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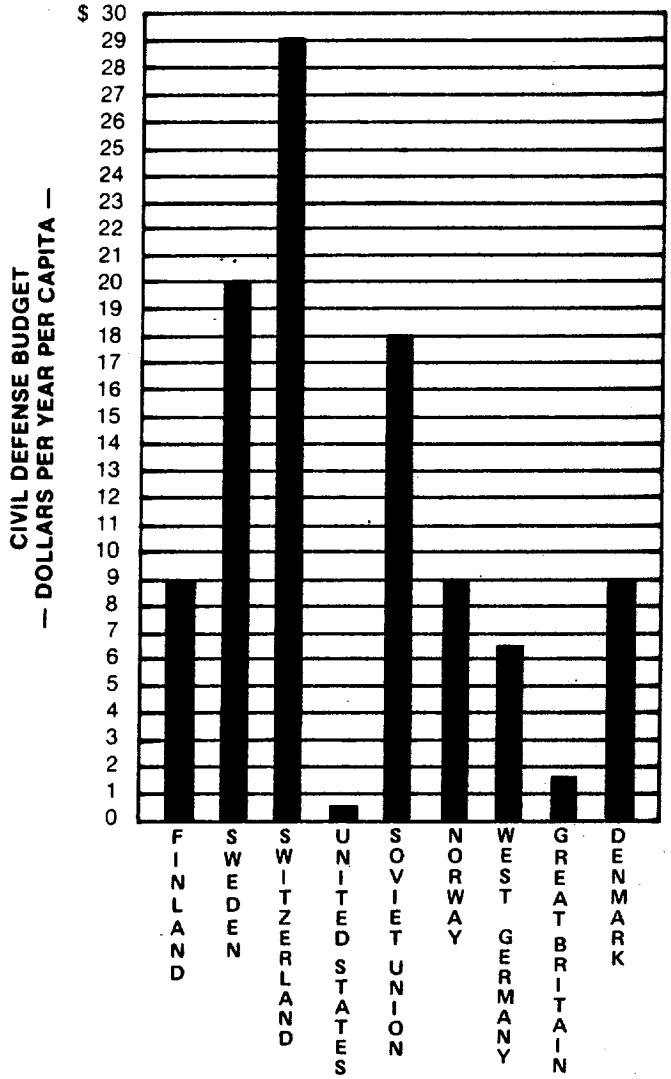

POPULATION

PROTECTION —

WHERE
and
WHERE NOT!

The American Civil Defense Association

Journal of Civil Defense

The American Civil Defense Association

Presenting the Views of Industry, Technology, Emergency Government and Concerned Citizenry

VOLUME XVI — NUMBER 3 JUNE 1983

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COVER

Statistics on civil defense budgets vary with the sources used. Statistics for Finland, Sweden, Switzerland, the United States, the Soviet Union, Norway and Denmark used for this issue's cover come from *Finnsafety News,* a publication of The Finnish Foreign Trade Association in Helsinki. The budget figure for West Germany comes from the West German civil defense publication *Zivilschutz Magazin.* The figure for Great Britain was obtained from C. Bruce Sibley, editor of *Practical Civil Defence* in the United Kingdom.

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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.*

CAPITAL COMMENTARY — Jerry Strope

A Freeze Is Upon Us

April of 1983 was the month the nuclear freeze resolution finally made it through the House of Representatives. The debate didn't go quite as the leaders of the freeze movement had hoped. One of the first bills introduced in this Congress, the freeze resolution had been expected to pass easily and quickly. Last year, it failed by only two votes. And, in the 1982 election the Democratic Party, which was pushing the freeze to embarrass the Reagan Administration, picked up 26 additional seats in the House. Also, the White House was not actively trying to defeat the measure as it was in the last session.

What happened actually was an extended, at times acrimonious, and ultimately educational debate that extended over a period of about two months. Conservative opponents of the freeze took the battle to the foe by offering over 30 amendments to the measure. Their strategy was not simply to be obstructionary but to pin down the proponents to specifics. Freeze advocates were unprepared for this maneuver. Their debating position was that the resolution had only symbolic meaning as a message to the President. When the question as to practical effects were put to them, it became all too evident that the advocacy was based on sloganeering for the most part.

All during April, the debate continued to occupy an unprecedented amount of the House schedule. Despite their claim that the resolution had only symbolic meaning, freeze managers resisted any attempts to amend the wording in any way. An amendment to add the words "and/or reductions" after the vital words "nuclear freeze" failed by only a handful of votes. If passed, it could have been interpreted as an endorsement of the Administration's position in the START talks in Geneva. Another amendment simply to add the words "and reductions" also failed by a close margin. Finally, an amendment to add the phrase "followed by reductions" or words to that effect passed. Now, neither side could claim victory nor have to admit defeat. The modified freeze resolution passed the House by a large margin on the fourth of May. Its fate in the Republican-controlled Senate is problematical.

Hearings on the civil defense budget request were caught up in the freeze resolution debate because the pro-freeze groups are also anti-CD. The chairman of the subcommittee of the House Armed Services Committee concerned with civil defense, Ronald Dellums (D-CA), is pro-freeze and hence anti-CD. He has held three widely spaced hearings on the civil defense program, a most unusual procedure. The first hearing in March was reported in this column last issue. It was notable for Dr. Dave McLaughlin's excellent presentation of FEMA's Integrated Emergency Management System approach to selling the budget. Following this, Dellums apparently tried to set up a full-scale confrontation between civil defense advocates and opponents. But this did not work out. Civil defense buffs had their day on April 5th and the opponents held forth on April 19th.

. . . MOST IMPRESSIVE PRESENTATION . . . MADE BY DR. HOWARD MACCABBEE . . .

The most impressive presentation on behalf of civil defense at the April 5th hearing was made by Dr. Howard Maccabee, president of the Doctors for Disaster Preparedness, a relatively new group closely associated with TACDA. His trenchant criticism of the position taken by the Physicians for Social Responsibility (PSR) and his obvious knowledge of civil defense made for a lively discussion with members of the subcommittee. The April 19th hearing was remarkable for the amount of disinformation presented for the committee record, mainly by Dr. Jonathan Lorch of New York City on behalf of the PSR. Seeming to abandon any direct assault on the ability of civil defense to provide for short-term survival, Dr. Lorch painted a picture of the postattack world in which everyone would die anyway. Among the myths he put forward were that the incidence of cancer and leukemia due to irradiation would approach 100 percent and that postwar agriculture would fail, causing widespread starvation.

The net result of this April melange was that the subcommittee voted to authorize $200 million for civil defense next year, almost exactly half of the increase requested by the Administration. According to observers, Dellums suggested a mark of $163 million, a slight increase over this year's $147 million, despite his rhetorical opposition. Representative Ken Kramer (R-CO) proposed $225 million, well short of the requested $253 million. The compromise $200 million was approved by the full committee on the fourth of May, the same day the freeze resolution passed. □

Russian emigré Robert Kirshensteyn describes here in dramatic detail the civil defense structure of the Soviet Union. So strict are the USSR shelter laws that a new factory is not allowed to begin production until shelter for its workers has been completed and approved. Mr. Kirshensteyn urges America to wake up to its need to protect itself.

CIVIL DEFENSE PROGRAM OF THE USSR

— Robert Edward Kirshensteyn

In the USSR civil defense is also called "ITM-GO", meaning "engineering and technical measures of civil defense".

1

All cities and population centers of the Soviet Union are divided into three hazard categories, according to strength of the expected strike. In addition the strike is also divided in two categories: one with consequences due to radiation only and the other with consequences due to blast and radiation. Depending on the categorization of the town, industrial facilities are generally assigned the same hazard category. However, depending on the significance of the facility for the defense potential, the category attributed to the facility does not coincide necessarily with the category attributed to the town. One can therefore conclude, naturally only as a speculation, that data on the bomb strength expected on a given target result from spying activity of the Soviet Army Intelligence and the KGB. These data are compiled in a special department of the USSR Gosplan (government planning institute), from which they go to the interested ministries, to the Headquarters of the USSR Civil Defense, and through the latter to all civil defense command centers of cities, provinces and republics.

For example, in Moscow, Leningrad, Kiev, Poltava, it is prescribed to the Second Departments of the ministries to utilize standard types of shelters which protect both from blast and radiation, whereas in the city of Gorno-Altaisk, on the Chinese border, from radiation only.

2

Each ministry of the Soviet Union and of the republics has in its structure a Second Department. The Second Department is organized into two subdepartments:

a) conversion of industry to defense production
b) civil defense

The Civil Defense subdepartment of the Second Department directs all works related to the protection of workers and employers from an enemy strike. It has the following responsibilities:

- Issuing mandatory recommendations to all planning organizations in accordance with the categories of installations and cities.
- Verification and approval of the technical plans applicable to the types of shelter.
- Including such shelter plans in the plans of the organizations designing the project and performing the construction of the plant.
- Controlling the execution schedules of the project and of construction.
- Participation in the work of the Governmental Acceptance Commission for the acceptance of the constructed shelter for use.
- Constant monitoring and control of the state of readiness of the shelters for use in case of war.

3

Starting in 1970 the USSR Civil Defense staff intensified its work with the numerous staffs of the cities, counties, regions and republics.

In that same period, the civil defense staffs were assigned technically trained specialists, familiar with standard shelter designs, their adaptation to specific local conditions and their construction.

The civil defense staffs are responsible, among other things for: approval of the technical specifications for the design of shelters, approval of shelter construction projects and participation in the work of the Governmental Commission accepting the shelters for exploitation.

SECRET CATALOG OF STANDARD SHELTER DESIGNS

4

In the USSR there exists a secret catalog of standard shelter designs, with capacities ranging between 150 and 2,000 people. Each type of shelter is provided with blueprints showing the basic elements, full characterization with indication of the category, specification of the required materials and where to obtain them, and the full calculation of estimated cost.

There are two types of shelter construction: detached or built-in.

According to the regulations, detached shelters can only be built inside the territory of industrial installations.

Generally, the aboveground parts of shelters are camouflaged, under warehouses, workshops, garages, class-rooms, etc.

Built-in shelters are usually located under administrative, service and storage buildings, more rarely under industrial production facilities.

In recent years there have appeared in the shelters separate chambers with communicating links to several plants. This was done so that in case the directors of one, two or three plants should die a director who remains alive can manage the group of plants. In this context the shelters at the present time serve two purposes: to save lives and to permit the direction of industrial production from their location.

THE SOVIET UNION HAS SOLVED THE SHELTER PROBLEM FOR APPROXIMATELY ONE-HALF OF THE COUNTRY'S WORKING POPULATION

5

Presumably the interagency liaison is performed in the following manner: The USSR Gosplan receives intelligence data on American war plans. On the basis of this data the Gosplan classifies the cities and industrial targets and informs the ministries and the USSR Civil Defense staffs. The design organizations receive this information from their ministries. The client factories learn about the protection category of their installation or town when signing for the technical data to be used in the design of their shelter.

6

As a consequence of the decision taken, the basic requirement for the number of people to be protected at an installation is the working day shift of workers (the maximum shift) less 5-10% who will be immediately called up for active duty with the Army. The workers of the second shift and the family members of both shifts are not taken into account for the construction of these shelters. Therefore one can consider that at this time the Soviet Union has solved the shelter problem for approximately one half of the country's working population.

One has to add that the subways in the cities of Moscow, Leningrad, Karkhox, Kiev, Tbilissi, Baku, Tashkent, Minsk, Gorki, Novosibirsk, Kuybichev and Sverdlovsk will serve as shelters for many millions of people. They are planned and built with this purpose in mind. Hermetically sealing doors are visible in many underground stations and walkways.

The construction of shelters in residential buildings is not carried out in a systematic manner. Their construction requires in each instance a special decision.

Robert Edward Kirshensteyn, former chief engineer of the design department for the machine building plants of the Moscow Design Institute.

ALL YEAR ROUND ALL PLANTS GIVE COURSES IN CIVIL DEFENSE

7

Recognizing the inevitability of retaliation, the Soviet Union has begun to build in recent years so-called "mirror factories" (duplicate factories). For the ministries duplicate buildings were erected 40-50 Km. away from Moscow, completely equipped for operation with shelters and clusters of residential buildings.

For instance the building for the Light, Food and Appliances industry has such a complex in the settlement called "Pine Grove." The Riazan defense radioelectronic plant "Red Flag" or P/ya (Post Box number) 168 has a second plant complex outside of Riazan.

8

In the course of 1974-76, two or three attempts were made to organize an evacuation exercise of all Moscow plants beyond the city line. Sets of instructions were distributed to plant managers, showing the destinations, the route to follow, and approximate time of execution. And each time these exercises were called off, because the work overload made it impossible to organize them.

9

Any departure from the standard shelter design for purposes of adaptation or construction has to be approved by a Civil Defense staff, but generally with the rare exceptions it refuses to approve any changes.

In case the plant is built but the shelter is not yet ready, it is not permitted to put the plant into operation. This fact is still another confirmation of the growing importance attached to the civil defense program in recent years.

10

All Soviet institutions, clubs, palaces of culture, libraries, etc. are literally crammed with posters, drawings, diagrams, brochures and books on civil defense problems. All are illustrated in colors and written in a fashion which is understandable even by the most uneducated reader.

All year round all plants give courses in civil defense, and those called to military duty also get instruction in civil defense at their military commissariates as a part of their military training.

ANY TRADE OF THE WEST WITH THE USSR HELPS THE LATTER IN ITS EFFORTS TODAY TO DESTROY THE WEST TOMORROW.

11

All trade with the Soviet Union helps it prepare itself for war. So for instance the British firm Wilkinson Sword sold to the Soviets two complete sets of equipment for two plants producing 1 billion razor blades in Moscow and Leningrad.

The profit earned from the sale of the razor blades manufactured with the English equipment, with English technology installed by English engineers, technicians and workmen, permitted the Soviet Union to build and pay for two shelters at these plants in Moscow and Leningrad.

In this manner the British firm helped the USSR prepare itself for war. We should not close our eyes to these facts.

In the same way any trade of the West with the USSR helps the latter in its efforts today to destroy the West tomorrow.

America does not have an efficient civil defense program. At the same time the USSR has an effective civil defense program for nearly all its working population in the event of nuclear bombardment.

America must protect itself!!! □

SPOTLIGHT

NEW CD ORGANIZATION: ANSSA

Want a $10,000 shelter but can't afford it?

In the Miami, Florida area "ANSSA" may be the answer. ANSSA is the acronym for the American Nuclear Shelter and Survival Association. In the past two months Clive Baldwin, shelter builder and popular entertainer has formed ANSSA (PO Box 403305, Miami Beach, FL 33140) literally to provide an answer to sparse shelter buffs who can't hack the price of a commercially-produced shelter.

It works like this: an ANSSA member, having decided he will invest in the *materials* needed for his shelter, puts up $2,000. Baldwin, in the shelter business and possessing the know-how, lines up the materials at best-possible prices. Then he furnishes free tools, planning, schedule and supervision. Other ANSSA members provide — free of charge — that which invariably costs the most: labor. Ergo: the investor comes up with a $10,000 shelter for $2,000.

At least this is the theory. ANSSA shelter project no. 1 is now shaping up in Miami Beach. Down the road a few weeks or months we should have the "anssa" to ANSSA project no. 1.

(Note: On April 19th Clive Baldwin appeared as guest of Bill Smith on a 3-hour WIOD radio show in Miami Beach. Given free reign by Smith, Baldwin handled phone-in questions — many of them antagonistic — with expertise, finesse and humor. And plugs for preparedness.)

•

UNRAVELING THE "UNTHINKABLE"

Practical Civil Defence (British) in its March-April 1983 issue features "Facing the Unthinkable" by David Hill. He poses some thoughts for those advocating the throwing-in of the nuclear towel:

"Britain, and in particular, England, has escaped invasion for so long that the inhabitants have forgotten the consequences of being conquered."

"We come back to the twin topics of the oppression of conquered people and of unilateral disarmament. Often it is the same idealists who are concerned about both these causes. These idealists never notice the incongruity of their two sets of arguments. What is the point lamenting that some race has been conquered and is now oppressed, and at the same time advocating unilateral disarmament, thereby ensuring that we become a conquered people?"

Practical Civil Defence appears bimonthly and is the worthy successor to *Protect & Survive Monthly* (published by the valiant PSM editor Bruce Sibley who bought out PSM rights). Americans and Canadians may subscribe to *Practical Civil Defence* for $38 a year with prompt bulk air mail delivery to distribution points. Write:

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ZIVILSCHUTZ GETS NEW EDITOR

The Swiss civil defense magazine *Zivilschutz* changed editors on April 1st with Kurt Venner going to a new post and Heinz Müller relieving him. The 32-year-old Müller has been editor of the *Berner Zeitung. Zivilschutz* is printed monthly and uses all four Swiss languages (German, French, Italian and Romansch).

•

DDP ACTIVITIES ON UPSWING

Doctors for Disaster Preparedness (DDP), an organization which was conceived at TACDA's seminar in Wichita last year, is making steady progress. In addition to making medical news (see excerpts of story from the *American Medical News* under "Too Good To File") DDP has presented hard-hitting congressional testimony (p. 14) and is planning a back-to-back seminar with TACDA for the fall (p. 22). Its first newsletter appeared in May, and interest is building at an ever-increasing clip.

One physician member, Dr. Alan N. Breck of Cloudcroft, New Mexico has sent out 200 membership applications to colleagues fortified with a cover letter.

DDP representatives have also appeared on several TV and radio programs.

(DDP information is available from its executive office at PO Box 3482, Fairfax, Va. 22038 — phone 703-352-0444 — or from its administrative office, PO Box 1057, Starke, Florida 32091 — phone 904-964-5397.)

•

BRIEFS . . .

In a memorandum to the President and Congress, FORESIGHT editor Dick Oster urges that the program to spend $5 billion over the next few years on VA hospitals consider *dispersion* and *shielding*. He quotes a report of a team of experts which surveyed Japanese damages in 1945/6: "For example, by wise selection of dispersed sites the present hospital building program of the Veterans Administration could be made to lessen our congestion without additional cost!" Cheaper that way says Oster, so why not do it even though we are 37 years late.

•

Shelter-Rad Technology, .Inc. offers four courses in its "1982 Multiprotection Design Summer Institute" at the National Emergency Training Center (Emmitsburg, MD) July 18-29. One of the week-long courses is "Protective Construction" which includes blast effects and designing. No tuition. (See UPCOMING, p. 30.)

•

The Oregon Security Council (5650 S.E. 85th Ave., Portland, Oregon 97266) has reprinted Senate Resolution 100 introduced by Senators Malcolm Wallup (R-WY) and Paul Laxalt (R-UT). It reads in part: "Now be it Resolved that — It is the Sense of the Senate that the President expeditiously recommend to the Congress budgetary steps necessary to protect the American people by building weapons for developing in space, at the earliest possible date, with the capability of destroying ballistic missiles which might be launched against our country."

•

TOO GOOD TO FILE

The *TACDA Alert* for May reproduced a March 16 resolution by the California Medical Association which reads in part:

. . . WHEREAS — it is likely that even after an all-out nuclear war there will be many pockets of survivors who are relatively unscathed.
AND WHEREAS — it is appalling that organized medicine has not prepared plans to assist . . .
BE IT THEREFORE RESOLVED — that the California Medical Association will work with state authorities in developing statewide contingency plans for dealing with the medical consequences of limited or all-out nuclear war.
AND BE IT FURTHER RESOLVED THAT — the California delegation to the AMA be instructed to present a similar resolution to the AMA for a cohesive nationwide plan to deal with the public health consequences of nuclear war.

•

Unrestrained emphasis on Soviet civil defense by Soviet authorities is portrayed on page 6 of this issue of the Journal. The Soviet media, however, are properly shocked by any signs of civil defense interest in the West. In an article appearing in Moscow's *Zarubezhnoye Voyennoye Obozreniye* Lt. Col. V. Goncharov reports: "Foreign military observers stress that results achieved in building shelter systems vary among the NATO countries, both in volume of work being undertaken and in degree of effectiveness of these efforts. However, stepped-up activities in the area of providing protection to the civilian population in a number of countries, particularly the United States, the FRG, and Great Britain, indicate that this question is assuming increasing importance in the formulation of criminal plans by the leaders of the aggressive NATO block to wage war with the employment of nuclear missile weapons."

The implication appears to be that the current reckless effort by FEMA to increase the civil defense budget for the United States from a level of 60¢ per person per year to $1.10 per person per year is threatening the Soviet Union, which spends $18 per person per year on its civil defense.

Is the United States medically prepared to handle a major disaster?

No, says a group of concerned physicians called Doctors for Disaster Preparedness (DDP) . . .

"Those of us who have been involved in disaster work know that we are never adequately prepared for a disaster," said Dr. [Max] Klinghoffer, a general practitioner and emergency physician who spent 17 years as head of disaster preparedness at Chicago's O'Hare Airport.

"We plan to do the best we can and yet it never seems really adequate. One of the fallacies of all this planning over the years is that many people consider emergency care the same as disaster care, and they are not. They're quite different," Dr. Klinghoffer explained.

"Since World War II there have been great advances in our methods of emergency care. It has become very sophisticated. There is no doubt we are salvaging many patients who would not have been salvaged prior to these methods and systems.

"However, there has not been a parallel advancement in disaster care. There are many areas where disaster care is deficient or almost nonexistent.

". . . We feel that no matter what the scope or the magnitude of the disaster, we have a definite inescapable responsibility to give the best care we can to as many casualties as possible."

— American Medical News

•

. . . Robert S. Cooper, director of the Defense Advanced Research Projects Agency (DARPA), actually predicts that nuclear weapons may be headed for technological oblivion.

A concept emerging in conservative circles, dubbed "strategic homeland defense" or "assured survival," proposes one way to achieve nuclear disarmament. Diplomatic agreements to reduce nuclear weapons would be coupled with sophisticated conventional weapons and advanced defenses to protect the United States against Soviet missiles, should they be launched . . .

In the second stage, a BMD system to block most offensive missiles would be coupled with precise conventional weapons for retaliation. Robert Cooper at DARPA predicts these could make nuclear arms obsolete. Already the Department of Defense has given Lockheed Missiles and Space Co. a $10 million contract to build conventional warheads for the Trident C-4 submarine-launched ballistic missile. In the future, missiles carrying conventional explosives equipped with "eyes" could recognize targets such as transformer yards, fuel depots, and missile silos. Thousands of such missiles or laser beams could cripple the Soviet military machine without inflicting significant civilian casualties. Retaliation would become credible without nuclear weapons.

. . . How this concept fares as it emerges from the conservative closet will be a major question in the new Congress.

— Carolyn Meinel in
Technology Review

•

It is an affront to our intelligence to be told that if nuclear war comes, we should allow ourselves to be annihilated since there is nothing we can do to protect ourselves. I, for one, will not sit idly by and allow my family to die a needless death because some well-meaning but misguided and misinformed individuals have decided that a shelter system will not save lives — and neither should this nation . . .

It seems ludicrous that we who were the first to develop and use the atomic bomb are the last when it comes to protecting our citizens from its effects.

If we can build adequate shelters for our government officials why not have protection for our citizens? If our population is left unprotected, who will remain alive for our leaders to govern? . . .

I suggest that, to begin with, we require that all new multiple dwellings, office buildings, public facilities and industrial plants have adequate shelters built into them during construction . . .

— Robert Velten, President
NSP Survival Consultants

Nuclear scientist Carsten M. Haaland in this article answers the frequently posed-seldom answered question: "How deep should I bury my shelter to give it a fallout protection factor (FPF) of a designated desired value?" To reach the government's minimum standard of 40 FPF, for instance, you need between 55 and 85 pounds per square foot overhead (depending on roof area and type of shielding material). For an FPF of 100 you need 95 to 120 lbs./sq. ft. For an FPF of a million . . . well, let Haaland zero you in.

UNDERGROUND SHELTER — HOW MUCH FALLOUT PROTECTION?*

— Carsten M. Haaland
Energy Division, Oak Ridge National Laboratory

The purpose of this article is to show by a single, simple example how effectively ordinary earth can reduce the penetration of gamma radiation into a buried shelter. It is possible, and not beyond reasonable attainment, to have a fallout shelter so well shielded that the radiation levels inside the shelter will be less than ordinary, day-to-day radiation levels, even when the ground above is covered with an extremely heavy pile-up of radioactive fallout. If the radiation intensities at the surface above the shelter are as high as 10,000 R/hr, the radiation intensity in the shelter can be kept below 0.01 mR/hr**. This low radiation level is equal to the average U.S. natural background radiation level at the earth's surface (Ref. 1). The reduction in radiation intensity from 10,000 R/hr at the surface to 0.01 mR/hr in the shelter can be obtained with about 8 ft. of earth above the shelter ceiling and a well-designed entranceway.

For this example, a cylindrical shape is chosen, one standing like a soup can, with a flat floor and a flat ceiling, and walls curved in a circle around the central, vertical axis. This shape is not a common shape for human living space, but it is one of the easiest shapes to handle mathematically. A shelter with a floor in the shape of a square instead of a circle but with equal floor area and the same height would have slightly (12.8%) more wall area. For this reason, it would have slightly higher radiation levels for the same depth of earth cover and the same spread of fallout above because more gamma radiation is scattered into the shelter through the additional wall area. This additional gamma radiation becomes negligible for shelters with 3 ft. or more of earth cover, as will be seen later. Therefore, the data presented here can be considered to apply equally as well to shelters with a square floor shape as to those with a circular floor shape, as long as they have equal floor area and height, and the earth covering is about 3 ft. or more.

In order to keep this example as simple as possible, it will be assumed that the entranceway to the shelter is professionally designed so that it permits only an insignificant amount of additional radiation to enter the shelter. This assumption allows us to consider the data for the shelter alone, without the additional complication of an entranceway. Some of the problems of designing entranceways will be discussed later in this article.

The data for Fig. 1 were taken from National Bureau of Standards Monograph 42 by Lewis Spencer (Ref. 2). NBS 42 presents many graphs that summarize the results of lengthy computer calculations using various mathematical functions for analyzing the penetration of gamma radiation. These calculations take into account the *build-up factor,* a factor that includes scattered gamma radiation resulting from the fact that many gamma photons do not lose all of their energy in just one interaction with matter, but will travel on, possibly for several more interactions, before all of their energy is absorbed and they cease to exist.

There are two curved lines in Fig. 1 — the bottom line for a cylindrical shelter of 5-ft. radius and the top line for one of 50-ft. radius. In the little inset drawing in Fig. 1, there is a small dot labeled "D". This dot represents the position of a radiation detector inside the shelter. Note that it is located at the center of the shelter and 5 ft. down from the ceiling.

The dimension "X" in the drawing indicates the total *mass* of material above each square foot of area of the shelter ceiling, not the distance. By denoting X this way, we can take into account the effect of different

*Derived from research jointly sponsored by the Federal Emergency Management Agency and the U.S. Department of Energy under Contract W-7405-eng-26 with the Union Carbide Corporation.

**mR is an abbreviation for "milliroentgen," which is one-thousandth of one roentgen.

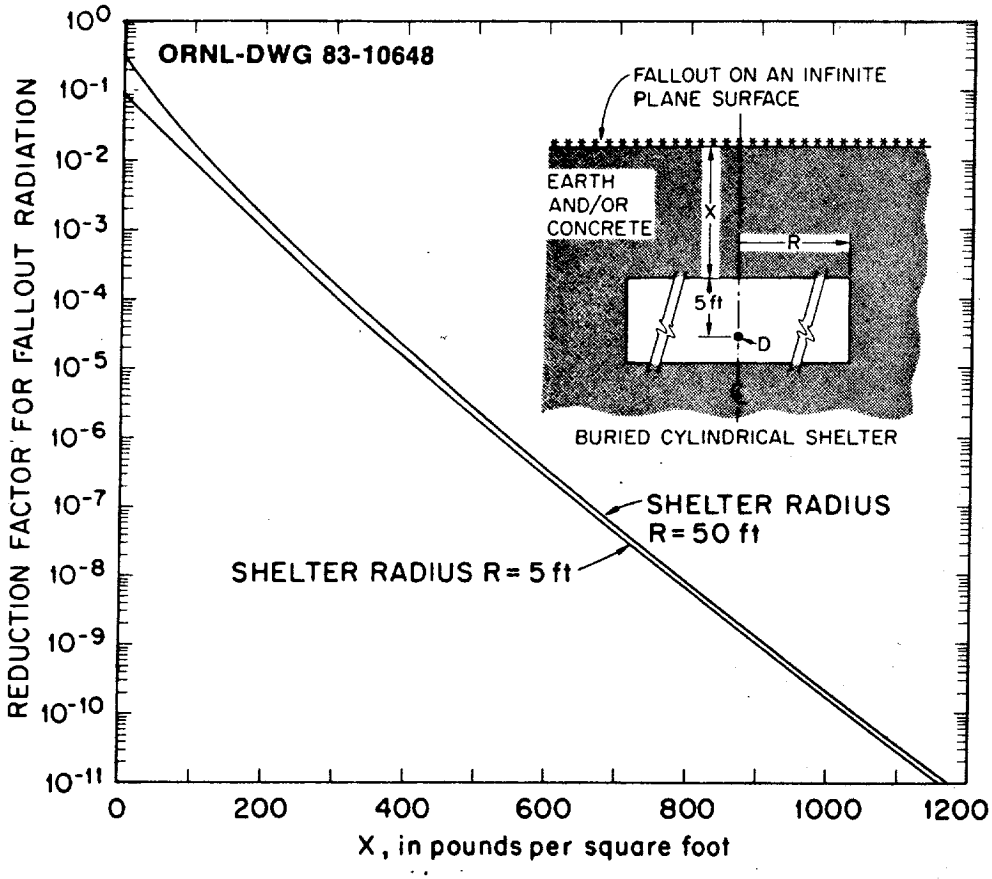

Fig. 1 Graph showing the reduction factor for fallout radiation on the ground above a buried cylindrical shelter covered with a mass of X pounds over every sq. ft. of ceiling. The shelter stands like a soup can with the flat parts on the top and bottom.

materials that may be above the shelter, whether concrete, earth, sand, stone, or steel. The ordinate, or vertical distance on the graph, gives the reduction factor for fallout radiation at the location of detector "D" in the shelter when the total mass between the shelter ceiling and the source of radiation on the ground above is X pounds for each square foot of area of the ceiling.

Suppose the roof of the shelter is made of concrete, which has a density of about 144 lbs. per cubic ft., and is covered with ordinary earth, which has a density of about 100 lbs. per cubic ft. If the roof is 8-1/3 inches thick, it will contribute 100 lbs. per sq. ft. to the value of X. (If it were a foot thick, it would contribute 144 lbs. per square foot of ceiling.) Each foot of earth above the roof will contribute another 100 lbs. to each square foot of ceiling area.

In the case we are considering, where the roof is concrete 8-1/3 inches thick and covered with earth, the first "100" along the abscissa (the horizontal line across the bottom of Fig. 1) represents the 100 lbs. per sq. ft. of the concrete ceiling, and each additional "100" represents another foot of earth cover. If the shelter has 3 ft. of earth cover, the value of X is 400 lbs. per sq. ft. A line projected vertically from X = 400 intercepts the two curves to give the values of the reduction factors for fallout radiation for the two sizes of shelter. These values are read by projecting lines horizontally from the intercept points to the scale on the left side of the figure. By this procedure we find that the reduction factor is about 1.4E-5*, or 0.000014, for the shelter of 5-ft. radius, and about 1.9E-5, or 0.000019, for the shelter of 50-ft. radius.

These values apply for the case, which we will call the reference case, where the ground surface above the shelter is as smooth and flat as a dance floor. For a flat earth surface covered with a grass lawn, these reduction factors would be reduced by a factor of 1.5 to 2, depending on the roughness of the

*Modern computer notation is used, in which the symbol E-5 means that the decimal point occurs five places to the left of the point where shown. Similarly, E+6 means that the decimal point is located six places to the right of the point where shown.

Table 1. Reduction Factors for Fallout Radiation

(Cylindrical shelters with 8-1/3-inch-thick flat concrete ceilings. Shelter A: 5-ft. radius; Shelter B: 50-ft. radius)

Earth cover (ft)	Reduction Factor		FPF*		Rad. level at "D"**	
	Shelter A	Shelter B	Shelter A	Shelter B	Shelter A	Shelter B
0	9.2E-3	1.7E-2	109	59	92 R/hr	170 R/hr
1	9.6E-4	1.5E-3	1040	670	9.6 "	15 "
2	1.1E-4	1.6E-4	9090	6250	1.1 "	1.6 "
3	1.4E-5	1.9E-5	71,400	52,600	0.14 "	0.19 "
4	1.9E-6	2.5E-6	5.3E+5	4.0E+5	19 mR/hr	25 mR/hr
5	2.7E-7	3.5E-7	3.7E+6	2.9E+6	2.7 "	3.5 "
6	3.9E-8	5.0E-8	2.6E+7	2.0E+7	0.39 "	0.50 "
7	6.1E-9	7.7E-9	1.6E+8	1.3E+8	0.061"	0.077"
8	9.8E-10	1.2E-9	1.0E+9	8.3E+8	0.0098"	0.012"

*FPF — Fallout Protection Factor (also called Protection Factor). See the text for a definition.

**The location "D" is indicated in the inset in Fig. 1. The radiation level at the surface is assumed to be 10,000 R/hr.

Conversion Table

Reduction Factor	Fraction	Decimal Fraction	FPF (Fallout Protection Factor)
10^{0}	1/1	1.0	1.
10^{-1}	1/10	0.1	10.
10^{-2}	1/100	0.01	100.
10^{-3}	1/1,000	0.001	1,000.
10^{-4}	1/10,000	0.0,001	10,000.
10^{-5}	1/100,000	0.00,001	100,000.
10^{-6}	1/1,000,000	0.000,001	1,000,000.
10^{-7}	1/10,000,000	0.0,000,001	10,000,000.
10^{-8}	1/100,000,000	0.00,000,001	100,000,000.
10^{-9}	1/1,000,000,000	0.000,000,001	1,000,000,000.
10^{-10}	1/10,000,000,000	0.0,000,000,001	10,000,000,000.
10^{-11}	1/100,000,000,000	0.00,000,000,001	100,000,000,000.

surface. If the fallout radiation intensity is 10,000 R/hr at the surface for our reference case, we multiply 10,000 by the reduction factors obtained from the graph to estimate the radiation levels at the point "D" in the shelters. We thus obtain the estimated radiation rates at the point "D" of 0.14 R/hr for shelter of 5-ft. radius, and 0.19 R/hr for the shelter of 50-ft. radius.

The graph can be used to construct a table of values, shown in Table 1. The first column shows the thickness of earth cover in feet above the concrete ceiling. The next two columns show values of the reduction factors. These numbers can also be read from the graph. The 4th and 5th columns are the reciprocal of the 2nd and 3rd column figures. (The reciprocal of a number is the number one divided by the number.)

The reciprocal of the reduction factor is the FPF (Fallout Protection Factor) in this case. In the past, FPF has been called the PF, or Protection Factor. The use of PF to describe the radiation protection of a building has led many people to believe, mistakenly, that a building with a high Protection Factor would provide good protection against blast effects from a nuclear weapon. For example, the floors above the fourth and at least three or four stories below the top floor in a skyscraper would be rated with a high FPF, perhaps as high as 1000 at certain places, providing excellent fallout protection but very poor blast protection. The use of the unambiguous term "FPF" instead of "PF" is recommended in the proposed FEMA handbook *Radiation Safety In Shelters* (Ref. 3).

The concept of FPF has often been misused because people do not understand that it is defined specifically for making mathematical calculations. It is not appropriate to say that a *building* has a certain FPF. The radiation shielding will not only vary from room to room but from point to point within a room. Furthermore, the FPF at a point in a building will depend not only on the structure of the building itself, but on the presence or absence of other buildings, trees, vegetation, hills, or valleys surrounding the building. These objects will not only affect the distribution of the fallout, but will also determine how the radiation from the fallout is absorbed and scattered.

The FPF of a point is defined as the ratio of the radiation level measured at that point to the radiation level that would be measured at the same geographical location 3 ft. above an imaginary, perfectly flat, smooth plane with a radius of at least one mile around the point, and with the same horizontal distribution and kind of fallout. This situation is easy to visualize for our buried, cylindrical shelter because from the beginning the earth above the shelter was assumed to be a flat, smooth plane.

If the buried, cylindrical shelter has no earth cover, that is, the roof is just the 8-1/3-inch-thick concrete slab, it can be seen from both the graph and the table that the FPF at point "D" in the small shelter is only about 2 times greater than at point "D" in the large shelter, which has 100 times more floor area. The higher radiation levels in the larger shelter result from scattered radiation from the larger area of the ceiling. As the amount of earth cover is increased, this difference in scattered radiation between the large and small shelter steadily decreases. With 3 ft. of earth cover, the radiation levels at "D" in the large shelter are only 1.4 times greater than for the smaller shelter, even though the top-plus-side area (for a shelter with an interior height of 8 ft.) of the large shelter is over 30 times that of the small shelter. This comparison justifies the earlier statement that these data for cylindrical shelters apply equally well to shelters with square-shaped floors of equal area and the same wall height, when the earth cover is 3 ft. or more.

If the detector "D" is moved to either side at the same height, the radiation levels would slightly diminish. If it is moved up, the radiation levels would increase slightly, and if it is moved down, the levels would decrease.

As mentioned earlier, the design of the entranceway has been omitted here to keep this article short and simple, but it may be useful to indicate what is involved. The simplest and cheapest entranceway to a shelter buried in open ground away from buildings would be a manhole with a trapdoor on top and a ladder leading down to the level of the floor of the shelter. This manhole would need to be located at some distance from the shelter to allow room for the zigzags used to reduce the level of scattered radiation reaching the shelter. Each ninety-degree turn may reduce the scattered radiation 10 to 100 times, depending on the cross-section of the tunnel, the length between turns, and the use of specially designed recesses and/or absorbing material at the turns. Heavy doors mounted on wheels may be used to reduce the number of right-angle turns needed to make the contribution to the radiation in the shelter from the entranceway insignificant compared to the radiation entering through the roof of the shelter.

Two shelter sizes have been considered, one of 5-ft. radius and the other of 50-ft. radius. The larger shelter would be designed to accommodate several hundred people. (It would also have support columns distributed throughout the floor area to hold up the ceiling. These columns would have a negligible effect on the distribution of gamma radiation.) The entranceway would then have to be specially designed to handle the large volume of traffic, in addition to providing radiation shielding. From this brief discussion it should be evident that the design of entranceways is not easy. Some of the many problems associated with blast shelter entranceways also apply to fallout shelters. These problems have been discussed in some detail in App. E, "Entranceways to Blast Shelters" (Ref. 4).

8 FT. OF EARTH COVER ABOVE THE CONCRETE ROOF . . . FPF ABOUT ONE BILLION!

From the bottom line of Table 1, it is seen that 8 ft. of earth cover above the concrete roof reduces the surface radiation level of 10,000 R/hr to around normal background levels in the shelter, namely, around 0.01 mR/hr. The FPF obtained by this construction is about one billion! In order to maintain this low radiation level, the shelter would have to be well-ventilated (as it would have to be anyhow, if it is filled at one person per 10 sq. ft. of floor space, in order to prevent overheating). Without ventilation the radiation levels in the shelter might be doubled or tripled due to the buildup of radon gas and its radio-

active daughters. Radon gas is given off by the decay of small quantities of uranium in the walls and surrounding earth (Refs. 5 & 6).

In contrast to this FPF of about a billion, over 90% of the 350 million National Shelter Survey spaces (as of 1977) have an FPF of less than 2000 (Refs. 7 & 8). Deep caves and mines can provide very high FPFs, up to billions and more, provided that the entranceways are long, narrow, and winding. In the present situation, most people in this country will be lucky to find a shelter, if they ever need it, with an FPF between 25 and 100.

A surface radiation level of 10,000 R/hr is extreme. It would result only from fallout from many upwind, multimegaton, surface bursts. Such a heavy pile-up of fallout might occur downwind from large complexes of ICBM silos. After a large attack, it has been estimated (Ref. 9) that about 2% of the area of the contiguous 48 states might be subjected to this intensity of fallout radiation. The radiation rate would, however, fall rapidly, decaying to 300 R/hr or less within two days after arrival, the level depending on the age of the fallout at arrival.

Under these circumstances, a shelter with an FPF of "only" 400 to 500 may be sufficient to prevent the occupants from experiencing the first symptoms of radiation sickness — nausea, tiredness, or malaise. These symptoms may begin for a few people within a few days after an accumulated exposure of only 50 roentgens, and for others they may not begin to be noticed until an exposure of 200 roentgens (Ref. 10). Such a shelter may prevent deaths due to radiation exposure from fallout throughout the period of attack and the first several months after. But by not providing additional protection, the risk of cancer in later years may be increased (Ref. 11). For those constructing their own shelters within constraints of a budget, the costs of additional protection must be weighed against the benefits and risks. I will venture to say that very few people will have shelters that reduce external radiation by a factor of a billion! □

APPENDIX

Those who are mathematically inclined may be interested in how the data from L. Spencer's *Structure Shielding Against Fallout Radiation From Nuclear Weapons* (Ref. 2) was extrapolated from the lowest data point of 10^{-6} given in that monograph to the lowest value of 10^{-11} given in this paper. The values of the reduction factor shown in Fig. 1 are given by Eq. (32.1), p. 57, Ref. 2. The reduction factor is the product of two other factors, a geometry factor and a barrier factor. An extrapolation is necessary for the barrier factor, called L(X). A graph of L(X) vs X, based on calculations, is shown in Fig. 28.2b, p. 33, Ref. 2., down to a lowest value of $L = 10^{-6}$. The graph cannot be approximated by a straight line, primarily due to the contribution of the gamma buildup factor. The actual calculation of the barrier factor is tedious and time-consuming even for the largest computers.

The linear slope of the barrier factor curve, Fig. 28.2b, Ref. 2, was measured at five different points. The five values of these slopes were plotted on log-log graph paper, where it was found that they formed a straight line. The differential equation determined by this line was used to determine a synthetic function representing the barrier factor. This function is given by

$$L(X) = 0.4358\exp(-0.0641X^{0.841}) \qquad (1)$$

The constant upward curvature in both curves in Fig. 1 indicates that the tenth-value concept will give only a rough approximation to the reduction factor. According to the tenth-value concept, every layer of a certain thickness of a given material will reduce the gamma penetration by a factor of ten.

The 1964 edition of *The Effects Of Nuclear Weapons* gave a tenth-value thickness of 12 inches for earth for fallout gamma rays (p. 651). A straight line drawn tangent to either of the curves in Fig. 1 at the value X = 200 will represent the tenth-value concept for a tenth-value of 12 inches for earth (or 100 lbs per sq ft). (At X = 400 the tangent will represent a 14-inch tenth-value). According to Fig. 1, the tangent to the curves at X = 200 (corresponding to a 12-inch tenth-value) would result in an overestimate of the reduction factor by a factor of about 5 at X = 1000.

A tenth-value thickness for fallout gamma-rays is not given in the 1977 edition of *The Effects of Nuclear Weapons* (Ref. 12). However, on page 441 a dose transmission factor of 0.0002 is given for a structure three feet underground. This structure would correspond to a buried cylindrical structure with a concrete slab roof 8-1/3 inches thick and two feet of earth above it. From Table 1 the reduction factor for a shelter of 50-ft radius with two feet of earth above the roof is given as 0.00016, in good agreement with the value given in the 1977 edition of *The Effects Of Nuclear Weapons.*

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TESTIMONY — FY 1984 CIVIL DEFENSE BUDGET (Condensed)

(BEFORE SUBCOMMITTEE ON MILITARY INSTALLATIONS AND FACILITIES OF THE HOUSE ARMED SERVICES COMMITTEE)

— Delivered by Richard E. Sincere, Jr.

The American Civil Defense Association holds a simple, plain position: Civil defense against nuclear attack is a *moral imperative*, a *political obligation*, and a *strategic necessity* . . .

The Question of Survival

No intelligent person could deny that in the event of nuclear war, there will be survivors. Even a full-scale war between the superpowers would have limited effects, and certainly would not extinguish the human race. If the worst should happen, the question would then be how to deal with survivors. Estimates vary, but most experts tell us that even with a surprise attack against the United States — with no civil defense preparations — 60 to 80 million people would survive unharmed. Many others would survive with injuries, shock, and sickness. Recognizing this, we must direct our energies, wisdom, and compassion toward preparations for treating the sick and injured, establishing law and order, providing food and shelter, and burying the dead.

However, since a surprise attack is unlikely, proper civil defense preparations can significantly mitigate the effects of a nuclear attack.

Related to the question of survival is the perpetual accusation that an adequate civil defense program will make nuclear war more "thinkable" and hence more "likely." The fact that this hearing is being held means that nuclear war is "thinkable" — we have been thinking about it for almost forty years. In fact, civil defense on both sides increases strategic stability and makes war less likely. Nobel laureate Eugene Wigner told the International Seminar on the World-Wide Implications of a Nuclear War: "A world in which neither of two opponents can destroy each other is much, much more stable than one in which each can destroy the other."

The moral, political, and strategic implications of these facts are vital to our discussions of the Fiscal Year 1984 FEMA Authorization.

Civil Defense: A Moral Imperative

The distinguished Catholic philosopher and historian Frederick Copleston, S.J., has reduced the moral principle to its essence: "It clearly is not a government's job to render defenseless those whom it is committed to defend." Theologian John Courtney Murray remarked that while the President of the United States can turn his own cheek, he cannot turn the cheeks of 200 million American citizens. In the face of unjust aggression, it is unequivocally immoral to leave civilian populations vulnerable to enemy attack.

Respect for human rights and the dignity of each individual is the basis of our democracy. Our fundamental rights include life and personal security. This right transcends, but does not override, all other human values. Our nuclear deterrence policies for the past thirty years have been successful instruments for safeguarding life and freedom for the United States and its allies. However, the U.S. government has failed to come to grips with the horrifying prospect of what to do if deterrence fails. The primary purpose of civil defense is to save lives and ameliorate suffering if by accident or design a nuclear war should occur.

Disregard for this simple truth has led to the irony of certain Catholic bishops — notably Walter Sullivan of Richmond and John R. Quinn of San Francisco — refusing to cooperate with the government in preparing shelters and hospitals for emergency use. How odd for men of mercy to refuse medical care and shelter to the suffering! They should heed the wisdom of Lutheran theologian and martyr Dietrich Bonhoeffer:

> If there is even the slightest responsible possibility of allowing others to remain alive, then the destruction of their lives would be arbitrary killing, murder. Killing and keeping alive are never of equal value in the taking of this decision; the sparing of life has an incomparably higher claim than killing can have . . .

As if speaking to those medical professionals who proclaim the hopelessness of nuclear disaster, who say life after a nuclear explosion is not worth living, Bonhoeffer went on eloquently:

The distinction between life that is

EXCERPT FROM TESTIMONY OF

DR. HENRY C. HUNTLEY, M.D., M.P.H.

Vice-President, Doctors For Disaster Preparedness

A reasonably adequate civil defense program would cost much less than 1 percent of the proposed defense budget and would at the very least double the number of survivors in the first year. The health preparedness part as I suggested could be maintained at a cost of less than 40 million dollars per year. With a potential savings of 10,000,000 lives this is a very cheap program.

Civil defense will give the nation an opportunity to rebuild and continue our society. We owe future generations the opportunity for political, religious and philosophical freedom.

Civil defense does not provoke or invite enemy attack. I expect that all of us feel more threatened by missiles pointed in our direction than we do by the fact that Russia is doing something to protect her citizens.

*George Washington observed that attack is much less likely if the country threatened by attack is prepared to resist attack. And the Swiss say in the same vein that the most important objective of a good civil defense is that it never be used. — Ed.

worth living and life that is not worth living must sooner or later destroy life itself . . . We cannot indeed ignore the fact that precisely the supposedly worthless life of the incurably sick evokes from the healthy, from doctors, nurses and relatives, the very highest measure of social self-sacrifice and even genuine heroism; this devoted service which is rendered by sound life to sick life has given rise to real values which are the highest utility for the community.

A commitment to civil defense manifests the highest human virtues.

The Second Vatican Council stated firmly: "Any act of war aimed indiscriminately at the destruction of entire cities of or extensive areas along with their population is a crime against God and man himself. It merits unequivocal and unhesitating condemnation." The American Civil Defense Association is not unique when it joins in this condemnation; it believes that a defense based solely on the deployment of more numerous and more destructive offensive weapons is morally repugnant. In the words of eleven Christian and Moslem religious leaders from around the globe who met in Vienna last January, "Genuine peace cannot be based on mutually assured destruction; balanced nuclear terror mocks the message of love shared by all religions." However, a corollary of this belief is that the United States government (and the Soviet government, for that matter) has a moral obligation to protect its people against weapons of mass destruction, including nuclear weapons.

War is evil, not in itself but because it causes suffering and death. To alleviate suffering and death is intrinsically a moral good. To commit our country to civil defense is to affirm in a clear way our commitment to the sacredness of human life.

Civil Defense: A Political Obligation

The United States is obliged to protect its citizens on two levels: by our national Constitution and laws and by international agreement.

The preamble to the Constitution states that one purpose of the U.S. government is "to provide for the common defense." To do this, the federal government has over the years established the armed forces, taken up arms against enemy invaders, and provided police protection not only for our citizens but for those of our allies.

To lessen our vulnerability, Con-

EXCERPTS FROM TESTIMONY OF

STEPHEN H. MAYERHOFER

Executive Director, The American Civil Defense Association (TACDA)

. . . Switzerland, with a population of less than three percent of the United States, nevertheless has an effective civil defense system and spends more than does the U.S. in total dollars for civil defense . . .

But frankly, the justification for an effective U.S. civil defense system does not rest on what other countries have done in the civil defense area . . .

The justification, rather, is quite simply that civil defense saves lives. Anyone who denies that civil defense saves lives is either not knowledgeable about the issue or is not telling the truth. It is as simple as that.

. . . Either you are in favor of saving as many lives as possible of the taxpayers who pay your salaries or you are in favor of letting them die in rather horrible ways because you didn't take some basic protective actions.

This nation was founded on the revolutionary concept that government should be the servant of the people rather than the other way around. Yet we find that while top government agencies and officials have sophisticated and expensive blast-proof bunkers to help them survive a nuclear conflict, the people they are supposed to be serving are left naked and helpless before the holocaust.

. . . Your constituents are in favor of an effective civil defense program. [Public opinion polls prove it.] If you don't believe that, I challenge you to try campaigning on the theme that the American people should remain unprotected against nuclear war.

. . . Now, for the first time in modern history, a supposedly God-fearing nation has designed many of its weapons and its strategic doctrine to the precept that women and children are proper targets for our armed retaliatory forces.

As Meg Greenfield noted in her *Newsweek* magazine column, "I am still made uncomfortable by the implications of the preferred, mutual-hostage strategy. Aren't you? Can anyone feel intellectually or morally content with a position that requires us all to assert, as a matter of national policy, that we are willing to obliterate millions upon millions of innocent, helpless human beings?"

We in the American Civil Defense Association believe that Mutual Assured Survival is a far better policy.

EXCERPTS FROM STATEMENT BY

HOWARD MACCABEE, Ph.D., M.D.

President, Doctors For Disaster Preparedness

We believe . . . that efforts to help the victims of nuclear disaster are not likely to bring on nuclear war, any more than preparations for civil disasters are likely to bring on floods or hurricanes. We would prefer to believe that such preparations would add to deterrence, and hopefully to decrease the risk of nuclear attack on the United States . . .

Obviously, it is not possible to give emergency medical care to the victims of any disaster unless some preparations have been made . . . Toward this end, the California Medical Association resolved through its House of Delegates in March, 1983, to "work toward development of a statewide contingency plan to deal with the medical consequences of nuclear war, and asked the California Delegation to the AMA to seek similar efforts at the national level." . . .

. . . the Geneva Conventions of 1977, (Sections 51 and 58) called for all nations to make preparations for protection of their populations from the effects of nuclear weapons, including attempts at prevention of war, as well as civil defense measures such as sanctuary for victims and evacuees, and preparations for medical response.

gress in 1950 declared its policy and intent "to provide a plan of civil defense for the protection of life and property in the United States from attack." Amendments to the 1950 Civil Defense Act were passed in 1980 at the urging of the Carter administration. The "sense of Congress" in those amendments declared that the civil defense of the United States should be improved, through some form of relocation if necessary, and further declared that "an improved civil defense program should be implemented which —

(1) enhances the survivability of the American people and its leadership in in the event of nuclear war and thereby improves the basis for eventual recovery and reduces the Nation's vulnerability to a major attack;

(2) enhances deterrence, contributes to perceptions of the United States-Soviet strategic balance and crisis stability, and reduces the possibility that the United States might be susceptible to coercion by an enemy in times of increased tension."

Beyond this national commitment to civil defense, which unfortunately has not been adequately administered (Congress's 1980 goals have not been reached), the United States has promised civil defense under the international laws of war. Our government and 64 others are committed to using peaceful means to protect innocent people from enemy weapons.

Civil Defense: A Strategic Necessity

To prepare for the final victory of Communism, the Soviet Union has committed itself to civil defense. General Aleksandr T. Altunin, chief of Soviet civil defense, remarked last October:

The civil defense system covers the entire territory of the country and is organized on the territorial-productive principle. It has acquired an all-people character and has become a component part of the system of statewide defense measures carried out in peacetime and wartime with the aim of protecting the population and the national economy against weapons of mass destruction and other means of enemy attack.

Civil defense preparedness reaches into every facet of Soviet life.

The strategic strength of civil defense is this: if the United States demonstrates the will and ability to survive a nuclear war, the Soviet Union would fear that launching a

EXCERPTS FROM STATEMENT BY

GEN. LOUIS O. GIUFFRIDA

Director, FEMA

Title V of the Civil Defense Act, added by 1980 amendments, states policies and objectives for the program, and also specifies program elements. These include warning, shelter, emergency plans for protecting people in-place or by evacuation, emergency operating centers for key state and local officials, communications, training, and other capabilities and systems. These are the programs called for in our budget . . .

This Administration proposes to take action in a moderate, orderly, and responsible way to improve capabilities to protect the U.S. population against hazards in both domestic and national security emergencies, to meet the congressional and Presidential objectives.

EXCERPTS FROM STATEMENT BY

THOMAS E. BLOSSER

President, United States Civil Defense Council

President John F. Kennedy stated: "To recognize the possibilities of nuclear war in the missile age without our citizens knowing what they should do or where they should go if the bombs begin to fall, would be a failure of responsibility." When you equate President Kennedy's statement with our posture today, in regard to our responsibility to the citizens of this country, those of us involved in federal, state and local governments have failed.

. . . Approximately 30-40% of our population will survive, without a sheltering program, and every effort we make toward better sheltering and relocation of citizens from the strategic areas, increases that percentage. Therefore, we have no moral judgemental decision to make, you are charged by the constitution of the United States with provision of the common defense, and that most emphatically requires the protection of our civilian population!

EXCERPTS FROM STATEMENT OF

RICHARD G. STILWELL

General, United States Army (Retired)

Deputy under Secretary of Defense for Policy, Department of Defense

In reality, what was proposed . . . is a program that will, we believe, lessen the likelihood of nuclear war by giving the American people a far better chance of surviving a nuclear attack than they presently enjoy. A responsible government can attempt no less for the people it serves . . .

Civil defense, therefore, is one element in an overall strategic posture made up of a variety of measures. We believe that this combination of defensive as well as retaliatory offensive improvements offers the best hope of restoring and maintaining the kind of strategic balance that will dispel any Soviet illusion that a resort to nuclear war will produce any meaningful gain . . .

If we are able to demonstrate such capability and resolve, the Soviets should recognize the futility of their efforts to achieve strategic superiority. When they do, the prospects for negotiating realistic arms control measures should be improved.

This Administration received a mandate from the American people to improve our nation's defenses, and to redress the effects of years of neglect. The Defense Department considers the proposed civil defense improvement program an important part of our response to that mandate.

war might result in defeat. The ability to recover means the ability to challenge Soviet hegemony. The men in the Kremlin are cautious, and we can take advantage of their cautiousness to prevent nuclear war. A sense of hopelessness or a demonstrated inability to recover — that is, the rejection of civil defense — will invite Soviet risktaking.*

Concluding Remarks

A strong commitment to civil defense is consistent with the wishes of the American people. A poll taken in August, 1982, by Sindlinger and Company revealed that 81 per cent of the American public believes the U.S. government "has a responsibility to provide an effective program of civil defense for all its citizens." A recent Gallup poll (October 1982) found that a majority, 54 per cent, of those surveyed approved President Reagan's proposal for an increase in civil defense spending. Only 29 per cent disapproved. More important, 60 per cent said they would cooperate with government officials during an international crisis in carrying out civil defense plans. Finally, more than half of those interviewed agreed that civil defense planning could be helpful in saving lives during other disasters. With public support like this, it would directly contradict the will of the American people for Congress to fail to strengthen civil defense.

To reiterate the position of the American Civil Defense Association:

ALLOWING THE INNOCENT TO DIE IS MURDER

Civil defense is a *moral imperative* because allowing the innocent to die is murder.

Civil defense is a *political obligation* because the United States is bound by its constitution, by statute law, and by international treaty to provide defense and protection for its citizens.

Civil defense is a *strategic necessity* because it will increase the perceptions by the Soviet Union of a secure United States, a stable international system, and a potential challenge to Communist hegemony, thus helping to deter nuclear war.

Thank you for this opportunity to appear before the subcommittee. In this holy season of Easter and Passover, celebrations of life and human dignity, I urge all of you to support a greater commitment to civil defense against nuclear attack — a commitment to save lives and reduce human suffering. □

*A strong multi-level nationwide civil defense program builds confidence in applied protective measures. The Soviet Union has for many years carefully promoted such a program. — Ed.

EXCERPTS FROM STATEMENT FOR THE RECORD

DR. LEON GOURE

Director, Center for Soviet Studies
Science Applications, Inc.

According to U.S. intelligence assessments, only the annual costs of Soviet full time military and civilian civil defense personnel and shelter construction represent an U.S. equivalent cost of some $3 billion. The annual cost of the entire program is likely to be close to twice that amount. Despite this burden, however, the Soviet leadership obviously believes in the utility of civil defense and, as Soviet officials frequently point out, "The party and the government are paying constant attention to improving USSR Civil Defense." Indeed, according to Soviet official announcements, 1983 marks the start of a new program to further improve Soviet civil defense capabilities and levels of readiness and to prepare "every stratum of the population" for effective and rapid implementation of civil defense measures in the event of a threat of nuclear war... If, as Soviet military leaders write, the protection of the homeland "is becoming one of the most important tasks in a war," then the lack of any such capability in the U.S. constitutes an exploitable vulnerability and, consequently, is destabilizing. Indeed, given that in the U.S. nuclear war is equated with the assured destruction of this nation and its people, this not only weakens the credibility of U.S. deterrence, but leaves the U.S. vulnerable to Soviet nuclear blackmail in crisis situations.

Anti-Civil Defense Testimony

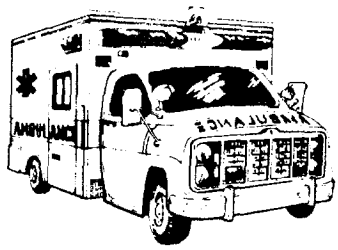
On April 19th the Armed Services Committee's Subcommitte on Military Installations and Facilities heard anti-civil defense testimony. DDP's Dr. Henry C. Huntley attended.

Huntley reported a claim by Dr. Jonathan Lorch (representing Physicians for Social Responsibility) to the effect that the entire United States would be "blanketed by 1,000 r/hr. of fallout" and that shelter standards were so poor that everyone would suffer serious radiation effects within a few days. In the larger shelters, he pointed out, a temperature buildup would require evacuation within 24 hours. (Ventilation was not considered.)

Terry Herndon, president of Citizens Against Nuclear War, spoke of "vaporized bodies" of the Hiroshima attack being given back to relatives in wooden boxes. This he said was what was left of people in shelters. (Survival in conventional shelters, and even in some concrete buildings — see p. 547, *The Effects of Nuclear Weapons* — was pretty good.)

Herndon also cited a film crew that took pictures of Nagasaki and Hiroshima four months after the bombings. The director, according to Herndon "said the films of the dead, the injured survivors and the damage were so horrifying that the U.S. government classified them 'secret' and they have never been shown to the American public." (Admittedly films of corpses four months after death could be on the gruesome side, but pictures of the Japanese injured and the damages have been circulating freely in the media for the past 38 years.)

And so on. Herndon even brings up the question of fraud. Applied to Herndon's testimony perhaps valid.



TRIAGE — EMERGENCY CARE

XIII — TRANSPORTATION OF THE SICK AND INJURED

(13th of 18 installments)

— Max Klinghoffer, M.D.

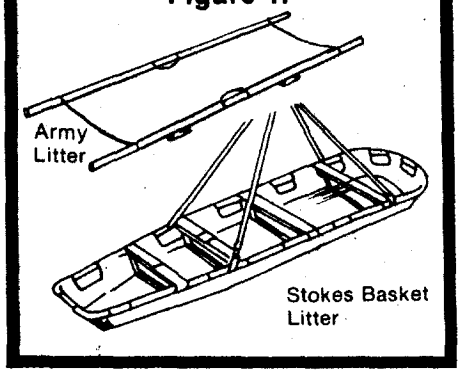
One of the oldest axioms in medicine is "Primum non Nocere", meaning "First, do no harm". This is applicable in any medical practice and perhaps even more so in emergency and triage care. In the every day routine practice of medicine, there is usually time to approach the problem with deliberation and without haste. In triage care, often decisions must be made in seconds — which of course increases the risk of error. This principle: "First, do no harm" is perhaps especially applicable in the transport of casualties. The pressure of the overall situation may tempt the rescuers to use undue haste, to the detriment of the patient. The stability of the litter (if this is the means used for the carry), the lifting of the patient to the litter, the fixation of the patient on the litter, and the manner in which the litter is carried: all these will affect the outcome of the patient.

In addition, it is often necessary to take certain steps BEFORE the patient is transported, in order that the very fact of lifting and transporting will not worsen his condition.

The old Army rule of "Splint 'em where they lie" is still a good rule in most instances. Remember the causes, the prevention, and the treatment of shock. Whenever possible, respiration and pulse should be satisfactory; major bleeding controlled; major fractures immobilized; wounds covered; and pain alleviated — before even moving the victim.

Once again, in medicine there are many rules and many exceptions. Should you be in an area where there is imminent danger of explosion; release of poisonous gases; if the structure in which you are working is about to collapse; or if there is a fire which threatens both you and the casualty — then, in such cases, common sense must prevail and you must move the patient as quickly as possible even if you must temporarily disregard the usual preparations for moving. This rule of exception would also apply in the case of proximity to dangerous chemical or biological substances, hazards from radioactive materials, or proximity to a charged electric wire.

Figure 1.



A LITTER and a STRETCHER are the same and there are several types — both commercial and improvised.

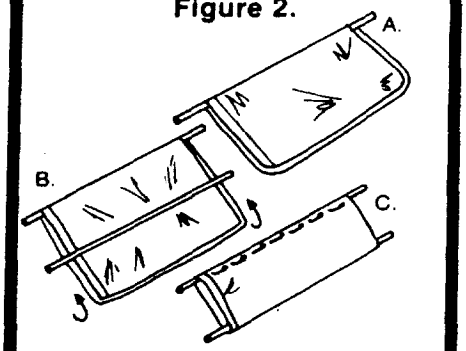
The old Army style litter is still an excellent one, but there is one major precaution to be observed in setting up this litter. The connecting bars between the poles are scissor-like in their action and can easily amputate a finger if the litter is improperly opened or closed. When opening the Army litter, always place your shoe on the cross-bar with the pole ends steadily on the ground or other surface. Then straighten the bar with a steady pressure of the foot. NEVER a bare foot! Then turn the litter over, and repeat with the opposite end.

The basket litter or Stokes litter is just what the name implies. Instead of a flat surface for the patient, this litter has elevated sides and end. The basket litter is especially useful for moving the

patient over rough terrain or for moving him from one level to another. The only disadvantage is that it is slightly more difficult to lift the patient from the basket litter to an operating table and may result in slightly more trauma to the patient. Basket litters are excellent, for example, on upper floors of hospitals and nursing homes, since it is fairly easy to stabilize the patient in the litter if he is to be lowered from one level to another.

Many other commercial types of litters are available, but they are essentially variations of the Army litter or the Stokes litter. More important, perhaps, in mass casualty care, is the improvised litter, of which there are several types.

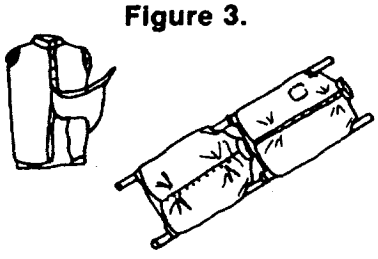
Figure 2.



Blanket Litter

A simple improvised litter may be made using just two sturdy poles, along with a blanket. The poles must be long enough to reach well beyond the ends of the blanket in order that the rescuers may get a firm grip on the poles. Usually eight or nine feet in length is sufficient; but the poles must be strong enough to safely carry the weight of even a very heavy person. To make the blanket litter, place one pole in the exact center of the blanket, and fold the blanket over the pole. Now place the second pole in the exact center of the folded blanket, and fold the open ends of the blanket back to the first pole. Usually the weight of the patient will suffice to hold the blanket and poles in proper relationship. If the carry is to be a long one or if the patient is unusually restless, it may be advisable to pin all four layers of the blanket at several places along the edge of the first pole.

Figure 3.



Clothes (Shirt/Jacket) Litter

A similar improvised litter is made with the use of two (or more) heavyweight shirts or jackets. The sleeves are turned inside out (for greater strength) and the poles passed through first one jacket, then the other.

It is important not to be "heroic" and to show your strength in the matter of carrying a patient although under unusual circumstances a one man carry may be mandatory. The danger of further injury to the patient is greatly increased if he is carried by only one rescuer.

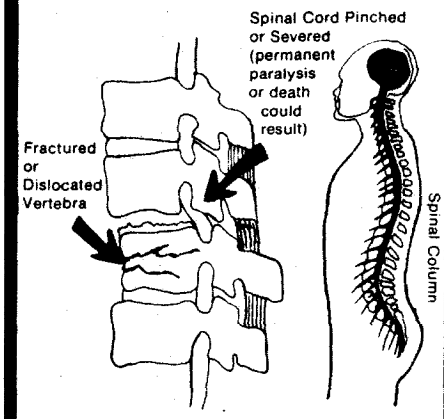
A litter requires a minimum of two men to carry it and if enough rescuers are available, four is even better. The rescuers who are carrying the litter should make every effort NOT to walk in step. Walking in step results in increased "bouncing" of the litter, and increases the hazard to the victim.

This next rule should be obvious, but it is surprising how often this error is made. ALWAYS carry the litter to the patient — NEVER the patient to the litter. It is much easier to stabilize the patient's body on a litter than it is in the arms of the rescuers.

The actions of the rescuers in lifting the patient to the litter should be rapid, WELL-TIMED and deliberate. In other words, the body of the patient should not be twisted, turned or bent as he is lifted. (Perhaps each victim should be labeled before he is moved: "Do not fold, spindle or mutilate.")

The correct lifting of the patient is always of importance, but it is of MAXIMUM importance where there is a suspected injury of the spinal column. The

Figure 4.

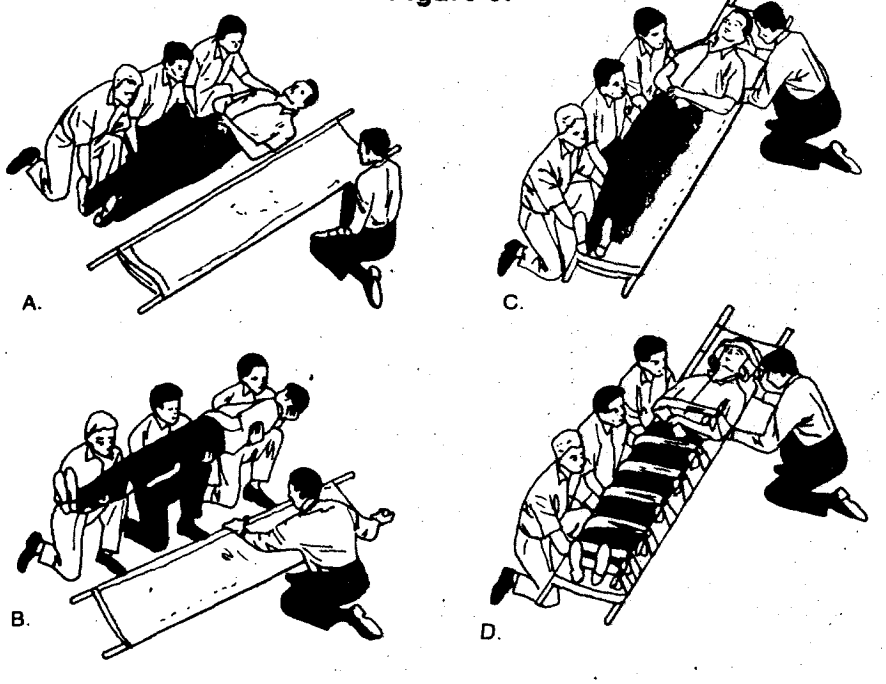


Spinal Cord Fracture or Injury

spinal column (or backbone) is made up of a series of VERTEBRAE.

The opening or canal created by the column of vertebrae provides the enclosure for the spinal cord. The spinal cord may be compared to an electric cable containing a multitude of wires, which transmit messages from the brain to the rest of the body, and which transmit messages from the body to the brain. This is the MAIN CABLE and it becomes apparent that if this cable is severed or severely injured, then paralysis or death will result. If the cable is severed in the area of the neck, paralysis or death will follow, since that area of the spinal cord controls our respiration. Thus it can easily be seen that the patient with an injured spinal column must be handled with the UTMOST caution, in order

Figure 5.



Placing Spinal Cord Victim on Litter & Securing

to avoid crushing or severing the spinal cord.

When such a patient is lifted to a litter, the head must be moved in absolute unison with the neck and the body. Under NO circumstances must the patient's head be turned or lifted — not even if he asks for a drink of water. To lift his head to give him a drink of water may result in instant death.

Once such a patient is on the litter, steps must be taken to be sure that his head remains in a fixed position relative to his body. This is best done by using a back-board, such as are now carried in ambulances, and firmly strapping the patient to the board. In the absence of a back-board, there are alternatives. A heavy bath towel may be gently passed under the patient's neck, and drawn tightly around his neck and under his chin (but still allowing him room to breathe!). In passing the towel under his neck, every precaution should be taken to avoid bending or twisting the neck. This maneuver is best accomplished by two rescuers. The towel should then be pinned in place under the chin with large safety pins.

Another improvised method of immobilization of the head and neck (though not as efficient as the other methods) is to place two heavy objects (well-padded with towels) on either side of the head, firmly enough to prevent movement of the head. One of the best means of immobilizing the head and neck is a cervical collar with a velcro closure.

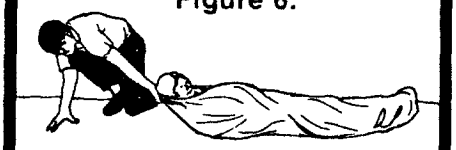
There is always the possibility that one of the rescuers may stumble during the carry or the patient may become restless or convulsive, it is mandatory that the victim be strapped to the litter to prevent falling off. Straps should not be placed, however, directly over injured areas, about the neck, or about the chest.

In the event no other materials are available for making a litter, a door may be used, provided you are certain all nails and splinters have been removed. The door litter is a good one for the spinal injury; but it is very difficult to carry because of poor hand-holds.

The patient should NEVER be lifted by his head and his heels or by his arms and legs, since this will very likely worsen any existing injuries.

Whenever possible the patient should be stabilized before he is transported and even before he is placed on a litter. Stabilization means: (1) patient has an open airway and is breathing freely; (2) all major bleeding is controlled; (3) large bone or spinal fractures are immobilized; (4) sucking chest wounds are sealed; (5) open wounds including burns are covered; (6) blood pressure, pulse, and respiration are within acceptable limits. This stabilization must be maintained during transportation of the victim.

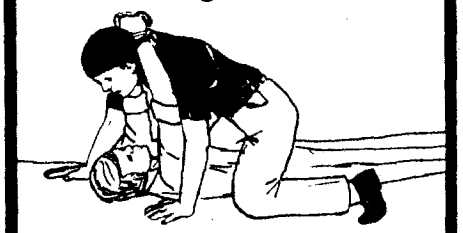
Figure 6.



Blanket Drag

When it is absolutely necessary to move a victim IMMEDIATELY (because of danger to the victim and/or the rescuer) then the "blanket drag" may be used. In this maneuver, the patient is carefully placed on a blanket, and he is moved by a steady pull on the blanket by the rescuer (avoid twisting or turning). If the rescuer is having difficulty moving the victim and speed is necessary, try pulling the victim by the feet (although this can greatly increase injury to the victim).

Figure 7.



Fireman's Drag

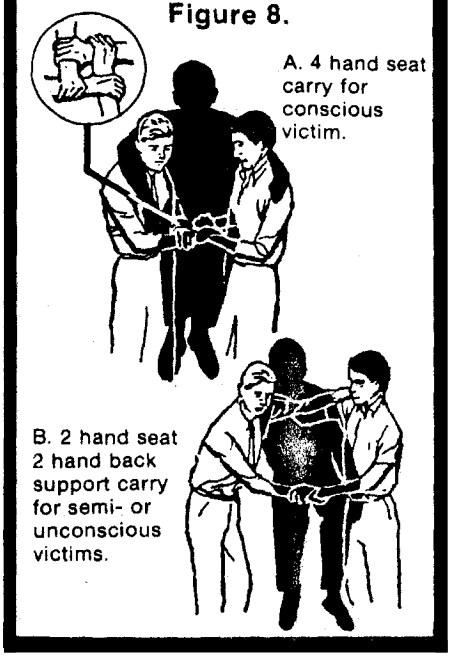
Another method of emergency moving of the patient is the "fireman's drag". In this instance, the patient clasps his hands about the neck of the rescuer, who then crawls to safety. If the patient is not able to clasp his hands about the neck of the rescuer, the hands may be tied together with a handkerchief or rope, and placed around the neck of the rescuer.

The "walking wounded" may often be moved short distances by simply using the support of one or more rescuers. (This is the method often used to remove injured football players from the field. A maneuver which appears heroic and which draws applause from the spectators, but which is very poor medicine. This method should be used ONLY when better methods are NOT available.)

Under certain circumstances, and where no better method is available, the victim may be moved "piggy-back", just as we carried each other when we were children. This carry must never be used unless the patient is fully conscious; if he loses his hold about the rescuer's neck he may fall and be more seriously injured.

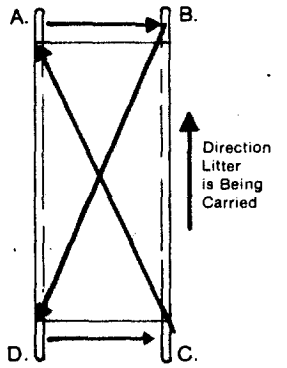
The conscious patient may also be carried by two rescuers clasping both their hands (four in all) as a "seat" with the patient's arms around rescuer's neck. If the patient is not fully conscious, then the rescuers should use TWO hands for the seat, and two hands to support the patient's back to keep him from falling.

Figure 8.



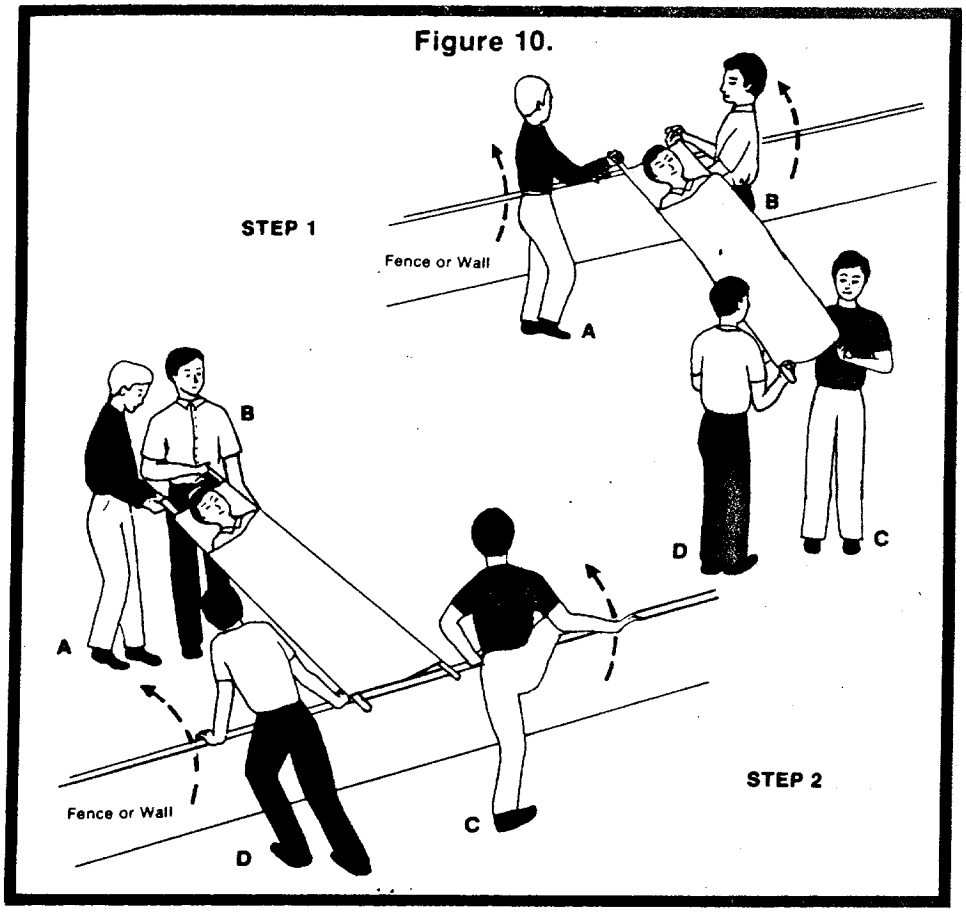
When a patient is carried on a litter for any distance or over rough terra[in] or uphill, then steps should be taken [to] minimize the strain on the carr[iers]. Assume we are looking at a litter fro[m] above, the handles are arbitrarily designated as A, B, C and D. The rescuers should place the litter on a firm surface from time to time. One carrier should give the order to halt, and to lower the litter, so that all this is done in unison and with minimal discomfort to the patient. Now the carrier at A moves to B; B moves to D; D moves to C; and C moves to A. In this manner, each rescuer is carrying the weight for a while by his right arm, and then by his left arm. The carriers are also "trading places" with regard to the heavier portion of the victim's body, since the chest and abdomen will be heavier than are the legs.

Figure 9.



Rotation of litter carriers.

Figure 10.



When the litter carriers encounter an obstacle such as a fence, or a stone wall, the carriers A and B should place their litter handles firmly upon the obstacle, and then climb over. They then move the litter forward just enough to permit C and D to place their handles on the obstacle and then they, in turn, climb over.

Sometimes it is less fatiguing to carry the ends of the litter poles on the shoulders. When this is done, however, the poles should be supported by the hands in order that the litter not slip off the shoulder. There should be padding on the shoulders to absorb the weight of the litter poles.

When the patient is to be moved from the litter to an operating table or to another litter, it is preferable that the two be at the same level. This makes it easier for the rescuers to move the patient, and also decreases the trauma to the patient.

Remember — when you lifted the patient to the litter, you were careful to have the rescuers' hands well under his body. It is urgent that in removing a patient from a litter, the rescuers' hands again be well under the body — not only to provide adequate support, but also to minimize the danger of dropping the patient. □

NEXT INSTALLMENT:
Electrical Injuries

THE CD SUMMIT

1983 TACDA SEMINAR TO BEAT DRUMS FOR SURVIVAL ACTION

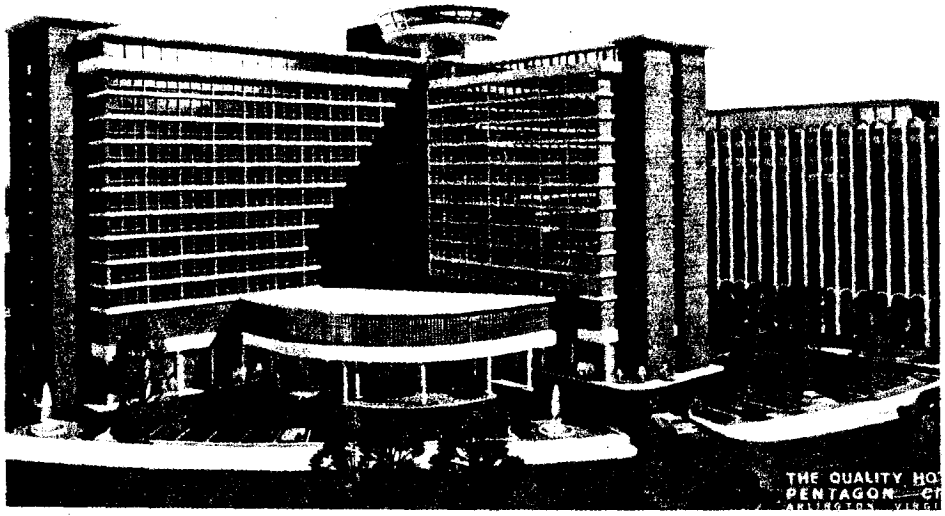
(September 29, 30, October 1 at Pentagon City Quality Inn, Washington, D.C.)

TANDEM DDP CONFERENCE OCTOBER 1st

— Staff Report

Seminars come and go, but the TACDA (The American Civil Defense Association) seminars stand out as tops in speakers, participants, exhibitors and the interplay of ideas and accomplishments.

TACDA's 1983 seminar will take place at the Pentagon City Quality Inn, just across the Potomac from Washington D.C. in Arlington, Virginia. The dates: September 29, 30 and October 1.



The prestigious Pentagon City Quality Inn (PCQI) rises 3 blocks from the Pentagon in the Washington D.C. suburb of Arlington, Virginia and overlooks the Capital across the Potomac River. Poised atop the luxury hotel is the popular "Skydome" — Washington's only revolving lounge — with its dramatic ever-changing panoramas. Just below the Skydome on the hotel's top floor lies the gourmet Penthouse Restaurant on one side and the oversize pool and gym facilities on the other. The Capital View conference room (where TACDA will hold its seminar) can be seen curving out on the mezzanine. Special room rates for the TACDA seminar bring luxury accommodations down to countryboy levels . . . That's just the tip of PCQI's tempting iceberg. Arlington's fabulous Crystal City beckons from its mile-long site to the rear of the hotel. Free limousine service is furnished between Washington National Airport and the Pentagon City Quality Inn. Just pick up the free phone, and — zip — you're on your way.

You can't beat it. TACDA found that out two years ago. That's why we came back.

This year the nation's foremost strategic analysts again address seminar participants — at a time when the critical question of national survival has become a heated debate between those in favor of a strong defense for the American homeland and its allies and those who feel that deliberate defense is a dangerous and provocative game. This puts a very special meaning on TACDA's 1983 conference.

Gen. Daniel O. Graham

Carsten M. Haaland

Among those who have to date accepted TACDA invitations are:

— Dr. Jiri Nehnevajsa of the University of Pittsburgh, the nation's No. 1 civil defense pollster. Dr. Nehnevajsa will have completed his

1983 poll and analysis prior to the TACDA seminar.

— Reed Irvine, the maverick media critic who publishes *Accuracy in Media* (AIM). Irvine has exposed the TV networks and prominent newspapers for biased reporting and inaccuracies.

— Dr. Eugene P. Wigner, America's foremost civil defense scholar and initiator of civil defense research and studies. Wigner places a special accent on CD education.

— General Daniel O. Graham, project director of "High Frontier." Former director of the Defense Intelligence Agency. Campaign advisor to President Reagan. Graham is chief proponent of the space defense measures to intercept nuclear missiles — a new defense technique given momentum by Reagan in his March 23rd address to the nation.

— Oak Ridge National Laboratory nuclear scientist Carsten M. Haaland. Haaland, a frequent *Journal of Civil Defense* writer will bring into focus questions on radioactivity as they affect or are apt to affect our lives.

— Dr. Conrad V. Chester, Chief of Oak Ridge National Laboratory's Emergency Planning Group. Top authority on shelter technology.

— Max Klinghoffer, M.D., author of the "Triage — Emergency Care" series in the *Journal of Civil Defense.* Klinghoffer is also one of the prime movers in DDP (Doctors for Disaster Preparedness). Klinghoffer's topic: air disasters.

— Dr. Leon Goure, top authority in the field of Soviet civil defense, international civil defense analyst. Goure was to speak at TACDA's 1982 seminar, but was badly injured in an accident that required an extensive convalescence.

Additions to the above will be announced in the August issue of the *Journal of Civil Defense.*

QUESTIONS AND ANSWER EMPHASIS

As a result of participant recommendations all speakers will be asked this year to devote at least 10 minutes to question and answer sessions.

Also, in view of recommendations, workshops will come in for a heavier play at the 1983 seminar.

EXHIBIT AREA DEVELOPMENT

Heavier accent on exhibits last year resulted in a more balanced seminar. Interest was spontaneous. This year coffee calls will again be held in the exhibit area. Signs and announcements will call attention to each display. The seminar program will also feature a list of exhibitors.

Note: *Following the suggestion of several guests last year, participants may submit advance registration and pay upon arrival at registration desk. Simply check appropriate box below.*

REGISTRATION — TACDA 1983 Seminar, Washington, DC, Sept. 29-Oct. 1
Registration fee — $95 **(Advance registration before Sept. 15 — $80)**

TO: **TACDA 6th Annual Seminar**
P.O. Box 1057
Starke, FL 32091
(Phone: 904/964-5397)

☐ Enclosed $_____
☐ Please bill me
☐ I'll pay at desk

Name(s) _____

Address _____ (Phone: _____)

City _____ State _____ Zip _____

DOCTORS FOR DISASTER PREPAREDNESS PLAN PROGRAM FOR OCTOBER 1

A separate but TACDA-coordinated seminar program conducted by Doctors for Disaster Preparedness (DDP) will be held from 1:30 PM to 6 PM on Saturday, October 1st in the Pentagon City Quality Inn conference room.

This is to be followed by a dinner in the evening. Speakers are now being lined up for the program. A separate registration fee of $45 will apply to the DDP seminar. Those attending the TACDA seminar are cordially invited to attend the DDP seminar. For information and/or registration contact? TACDA/DDP, P.O. Box 1057, Starke, FL 32091 (Phone: 904-964-5397 or 703-352-0444). ☐

AGENDA OUTLINE
1983 TACDA SEMINAR
PENTAGON CITY QUALITY INN

Thursday, September 29
1:30-5PM Business Meeting
7-10PM Welcome Reception

Friday, September 30
Morning Seminar Program
Noon Luncheon Program
Afternoon Seminar Program
Workshops
Evening Reception
Banquet

Saturday, October 1
Morning Workshops
Seminar Program

* * * * * * * *

On Saturday afternoon, October 1st, Doctors for Disaster Preparedness (DDP) will hold a seminar to be followed by a dinner that evening.

Mail reservation to:

PENTAGON CITY QUALITY INN
300 Army-Navy Drive
Arlington, VA 22202

ROOM RESERVATION FORM

☐ Single $50
☐ Double $55
☐ Confirmation requested.

(No Deposit or credit card information required except for arrivals later than 6 PM).

Arrival date/time: _____ No. of days: _____

Name _____

Address _____ (Phone: _____)

City _____ State _____ Zip _____

— TACDA SEMINAR PARTICIPANT —

REVIEWS

EMERGENCY OPERATIONS PLAN, by Roger E. Herman. Published by Universe Books, 381 Park Avenue South, New York, N.Y. 10016. June 1983. 8-in. x 11-in. looseleaf format (hard cover). $160.

Reviewed by Walter Murphey.

Undoubtedly the most tragic experience a community official can have is to be hit suddenly with a serious disaster and not know where to turn for required help, how to set the rescue mission in motion, what he is authorized to do and what he is not.

And yet, this happens with an alarming frequency. It costs lives. It costs money. It costs careers.

At the time of crisis a solution would be worth — what? The trouble is that during normal periods it is too easy to delay emergency planning. And it takes a special kind of expertise.

Properly exploited, *Emergency Operations Plan* can be a large part of that expertise, can furnish the vital framework and guidance that give real meaning to disaster response efforts. It can provide for the city or county or state official the steps he or she must take to contend with whatever type of disaster that overtakes the community. It can lead him to logical decisions and solutions. That's the purpose behind the book which is more than a book: it's a basic disaster tool.

Emergency Operations Plan is divided into three main sections. Section I covers *policies*, and 15 subsections spell out the guidance here. Section II deals with specific *response procedures* in 38 subsections. Section III (37 subsections) gives the *resources* picture. Seven introductory and explanatory parts precede the three sections and an index follows them.

Furnished with quick-reference tabs and five shades of paper the book is a "living" volume that is meant to be expanded with local input.

Author Roger E. Herman is a disaster preparedness veteran and a former city manager. His planning seminars are held nationwide. He is an instructor at FEMA's National Emergency Training Center in Emmitsburg, Maryland. He is also the author of *Disaster Planning for Local Government*, published early last year, which brought a reviewer's recommendation that "FEMA... buy and distribute Mr. Herman's book to every emergency planner and chief elected official in the country."

In *Emergency Operations Plan* Herman gives the disaster response planner and elected government officials the wherewithall to build what everyone wants: the capability to react promptly and logically when the specter of disaster threatens a community or breaks out upon it.

Emergency Operations Plan can apply equally well to other entities: airports, hospitals, educational facilities, industrial complexes, institutions, etc.

Coordinated operations in disasters can result in the countless saving of lives and property damages into the millions of dollars.

This book has been needed for a long time. It breaks new ground in the disaster response field. It is worth ten times its price of $160.

> One of the features of *Emergency Operations Plan* is its "Update and Improvement Service." Herman explains:
>
> ". . . It is anticipated that, through the author's continuing research and from input received from users, there will be opportunities to improve the value of this book to you.
>
> "From time to time, notices will be sent to all holders of *Emergency Operations Plan*. These notices will contain new ideas, more aspects to be covered, fresh or different approaches, and other improvements to what is contained in these pages. This service will be provided at no charge in the interest of making *Emergency Operations Plan* increasingly helpful and current in your efforts to become better prepared for the emergencies which threaten you."

WORLD MILITARY EXPENDITURES AND ARMS TRANSFERS. Published by the Arms Control and Disarmament Agency, Washington, D.C. 20451. (Fourteenth edition of a series begun in 1965.) ACDA Publication 115. Printed by the U.S. Government Printing Office. Paperback, 8-in. x 10-in. format. 132 pages. March 1983. Free (Call Daniel Gallick of ASDA 202-632-0816).

Reviewed by Kevin Kilpatrick.

World Military Expenditures and Arms Transfers will hardly be embraced by the World Peace Council (WPC) and its offshoots. It's much too factual. Its tables, charts and graphs show exactly where each of the 145 countries stand in military expenditures, armed forces strengths, arms sales, arms purchases, etc. Accepting it would require WPC to make a major realignment in its list of world villians.

The USSR, for example, is shown statistically to be what it really is: the world's biggest investor in armaments and armed forces, as well as the world's biggest munitions merchant. One of its best customers, Libya, with less than one percent of Africa's population, "accounted for nearly 40 percent of all African arms import" from 1971 to 1980.

DEFENSE SPENDING

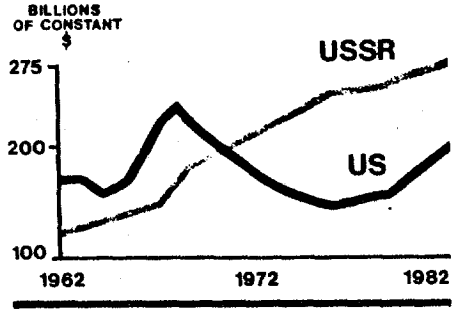


Chart 1

DEFENSE SHARE OF FEDERAL BUDGET

Chart 2

Defense expenditures of the United States, assumed by WPC and its affiliates to be scandalous, are shown to have dropped precipitously from 46% of the federal budget in 1962 to 26% of the budget in 1982.

As indicated in the charts, however, the United States is shown as trying to make a comeback. In one of the book's essays Ronald Reagan says:

> Some may question what modernizing our military has to do with peace. Well, as I explained earlier, a secure force keeps others from threatening us and that keeps the peace. And just as important, it also increases the prospects of reaching significant arms reductions with the Soviets, and that's what we really want. The United States wants deep cuts in the world's arsenal of weapons.

Civil Defense as such is not given emphasis. However, per capita civil defense expenditures used on the cover of this issue of the *Journal of Civil Defense* used as a percentage of the book's figures on per capita gross national product (GNP) line up like this:

	Per cap. CD exp.	Per cap. GNP	CD exp. as a % of GNP
USSR	$18	4861	.370
Switzerland	29	14841	.195
Sweden	20	13032	.153
Finland	9	8904	.101
Norway	9	11444	.079
Denmark	9	12377	.073
West Germany	6.58	12485	.053
United Kingdom	1.8	7210	.025
United States	0.6	10408	.006

THE WAR CALLED PEACE — THE SOVIET PEACE OFFENSIVE. Published by Western Goals, 309A Cameron St., Alexander, Va. 22314. 1982. Paperback, 180 pages. $5.

Reviewed by Robert Baffin.

For those of us who have been wondering just what and just who are the organizations and people campaigning to bring the United States and its allies to a position of military weakness *The War Called Peace* is an ideal reference.

It names the organizations. It names the people. It describes the techniques of "peace" propaganda. It goes behind the scenes. The insidious paterns of infiltration and persuasion are laid bare. The World Peace Council, the mother organization of a massive network of groups passing on the "party line" *The War Called Peace* analyzes the methods and their effects. Among those groups cited are: the Physicians for Social Responsibility, the Union of Concerned Scientists, Ground Zero and the International Physicians for the Prevention of Nuclear War. Those individuals most active in preaching their gospel (including Doctors Helen Caldicott and Jack Geiger) are also brought in.

As for politicians, U.S. Congressman John Ashbrook (recently deceased) says in his foreword:

> Over the past twenty-five years, most American administrations have been so determined to win the political benefits that come with presenting themselves as statesmen capable of making peace with an enemy that they have downplayed and suppressed facts about the aggressive, subversive, ongoing conspiratorial and criminal nature of World Communism. The American people are neither stupid nor asleep; but they have been misled by their elected leaders.

Congressman Lawrence P. McDonald, Chairman of the Western Goals advisory board, in a letter on the inside covers likens the American predicament to that of ancient Israel which, wallowing in indolence and luxury, chose to ignore its enemies who cried "peace" and thereby paved the way to disgrace and utter defeat. The warning of the prophet Jeremiah were drowned out by "self-deluding slogans of peace and prosperity."

McDonald quotes Jeremiah 8:11 and 8:15 —

> For they have healed the hurt of the daughter of my people slightly, saying, Peace, peace; when *there is* no peace.
>
> We looked for peace, but no peace came, and for a time of health, but there was only terror.

The War Called Peace is much more than an effective eye-opener. It's a tool for Western survival.

Überleben im Ernstfall (Survival in Emergency) was reviewed in the *Journal of Civil Defense* in October 1982. Said the reviewer:

> *Überleben im Ernstfall* is a contribution to civil defense literature that needs to be studied by professionals, to be analyzed and to be applied to survival planning. It is another practical (and well-illustrated, by the way) Swiss viewpoint. It is a *positive* approach that spells out the practicability of survival for those who opt for it.

Now a translation has been done, and hopefully an American publishing firm will soon publish it. One passage in the translation which reveals Londoner attitudes prior to the London World War II bombings is mindful of attitudes toward civil defense planning today. Heierli quotes some of their comments:

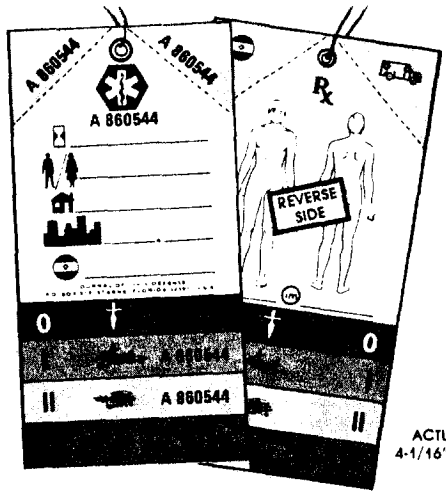
> "I wouldn't leave London for 100 pounds. We are so well protected here."
>
> "We are so well looked after here, if you just look at the barrage ballons, etc. The pilots will never get through" (referring to Germans).
>
> "I felt so unprotected there (referring to the place of evacuation from which the person questioned had already returned); something might really have happened."
>
> "I would not send my children there (place of evacuation) because Hitler could easily get through to there."
>
> "Basically I can't believe that they (the Germans) will come — but, of course, I know that really they will come."

From the April 14 edition of *HUMINT* (published by Nancy Deale Greene):

MUST READING IS SAM COHEN'S NEW BOOK, "THE TRUTH ABOUT THE NEUTRON BOMB" (William Morrow & Co., New York, 1983.) It is, in fact, a real revelation about much more than the "neutron bomb" by the man who is credited (or accused) as "The Father of the Neutron Bomb." The paternity is without doubt, for if ever a bomb had a father, it is Sam, and he nobly and effectively defends his much-maligned child throughout the book. Indeed, he does tell the whole truth about the neutron bomb, and about a whole lot else besides. Amusing and readable . . .

Sam also champions civil defense. He states that "Since the U.S. government began its campaign to convince European allies that the neutron bomb was good for them, not once has the prospect of meaningful civil defense against the effects of these weapons been held forth . . . We have left ourselves naked against nuclear attack, even though a prudent, not-too-expensive civil defense program could save millions of lives."

METTAG stands for "Medical Emergency Triage Tag." It is distributed by the *Journal of Civil Defense* throughout the United States and Canada, and to other parts of the world. In the opinion of users everywhere, in its vital disaster role it lives up admirably to its publicized claim: "Saves time, saves work, SAVES LIVES."



ACTUAL SIZE:
4-1/16" x 8-3/16"

METTAG "TOPS" — AND THEN SOME

Competition is good for the soul and the marketing of any product. It is not surprising that METTAG — which has proved itself on disaster scenes far and wide — should have imitators. Two triage tags that have surfaced recently have copied the METTAG color scheme (black, red, yellow and green) of the bottom priority tear-offs.

Beyond that METTAG can point out — with some smugness — that the competition has to do a lot, lot better to come within range of the METTAG ball park. For instance, METTAG proved to be several hundred times more durable than either of the competitors in inclement weather tests. Price comparisons were another dramatic factor. Competitor No. 1, which has done some ambitious publicity, advertises a price for 1,000 tags that exceeds the METTAG price for the same quantity by a whopping 62%! And shipping costs for the same quantity are 85% over METTAG!

METTAG welcomes a challenge. But it doesn't really feel challenged. Not yet.

COMPARISON CHART — METTAG AND METTAG COMPETITORS

	Cost per 1,000	Shipping + 1,000	Indiv. Serial Nos.	Colors	Utility tear-offs	Grommet	Carbon copies	Internat. symbols	Vital signs space	Water tolerance	REMARKS
METTAG	$250.00	$13.50	6 printed	4	2	Yes (metal)	0	Yes	Yes (space only)	Good (Over 1 month)	Instructions (in 4 languages) with each packet of 50.
COMPETITOR NO. 1 RAPIDTAG (NY)	$405.00 (62% increase over METTAG)	$25.00 (85% increase over METTAG)	0	4 one side only	0	None	2	No*	Yes (Designated space)	Poor (Unusable in 5 min. — carbons wilted)	Colors on one side only; no space for identification of responder? carbon copies on tag are sensitive to moisture — make it unsuitable for field use.
COMPETITOR NO. 2 (MI)	?	?	1 hand-stamped	4 paste-on colored tabs	0	Yes (reinforced paper)	0	No*	Yes (Designated space)	Poor (Unusable in 15 min. — tabs unglued)	Paste-on tabs impractical tend to come off when used in wet weather.

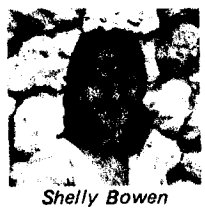
*Both competitors use body charts — no symbols beyond that. METTAG uses symbols throughout.

50 to 50,000 METTAGs may be ordered by mail or by phone (see ad, page 29). METTAGs come in REGULAR and AIRPORT OPTION (preferred by most airports and others desiring grommeted tear-off for casualty location markings).

The new METBOARD provides a handy, smooth, hard writing surface for METTAG. It is equipped with ballpoint pen and marginal information in English — also "instructions for use" on back side (see METBOARD ad, page 21).

Training film and black-and-white METTAG facsimiles also available.


Janice Tyliczka


Shelly Bowen

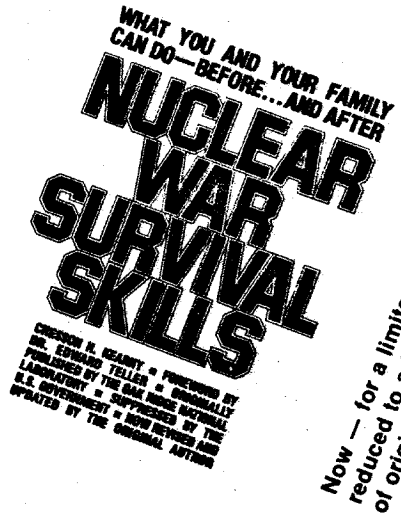

Brenda Robinson


Marie Sanford

"Call us anytime for information or orders" say METTAG producers (Phone: 904-964-5397). "Service to METTAG customers is our pleasure and our first priority." Orders are packed and shipped upon receipt. Send mail orders to: METTAG
P.O. Box 910
Starke, Florida 32091
METTAG saves time, saves work, SAVES LIVES!

3 groups will survive if nuclear war comes to America: (1) the Soviets (2) the fortunate American 20 percent (3) those who are prepared

If you are an American, you can ignore the problem and hope for the best . . . or you can get the facts by reading NUCLEAR WAR SURVIVAL SKILLS



Now — for a limited time only — reduced to a fraction of original cost

Don't tell the people . . .

Here is the nuclear survival manual which cost the U.S. government millions to produce. No other volume on nuclear preparedness contains so much factual, well-researched survival information. The author is a Rhodes-scholar who was employed at the Oak Ridge National Laboratory . . . one of the foremost civil defense experts in the United States. The book's foreword is written by Dr. Edward Teller. Dr. Eugene Wigner, a Nobel Prize winner in Physics, has added an explanatory commentary. NUCLEAR WAR SURVIVAL SKILLS has been endorsed and recommended by virtually every civil defense expert in the U.S. Yet this is the book which the U.S. Government refuses to distribute to its own emergency services personnel.

"Don't tell the people" . . . is this the policy of the U.S. Government? The facts of nuclear survival are available in this 239-page volume with 83 dimensional drawings, 26 sketches, 60 photos and patterns for the do-it-yourself construction of a workable fallout meter. If you only purchase one book in the 1980s, it should be NUCLEAR WAR SURVIVAL SKILLS.

Some influential congressional and bureaucratic power groups do not want the American people to learn the facts about the nuclear risk in the years ahead. These people believe that the subject is "too deep" and "too risky" to let the voters know the truth. They believe that widespread nuclear survival information would create a groundswell of support for an expanded U.S. civil defense program . . . and they're right! They know that the people do not share their view that "only an exposed population is a safe population" and will do almost anything to keep the public in a state of ignorance. Thus, NUCLEAR WAR SURVIVAL SKILLS is the most provocative book in existence for the Washington, D.C. establishment . . . a book which must not gain wide circulation. Do you agree?

If you believe in reason . . . if you prefer to know the truth and come to your own conclusions, this is "must" reading. NUCLEAR WAR SURVIVAL SKILLS is not biased and totally devoid of ideological slanting. The bookstore price of NUCLEAR WAR SURVIVAL SKILLS is $9.95. Now, for a limited time you can order a copy of this unsurpassed survival manual for as little as one-third the bookstore price.

NUCLEAR BOOK
P.O. Box 1411
Coos Bay, OR
97420

- ☐ 1 copy: $5 + $1 shipping — Total $6.
- ☐ 10 to 99 copies: $3 ea + 25¢ per copy shipping.
- ☐ 100 or more copies: $3 ea — *NO* shipping charges.

Please send me _____ copies of NUCLEAR WAR SURVIVAL SKILLS as checked above. I enclose $ _____ to cover costs.

Name _____ Address _____

City _____ State _____ Zip _____

UPCOMING

June 7-9	31st Annual Study of the Assoc. of Civil Defence and Emer. Planning Officers. Reg. fee £110 (British Pounds). Contact: Mr. A. Farrell, ACD & EPO, Northamptonshire County Council, County Hall, Northampton, NN1 1DN, Tele: 0604 34833 — Ext. 5249 Telex: 312516. NPTNCC G.
Jun 12-17	American Nuclear Society Annual Meeting, Westin Hotel, Renaissance Center, Detroit, MI. Contact: Walter J. McCarthy, Jr., Chairman & Chief Exec. Officer, Detroit Edison Co., 2000 Second Ave., Detroit, MI 48226, or phone 313/237-8800.
Jun 13-17	1983 International Disaster Control School, St. Augustine, FL. — Reg. Fee $235. Contact: Safety Systems, Inc., PO Box 8463, Jacksonville, FL 32239 or phone 904/725-3044.
June 20-21	Terrorism and Civil Disorder Institute Seminar, Airport Holiday Inn, Phoenix, AZ — 16 hours, Registration fee $75, Contact: Dan Cor, Ltd., James R. Davis, Pres., 2387 Rippey Court — Suite 1, El Cajon, CA 92020 or phone 619/464-6191. Publisher of "The Terrorism Handbook" and "Emergency Tactics Newsletter".
June 25	12-Hour Seminar "Hazardous Materials for Incident Commanders and Experienced Responders" 7:30am - 9:30pm at the War Bonnet Env. Ctr., Canaan, NH. Fee $59 Contact: John R. Cashman, Editor, Hazardous Materials Newsletter, PO Box 204, Barre, VT 05641 or phone 802/479-2307 (7am - 11pm).
Jul 8-10	1983 Clinical Conference on Pre-Hospital Emergency Care, Hyatt Orlando, FL. Contact: 1983 ClinCon Registrar, 600 Courtland St. Suite 420, Orlando, FL 32804 or phone 305/628-4800.
Jul 17-20	USCDC Region IV Annual Conference, Mobile Hilton, Alabama, Pre-Registration, $70, desk $75. Contact: Norman H. Davis, Director, 348 N. McGregor Ave., Mobile, AL 36608 or phone 205/460-8000.
Jul 18-29	Multiprotection Design Summer Institute, for Architectural & Engineering Faculty, NETC, Emmitsburg, MD — Wind Engineering, Protective Construction, Earthquake Protective Designs, Designing Bldg. Firesafety. Contact: Shelter-Rad Technology, Inc., 2000 Century Plaza, Columbia, MD 21044 or phone 301/596-6777.
Sep 10	12-Hour Seminar "Hazardous Materials" see June 25 above.
Sep 22-23	Terrorism and Civil Disorder Institute Seminar, Holiday Inn, E. Hartford, CT (see Jun 20-21 above).
Sept 29-Oct 1	**The American Civil Defense Association, 6th Annual Seminar-Conference, Pentagon City Quality Inn, Arlington, VA, for information, contact: TACDA, PO Box 1057, Starke, FL 32091, or phone 904/964-5397.**
Oct 10-13	U.S.C.D.C. 32nd Annual Conference, Birmingham, AL, Contact: Sadie Morgado, 709 N. 19th St., B'ham, AL 35203—205/254-2039.
Oct 30-Nov 4	American Nuclear Society, Winter Meeting, San Francisco, CA — Contact: Herbert Worsham, Jr., Mgmt. Analysis, 11095 Torreyana Rd., San Diego, CA 92121 — 714/452-5000.

MARKETPLACE

FINNSAFETY NEWS MAKES DEBUT

Finnsafety News appeared as an insert in *Aegis* for February, 1983. It is a full-color attractive 16½-in. x 11½-in. 4-page slick newsletter which presents "News and information about Finnish civil defense products and services." *Finnsafety News* is published by:

The Finnish Foreign Trade Assn.
Arkadiankatu 4-6B
SF-00100 Helsinki 10
Finland

Most of the statistics for this issue's Journal cover come from *Finnsafety News* issue No. 1.

Excerpt from page 1 story "Why Does A Country Need Shelters?":

If a 20 Kt nuclear charge exploded without warning during daytime at an optimal height over a city of 130,000 inhabitants, 35% of the population would be killed, 30% injured and only 35% would be uninjured.

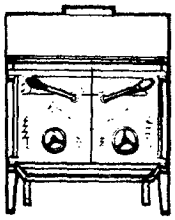
With specially constructed underground shelters and an adequate alarm period, the figures would be 8% killed, 2% injured and 90% uninjured.

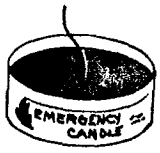
FAMILY FORUM

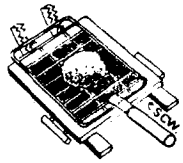
Fire for cooking can be vital and here are ways to exploit it. But fire consumes valuable oxygen and requires above all, a plentiful air supply. Be sure you have it!

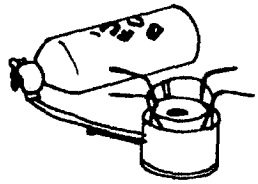
COOKING WITHOUT A KITCHEN

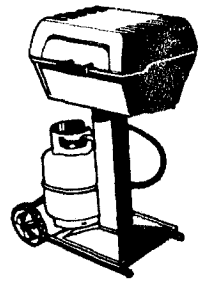
— Marie Sanford & Janice Tyliczka











It is amazing how many people will carefully store away the food and water they will need for an emergency but never think about how they will cook it. Here are a few varieties of the cook stoves and fuels which are available on the market today. A good survival stove should light easily, burn hot and rarely need repair (parts should also be easily obtainable). It should be lightweight, compact and burn readily available fuel.

Campstoves which burn liquefied petroleum gas (LPG or propane, which come in pressurized cartridges) are simpler to use than those that burn liquid fuel (white gas, kerosene, gasoline, etc.). Malfunctions are quite rare in cartridge fueled stoves, they are safer and easier to use, and they burn cleaner than liquid fuel stoves. There are some disadvantages though: their low heat output, especially in cold weather; the cylinders will rust in long term storage; and occasionally they leak and cause flammable pools to form. These stoves range in price from $24-$35, with extra cartridges costing about $2.50 each. Cooking on this type of stove is much like your own kitchen stove.

White gas, ("Coleman fuel") burns hot, clean, and is fairly odor free. When stored in its original sealed container it has a shelf life of approximately seven years. Fuel left in stoves should be burned off or replaced every 1-2 years. Unleaded gas can be used in place of white gas but it has a shorter shelf life, storage can be hazardous and will shorten a stove's generator life. Kerosene is a liquid, hot burning fuel, inexpensive, about $1.35 a gallon, and available in most parts of the world. It can be used in most liquid fuel stoves, can burn under pressure or with wicks, has little odor but can smoke if improperly burned. Store kerosene in metal containers filled to the top so that condensation doesn't form and it will have a shelf life of two or more years. Most of these stoves must be pumped and primed before lighting. Liquid fuel stoves fall in the same price range as cartridge fuel stoves.

Commercial metal fireplaces or wood and coal stoves are another possibility of cooking but you must store a large supply of fuel (wood, coal or charcoal). This fuel has a long shelf life but needs a proper, undamaged chimney with good ventilation for fumes. They are not really portable, take a greater length of time to build heat (this is great in the winter but undesirable in the summer or small shelter), and if you are purchasing one just for an emergency, they are quite expensive, $160-500. You can place an oven rack or barbecue grill over logs to cook with, but make sure the flue is open. You can also cook in the hot ashes — wrap food thoroughly with aluminum foil and bury beneath the ashes. There is a portable cookstove on the market that burns solid fuels and costs about $35.00.

If you do not have any of the above in your home or are unable to purchase them, other ways to cook are found in most homes. Household candles, floating candles, and emergency candles are all capable of frying an egg or boiling a pot of water. Hint: Use a fireless cooker. After food and water have boiled for ten minutes, take a bushel or laundry basket with blankets, newspaper or towels packed inside, form a pocket in the center of the basket in which to place your covered pot, pack more insulation on top of pot and set aside for a few hours. The heat will continue to cook your meal without using a fuel supply. If no baskets are available just wrap the pot in extra insulation and this will also work. You can make pot stands out of coat hangers under which to place your candles. Candles will burn from 4-80 hours depending on the type you have and prices vary from 59¢ to $3.

Chafing dishes, fondue pots and sterno stoves are also possibilities. Some of these use candles, denatured alcohol or sterno as sources of heat. A 7-ounce can of sterno will burn for 1½ hours and cost around $2.50. You must improvise but your food will get cooked.

Another possibility is a propane torch which can be found in most workshops. It would be very similar to the cartridge cook stoves but you will have to rig your own cooking surface. Refills (14 oz.) will burn on low approximately five hours and cost $2 each.

Barbecue grills and Hibachis are last choices and to be used only when there is a plentiful air supply and proper ventilation. You need a good supply of charcoal which cost around $4 per 20 pounds.

REMEMBER: BURNING ANY

LATELINE .... DOCTORS ON THE MOVE

AS THIS ISSUE OF THE JOURNAL GOES TO BED the first impressive issue of the Doctors for Disaster Preparedness Newsletter is off the press. It's another signal that Doctors for Disaster Preparedness (DDP), as "the new kid on the block" promises to take over a major share of CD action. As a matter of fact, it already has. DDP appearances on radio and TV, generous exposure in the press, challenging congressional testimony, and the California Medical Association preparedness resolution are some of the encouraging indications that the initial DDP splash is a harbinger of a great race to come.

DDP IS NOW COMMITTED to an October 1, 1983 afternoon-evening seminar in Washington DC to follow on the steps of the TACDA seminar. An agenda is now being firmed. A second newsletter is on the drawing board. Other projects are in the making.

DDP PRESIDENT, ONCOLOGIST DR. HOWARD MACCABEE, in addition to being a physician holds a doctorate in nuclear physics. Vice Presidents Dr. Gerald L. Looney and Paul Morris are California emergency physicians, Vice President Dr. Henry C. Huntley former head of the National Emergency Health Program. Secretary-Treasurer Dr. Max Klinghoffer is an active veteran of disaster medicine dating back to his four years of combat in the Pacific during World War II and through an ongoing career of research, writing and education.

DDP INTERPRETS THE DUTY OF MEDICAL PERSONNEL not only as reacting to disasters but in planning and preparing so that reactions can be as coordinated and as effective as possible. DDP stresses preparedness for wartime disaster in addition to preparedness for peacetime disaster.

MEMBERSHIP IN DDP IS OPEN. Members who hold doctoral degrees in any field pay annual dues of $35 and are eligible for election to the Board of Directors and as DDP officers. Full voting rights are accorded other members who pay annual dues of $25. Non-voting student members pay annual dues of $10.

DDP ADDRESS: P O Box 3482, Fairfax, Virginia 22038 — Phone: 703-352-0444. (Information may also be obtained from The American Civil Defense Association at P O Box 1057, Starke, Florida 32091 — Phone: 904-964-5397.)

KIND OF FUEL REQUIRES LARGE AMOUNTS OF AIR. PROPER VENTILATION IS A *MUST*. COOKING WITHOUT IT CAN DEPLETE YOUR OXYGEN SUPPLY AND FILL THE AIR WITH FUMES AND/OR SMOKE THAT MAY CAUSE VOMITING, HEADACHES AND POSSIBLY DEATH.

When storing fuel the containers (preferably metal) should be clearly marked, stored in a cool place and be kept out of the reach of CHILDREN. When purchasing equipment remember to ask yourself: How safe is it? How long will it last? Does it have an instruction and maintenance manual? Can everyone in the family operate it? *(We recommend that you practice lighting and cooking on your stove before the emergency arises.)*

We have covered the possible ways to cook food on different types of fuels but we did not mention how to light your fire. It is a good idea to keep a large supply of matches stored in a waterproof, airtight container and check them periodically. Also storing 3-6 butane disposable lighters in a zip lock bag is useful.

COOKING HINTS

Use a pressure cooker to prepare meals (if you have one), they conserve fuel and time; try layered cooking, place the item which requires the longest cooking time in the pot closest to the heat, place the second pot over the first as a cover (rising heat will heat this food); canned food can be heated directly over the flame but must have the lid removed (if you place a larger can with the top and bottom removed around the canned food it will concentrate the heat to the can of food); use a wok with a cover, the design of the pot concentrates the heat on the bottom but heat evenly crawls up the sides with only a small flame under it (slice meats and vegetables very thin).

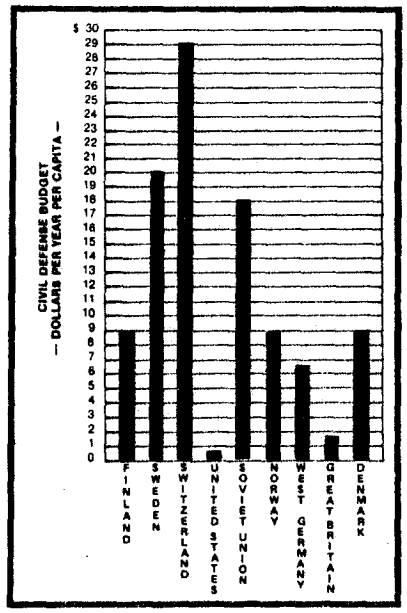
Take a metal bucket (12-16 quart size), put dirt in the bottom (1-2" deep), bend a metal coat hangar (remove coating) to form a rack which will fit inside the bucket (use several for strength), dig a ltle hole and place kindling inside the hole, light, place rack over fire and instant barbecue.

Have a fire extinguisher within reach of your cooking area. No matter which method you choose to use — Remember, you must have enough fuel or source of heat stored to last for your shelter stay. □

NOTE OF INTEREST: The International Fire Chiefs Magazine opposes the use of kerosene heaters or cookstoves. The reason being that complete instructions for use and installation are not available to the consumer.

EDITORIAL . . .

POPULATION PROTECTION — WHERE AND WHERE NOT!



Aleksandr Barabeychik in his "People and Events" program over Radio Moscow on April 13 (in English) called President Reagan's March 23rd announcement to shift emphasis to purely *defensive* type weapons a "dangerous proposal." Barabeychik referred to statements by academician Georgiy Arbatov, director of the Institute of the United States and Canada: "Dr. Arbatov said that American so-called defensive weapons are actually designed to augment United States' military potential . . . that in the history of human conflict there had never been a difference between offensive and defensive weapons.

Good bait perhaps for Lenin's "useful idiots" west of the Iron Curtain, but in the real world another smoke screen. The space weapons referred to by Reagan (and many other weapons as well) have no offensive capabilities whatsoever, can be used *only* for defense. This is a threat only for a power bent on conquest.

The graph at right tells a similar story for the passive defense "threat." From a Soviet point of view U.S. expenditures for civil defense *must* remain in the cellar (through campaigns of contempt, ridicule and slander) because an effort of even moderate proportions would work to deter attack, to enforce peace. Consequently, from the Soviet point of view, civil defense is "dangerous" abroad, to be developed at home. Tiny, coveted, peace-loving Switzerland has held off belligerent neighbors (including Hitler) for over a century and a half with tough, trained, tested defense-dedicated forces. Over 80% of its people are now assigned to modern blast shelter. (Note its position on the civil defense graph.)

Testimony presented at the April 5th "Dellums" subcommittee hearing by representatives of TACDA, USCDC, FEMA and others gives inspired support to the preparedness argument (see p. 14). Former Soviet shelter engineer Robert Kirchensteyn (on p. 6) reveals the Soviet no-nonsense accent — *within the Soviet Union* — on protective measures. Indeed, the concern of many Americans is reflected by their turn in ever-increasing numbers to expedient shelter means — also widely ridiculed even though patterned after Russian techniques (see p. 27 for new book offer).

Representatives of the bellicose "peace" groups are dramatic in their contention that nuclear war will be an unprecedented catastrophe. To that point — putting aside their many fantasies — they are right. And the Physicians for Social Responsibility claims that medical response to nuclear attack will be inadequate. They too are right. Medical response to many recurrent disasters is inadequate. It is not a question of adequacy on one hand and inadequacy on the other, but in the degree of inadequacy. The humanitarian approach demands that the problems involved be studied and analyzed, that solutions be applied as expertly as possible. The principle must apply to the entire spectrum of disasters.

Finally, these groups demand the prevention of nuclear war. Who can fault them? We join them, we lead them, in this demand. So desperately important is prevention that it requires the application of tried *successful methods* and the avoidance of methods that have repeatedly failed, no matter how seductive they may be. Successful prevention lies historically in a super-tough defense coupled with an absolute determination to use it only for defense. Such a defense makes tempting targets into poor and risky targets — as Switzerland and Sweden have done. By doing it, and doing it well, they have both achieved lasting peace.

In essence, this is what President Reagan was talking about: peace through preparedness, peace through strength — not war through weakness.

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