, and restructuring. These would work in a long range, incremental series. Readjustment requires mainly Defense Department, but limited Congressional actions. Reform rests on expansion of commercial purchases, "integration of processes," and reduction of work done in the purely government and industrial defense sectors. Restructuring, way down the road, could change military force structure and weapons systems.

...getting more bang for the taxpayers' bucks...

While data is given on potential savings through improved civil-military integration, the report has many "hedges" on such savings. In these vast areas, what is basically a report on management, cannot speak on values that have bedeviled the military procurement system since the French and Indian Wars: quality-shoddy; honesty-dishonesty; fair profit-price gouging; engineering and production excellence-political expediency.

The reviewer has spared the reader many technical terms, abbreviations, and acronyms. These are found in Appendix A of the report. The report itself is compact, well balanced on pros and cons, and contains valuable information and insights for the audiences at which it is directed.

TRENDS IN THE AMBULANCE INDUSTRY. Published by the International Association of Fire Chiefs, 4025 Fair Ridge Drive, Fairfax, VA 22033-2868 (Phone: 703-273-2868). 1995.

This is the fifth book in a series addressing emergency medical services management issues. Price is $55 for ICAF members and $155 for non-members.

The book spotlights information on primary care movements, private fire and ambulance services, hospital based EMS, private partnerships, competition, etc.

REVIEWS (Cont.)

COASTAL EXPOSURE AND COMMUNITY PROTECTION – HURRICANE ANDREW'S LEGACY, published by the Insurance Institute for Property Loss Reduction (73 Tremont St., Suite 510, Boston, MA 02108). Price $10. 1995.

– Reviewed by Kevin Kilpatrick.

Would that this analysis of hurricane damages and costs be taken seriously enough by authorities so that corrective action could be taken insofar as achieving proper building codes is concerned.

As the title indicates it uses Hurricane Andrew (1992) as an example of what is wrong with our building codes – plus the practice of contractors and home owners not following them. (The less expensive – and more vulnerable – construction methods are "par for the course" in the construction game.)

Eight insurance companies failed as a result of Hurricane Andrew

One lesson that should strike home is that eight insurance companies failed as a result of Hurricane Andrew. Behind the failure is, again, the building code problem. This informative booklet winds up by saying:

> The consequences of Hurricanes Andrew and Iniki [the 1992 Hawaiian hurricane] have led some insurers and policy makers to suggest that a private-public partnership may be needed to deal with truly catastrophic hurricanes and earthquakes. For example, in the 103rd Congress, the proposed Natural Disaster Protection Partnership Act would have directly addressed mitigation by requiring states to adopt one of three recognized model building codes. In addition, it required state natural hazard mitigation plans to address improved enforcement of land use and building regulations, building in high-risk areas, and improved certification and training of building professionals.... In addition to loss mitigation programs, the proposal provided for a privately-operated catastrophic reinsurance program that would allow accumulation of funds to pay for insured losses in the event of mega-catastrophes.

Coastal Exposure and Community Protection also zeroes in on the dire need for qualified building inspectors who can enforce meaningful building codes that provide real protection.

NATO HANDBOOK, published by the NATO Office of Information and Press. 1110 Brussels, Belgium (Tel: 32-2-728-4413, FAX: 32-2-728-4579). Also: US NATO PSC 81, Box 200, APO AE 09724. 1995. Paperback. 368 pages.

– Reviewed by Bob Baffin.

For those interested in the big international picture of the North Atlantic Treaty Organization (NATO) here is a basic volume constituting a thorough orientation on the up-to-

In 1989 the world witnessed... change in East-West relations...

date political situation as far as the "partnership and cooperation" of the nations involved is concerned. The first paragraph of the preface provides a framework:

> In 1989 the world witnessed the beginning of a process of fundamental political change in East-West relations including the dismantling of the Berlin Wall, the disappearance of one-party Communist states throughout Central and Eastern Europe, the establishment of free and independent states in the republics of the former Soviet Union, and the end of the division of Europe. The role played by the North Atlantic Alliance, from its establishment in 1949 to the end of the Cold War four decades later, was fundamental in bringing about the conditions which made these developments possible....

The book is structured in five parts: Part I – The Transformation of the Alliance; Part II – How NATO Works; Part III – Organization and Structures; Part IV – The Wider Institutional Framework; and Part V – Non-Governmental Organizations.

Seven illustrations (organizational charts) help to clarify the NATO structure.

Sixteen appendices give valuable supplemental information. For instance, Appendix XV provides a revealing "Chronology of Events" (1945-1994).

The *NATO HANDBOOK* is a reference that belongs in every office library. It serves to give a valuable focus to the post-World War II world of the nations in the region of the northern Atlantic both in Europe and North America.

Hurricane Loss Projections For Category 4 or 5 Hurricanes at Key Points Along the Coastline

Intensity*	Landfall Location	Estimated Total Insured Loss (Billions of 1993 dollars)
5	Miami, FL	$52.5
5	Ft. Lauderdale, FL	51.9
5	Galveston, TX	42.5
5	Hampton, VA	33.5
5	New Orleans, LA	25.6
4	Asbury Park, NJ	52.3
4	New York City, NY	45.0
4	Long Island, NY	40.8
4	Ocean City, MD	20.1

* Saffir-Simpson Scale Source: Applied Insurance Research

TOO GOOD TO FILE

AND THEN THERE WAS NAGASAKI

Observances of the 50th anniversaries of World War II events have now ended. Much was said about the nuclear bombings of Japan – mostly about the first bombing – Hiroshima, less about the second – Nagasaki. But the Nagasaki bombing – under the command of Major Charles W. Sweeney (now retired General Sweeney) – was a super dramatic adventure.

Initial target...Kokura

The initial target was Kokura, but weather forced Sweeney's plane at the last minute to switch to the alternate target – Nagasaki.

On the way the positioned nuclear weapon's warning light began to flash. Sweeney had to choose whether to get rid of the bomb right away (and pray it would have the decency to delay exploding) or to gamble on correcting the problem – with the possibility that it would detonate on board. He gambled – and won. It was a harmless malfunction of the barometric fuse.

Suddenly, the entire horizon burst into stark white...

General Sweeney in a July 19th *Wall Street Journal* article gives an account of the bomb drop:

> As the 10,000 pound bomb left, the aircraft actually lurched upward. I then took the plane into a sharp turning point. Time seemed to slow down. As the seconds ticked by, I began to wonder if we had dropped a dud.
>
> Suddenly, the entire horizon burst into a stark white with an intense flash – more intense than Hiroshima. Even with my eyes squeezed shut the light was blinding. A moment later, the first wave hit us with unexpected force. This shock wave was more severe than those at Hiroshima. But the aircraft was handling just fine. At Hiroshima there had been two shock waves, but now they kept coming one after another.
>
> As I completed my turn, I could see below a horizontal brownish cloud obscuring the city. As at Hiroshima, out of it rose a vertical column in those rainbow hues – purples, oranges, reds. But now the cloud seemed to be rising faster; it seemed more angry, more intense. At about 25,000 feet, a white mushroom cloud broke off and continued to climb at a rapid rate.
>
> I ordered our radio man, Abe Spitzer, to send our strike report to Tinian..."Nagasaki bomb dropped; results good."...
>
> As we approached Okinawa I tried to raise Yontan tower. Okinawa was the busiest field in the Pacific, with aircraft coming and going around the clock on missions against Japanese positions. I could see heavy incoming and outgoing traffic. I was now virtually out of fuel. I had only one shot to bring us in alive. My biggest concern was that without clearance from the tower on approach, I might crash into somebody.

Firing all distress signals Sweeney's plane had, Sweeney finally got the attention of the airfield and last-minute measures were taken on the ground to prepare for an emergency landing. The plane hit half way down the runway at 140 m.p.h., bounced 25 feet into the air, then settled down, then veered. Using reversible props Sweeney managed to bring his plane to a stop 10 feet from the end of the runway. On the ground he immediately reported to General Jimmy Doolittle, commander of the Eighth Air Force who pronounced his mission "well done." Sweeney ends his article by saying:

I was now virtually out of fuel

> Our dream had been realized – by flying a couple of bombing missions we had avoided an invasion of Japan, which would have produced massive casualties on both sides. I believed then and continue to believe today that President Truman made the right decision to drop the bomb. As the father of 10 children and the grandfather of 21, I am certainly grateful that the war ended when it did. And it is my fervent hope that there will never be another atomic mission. Ever.

General Jimmy Doolittle... pronounced his mission "well done"

In the August 1995 issue of *The American Legion* magazine there appears a 1963 interview with President Truman by Philip C. Clarke. In the interview President Truman says:

> ...The bombs were dropped after Japan had been warned that we had discovered the greatest explosive in the history of the world. We asked them to surrender. They did not do it.
>
> We expected to land in Japan with a million men. Two hundred and fifty thousand of them, it was estimated, would have been killed and a half-million of them would have been maimed for life; and many Japanese would have been hurt...we dropped the bombs and they surrendered in a very short time after that....

EMERGENCY FOOD AND WATER STORAGE

There's increasing talk in Middle America of coming crises both political and economic. Newsletters from a variety of sources predict (1) a collapse of our economic system, (2) widespread civil disorders that are not easily contained or controlled, and (3) major geographic changes in the U.S. map due to unprecedented earthquakes of magnitudes beyond our ability to recover in that short term.

To top it all off, there are indications – plenty of small scale examples – that the Federal Government in an effort to cope with one or more of these events, will impose Draconian measures on the populace. These measures could entail, according to the newsletters, everything from weapons confiscations to movement controls and food rationing...even martial law.

Unprecedented earthquakes

Even "small scale" disasters in Florida, the Midwest (flooding) and California brought out the need for modest personal preparations. People were without food and drinking water for extended periods of time, making them refugees in their own community, placing them at the mercy of whatever government relief efforts could provide.

Certain commercial publications are filled with ads for "emergency food & water supply kits" at some fairly steep prices. But most people do not know how easy it is simply to put away staple dry goods and water at a fraction of the cost. Check your area Yellow Pages under "Wholesale Food." These are usually the companies that sell to small ethnic specialty and Mom & Pop grocery stores. The wholesalers typically carry 25 to 100-pound bags of rice, beans and other staples at surprisingly low prices.

Food stored in Mylar Bags will keep for years because the bags will not "break down" the way plastic bags do. The Mylar bags are available from Walton Feed for $2 each (phone: 1-800-847-0465). They replace the oxygen with nitrogen to prevent spoilage and have no negative effect on the food in the bag. (Twist the bag shut and secure with a locking cable tie.) Handy low-cost containers for the filled Mylar bags are food-grade 5-gallon grommeted lids. The buckets are modular stocking units and are available from Phoenix Group (202-452-7627). They also have 60-gallon emergency water barrels. These are plastic, modular barrels and come with two sealable screw caps.

The barrels are also available with wide-opening detachable lids, ideal for underground burial of supply caches. The buckets go for $26 for 5, and the barrels are $35 each. All shipping and handling included.

They both store easily and, when filled, will form the basis for a cheap, ready source of food, water and other survival supplies.

– Pate Wayne
The Phoenix Group
444 N. Frederick Ave. (Suite L-184)
Gaithersburg, Md 20877

U.S. VULNERABLE TO NUCLEAR ATTACK

Consider a little-known scandal.

The United States cannot protect itself from incoming nuclear warheads. If some hostile nation lobs an atomic missile our way, we can do nothing more than sound air-raid sirens [those few that may be left over from earlier days] – and then escort our assailant back to the Stone Age with the help of our own nukes....

The membership of the Doomsday Club is likely to grow.

Itinerant physicists from the former Soviet Union have sold their services abroad, and Russia has begun racking up profits by peddling military technologies to other nations....

30 or more...warheads have vanished...

To heighten the tension, Russian generals also confess that 30 or more warheads have vanished from their nuclear arsenals....

No great civilization in history has refused to shield itself from the greatest potential threat to its safety, and several have fallen because they have failed to keep pace with military innovation....

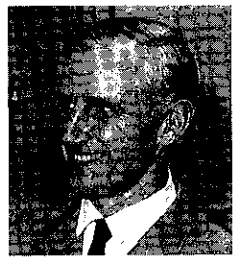
– Columnist Tony Snow in *USA TODAY*.

25 Years Ago in the *Journal of Civil Defense...*

Dr. Arthur A. Broyles, who had been a member of the staff of the Los Alamos Weapons Laboratory at the time of the development of the H-bomb has written timely articles for the *Journal* over the years. Here is a condensation of his article in the July-August 1970 issue.

THEY BET *YOUR* LIFE

– Arthur A. Broyles



Unlike a number of European countries the United States has neglected to give strong accent to all-around protection for its civilian population. Is there an American policy of "civilians last" in case of nuclear attack? One of Survive's political analysts lifts the lid on a long-smoldering question.

Attitudes of Washington officials responsible for our nation's survival are puzzling. To many who recognize the life saving potential of a strong civil defense, the past several years of decreasing top-level support of civil defense programs have been a frustrating mystery. Why have the leaders in four administrations left Americans vulnerable to the devastation of a nuclear attack?

Congressional hearings last year on the question of the deployment of the Safeguard Anti-Ballistic Missile (ABM) system shed some light on this question and drew a sharp contrast between the attitudes of the American and Soviet governments....

Is it bad to protect our cities? Apparently so because the Russians might consider it "provocative," that is, they might conclude that we were saving our people from the effects of their counterstrike after we had hit them first. We would be removing their ability to "deter" our attack by making their retaliatory strike ineffective in its mission to kill our people....

It is quite evident, however, that the attitude of the Soviet government is markedly different from ours. Secretary Packard, himself, continues his testimony by saying, "The first effort at a Soviet ABM was at Leningrad and Moscow some years ago. Next, they installed an ABM system around Moscow and covered the populated, industrial areas in western Soviet Union with a system which, in its early stages, looked like an ABM." It has since become clear that, indeed, the Soviets have deployed these ABM systems.

A number of experts on Soviet history and attitudes have testified that the Russian position was accurately portrayed by Premier Kosygin's reply to the question, "Do you not share the opinion that the development of the Soviet antimissile system is a new step in the arms race?" His answer was, "Which weapons should be regarded as a tension factor – offensive or defensive weapons? I think that a defensive system which prevents attack is not a cause of the arms race but represents a factor preventing the death of people." The Soviets have gone much further in developing a civil defense system than we have....

It is clear that the United States and the Soviet Union are playing two entirely different "ball games" in the nuclear arms race. The Soviet Union seems to be primarily concerned with the protection of its cities while the current U.S. plan is to leave its population vulnerable to Soviet attack as a guarantee that we will not attack first. If the United States has miscalculated and a nuclear war does start its unprotected population may suffer very heavy losses. The Soviet policy on the other hand, will minimize its losses in any eventuality. ❑

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UPCOMING

Sep 22-24	**PREPAREDNESS EXPO '95,** Seattle, WA. Sponsored by *Preparedness Journal.* Contact Leo Atencio, Marketing Director, P.O. Box 12818, Ogden, UT 84412 (314/894-0276) (FAX: 314/894-74474)
Oct 25-27	**7TH ALARMES PROTECTION SECURITE International Exhibit at CNIT-PARIS-LA DEFENSE** – France. See announcement page 21.
Nov 5-7	**NCCEM 43RD ANNUAL CONFERENCE & EXHIBIT,** Providence, Rhode Island. Dedicated to promoting the goals of saving lives and protecting property prior to and during emergencies and disaster. Contact: Elizabeth Armstrong. (703/533-7672) (FAX: 703/241-5603)
Nov 22-25	**MEDICA '95.** Dusseldorf, Germany. 27th International Trade Fair and Congress. World's largest for healthcare equipment. For information contact Joyce Combs, International Representative, 107 West Gaines St., Tallahassee, FL 32399-2000. (904/488-6124) (FAX: 904/487-1407)
Dec 7	**ANNUAL TACDA MEMBERSHIP MEETING (FOLLOWED BY TACDA BOARD MEETING),** Starke, Florida (meet at TACDA Office at 118 Court Street at 9AM). Meeting opens at 9:30AM at Betty Nice's Crystal Lake residence. Lunch and refreshments furnished. For information contact TACDA. All TACDA members invited.
Mar 17-21	**EUROPEAN CONFERENCE ON TRAUMATIC STRESS,** Sheffield University, England. For information contact Roderick Orner, European Conference Secretariat, Department of Clinical Psychology, Raverstock House, St. Annes Road, Lincoln, England LN2 5RA.
Mar 25-29	**OCCUPATIONAL & ENVIRONMENTAL RADIATION PROTECTION** (Course) Fee: $1,245. Harvard School of Public Health, Office of Continuing Education, 677 Huntington Ave., LL-23, Dept. B, Boston, MA 02115-603. (617/432-1171)

EDITORIAL

ANTI-DESTRUCTION CONSTRUCTION

(See also editorial "Response to Rubble" – Spring 1993 *Journal of Civil Defense.*)

With recent disasters, interest appears to be building in defining the ways that a home, or other structure, can withstand the remarkable forces brought upon it by hurricane-force and tornado-force winds. And thereby save lives.

But "economy" appears to be more important than safety. Saving a dollar takes precedence over saving a life. Repairs and reconstruction in the area in south Florida ravaged by Hurricane Andrew in 1992 were quality-wise just as poor as the destruction they replaced and in general invited the same kind of damage the next time around.

However, something new is entering the hurricane destruction merry-go-round.

A clear lesson can be gathered from pictures of hurricane devastation (including Hurricane Andrew) in that while conventional homes and other buildings may be flattened, water tanks, chimneys, poles and other *rounded* construction remain largely intact. This same observation applies to structures in a nuclear bomb explosion. Pictures of Hiroshima and Nagasaki after they were destroyed by atomic weapons in 1945 show that rounded industrial chimneys and telephone poles appear to be intact. Steel and reinforced concrete also fared well.

This lesson gets little or no attention from the average contractor or urban planner.

The principle of using shaped construction

However, now the principal of using shaped construction is beginning to be exploited here and there. Marce Barbier, for instance, is a real pioneer in shelter construction and now promotes his "dome home" as a practical solution to all-around disaster protection – including wartime missile attack. (See his advertisement on page 31 – also his article on concrete domes in the Summer 1994 issue of the *Journal of Civil Defense.*)

American Survival Guide for September 1995 makes an impressive pitch for "Homes of the Future" – domes shaped structures of non-flammable materials (concrete and steel mainly) built by American Ingenuity, Inc., 8777-A Holiday Springs Road, Rockledge, Florida 32955-5805 at prices that outclass conventional construction – a circular house of 3,143 square feet for a little less than $20,000.

The "Dome Home" has other advantages: a healthier environment, easier to heat and cool, lower maintenance costs, etc.

Prediction: the turn of the century will see contractors turning more and more to "dome" houses and other buildings, and their construction will become more and more popular as the years pass. Their combination of safety, utility, economy and modern beauty can't be beat.

Maybe the Eskimos have something with their igloos!

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