

AN AMERICAN JOURNAL OF CIVIL DEFENSE .....

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*"The need for an effective Civil Defense is surely beyond dispute. . . No city, no family, nor any honorable man or woman can repudiate this duty. . ."*  
 — Sir Winston Churchill

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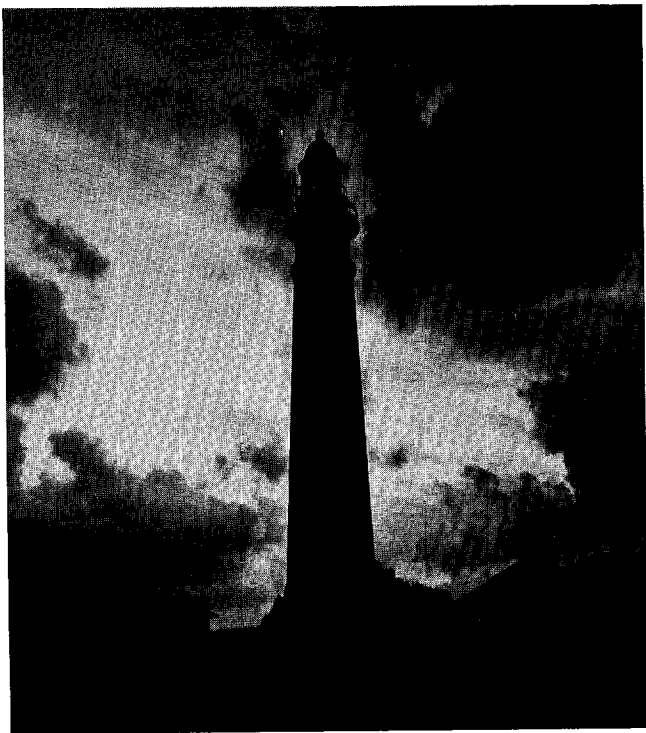
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### COVER PICTURE



Design is by young photographer Tom McLendon. "Civil defense," he says, "should be something to rely upon, something that furnishes guidance and safety in troubled times. This lighthouse framed in ominous but clearing clouds symbolizes that thought for me."

# SURVIVE

... AN AMERICAN JOURNAL OF CIVIL DEFENSE

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 The Oak Ridge Civil Defense Society  
 The Association for Community-Wide Protection  
 from Nuclear Attack

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*Survive* presents authentic information relating to civil defense—to the survival of free government, the United States, and its people in the nuclear age. Its aim is public education in this field and service as a forum.

Authors are encouraged to submit manuscripts for consideration by the advisory board for publication. Articles (preferably illustrated) should be 1,000 to 1,500 words in length, slanted to the non-technical reader, and oriented toward the civil defense field. Views expressed in contributions to *Survive* are those of the authors and do not necessarily reflect *Survive* policy.

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**Reader**

**Comment**

Tulsa, Oklahoma

To *Survive*:

My friends in Sweden would laugh your article on improvised fallout protection\* right out of their underground "hard-rock" shelters. When do we wake up to the fact that the easy "instant" shelter is only a prelude to defeat, death and mass burials? After the attack? The American West was not won with spaghetti spines and paper forts. It was won with hard-nosed courage, common sense and foresight. . . .

Harry Livingston

\*"Shelter for the Unsheltered," November-December 1970.

Currie, N. C.

To *Survive*:

The Leon Goure article in the November-December *Survive* was informative and stimulating. Congratulations on this serious study and others like it. What is your policy on reprinting articles from *Survive*? What about extra copies?

H. P. Bell

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UNITED STATES CIVIL DEFENSE COUNCIL  
BEST BOOK AWARD  
PRESENTED TO  
"SURVIVE"  
AN AMERICAN JOURNAL OF CIVIL DEFENSE  
IN RECOGNITION OF OUTSTANDING EFFORTS OF  
ITS EDITORIAL BOARD, ADVISORY BOARD AND  
STAFF TO PROVIDE AUTHENTIC INFORMATION  
RELATED TO CIVIL DEFENSE AND SURVIVAL  
FORT WORTH, TEXAS  
OCTOBER 1970

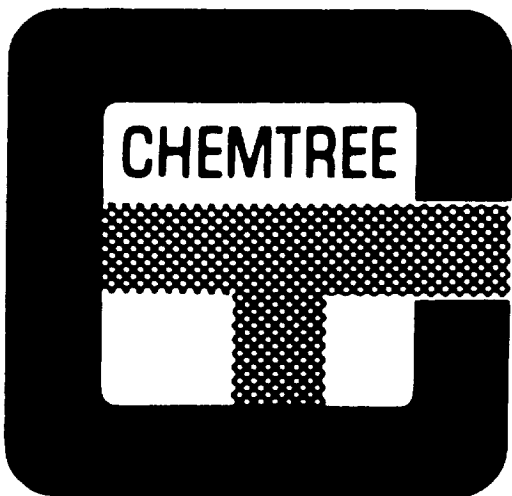
## AMONG SURVIVE WRITERS

### John C. Leary

As Public Information Officer for Boston's Department of Civil Defense John C. Leary is one of the nation's not-too-numerous local career civil defense specialists. Leary, a New England track and field champion in high school, spent five years in the United States Navy. He then entered Boston College, graduating in 1961 with a Bachelor of Science Degree in Marketing and Business Administration. In 1962, based on the results of a competitive examination, he was appointed to his present position. Leary's guest editorial "The Thousand-Year Night" (page 6) is a dramatic portrayal of the deep chagrin and frustration that today grip many advocates of preparedness.

If we took Civil Defense seriously, we could be sure that even in case of a sudden and heavy nuclear attack on the U. S., 90 percent of Americans could survive.

—Edward Teller



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# SOVIET CIVIL DEFENSE:

## CURRENT PROGRAM

*In its November-December 1970 issue, SURVIVE featured Leon Goure's "Soviet Civil Defense: Current Doctrine." That article prompted immediate requests that SURVIVE publish more of Dr. Goure's observations. We are happy to present, therefore, pertinent excerpts from the remainder of Dr. Goure's most recent study. Goure, long recognized as a foremost American authority on Russian Civil Defense, is the author of Civil Defense in the Soviet Union (University of California Press) and numerous other publications.*

Soviet leaders are very conscious of the fact that appeals to national unity in the face of external danger are more effective than those based on purely ideological arguments and that the alleged foreign threat is also very useful to justify investments in defense and heavy industry at the expense of the consumer sector.

As to morale, Soviet spokesmen note the need to overcome excessive popular fear of nuclear weapons and to convince the citizenry that it can be effectively protected. Thus, Lt. General Shuvyrin argued recently that:

"It is only logical to ask: Are there such effective protective means and measures? Is man not helpless in the face of a nuclear blast? These questions can be answered as follows: Whatever the efficiency of modern weapons, man's insight can find a countermeasure."

Great importance is attributed to the preservation in wartime of bravery, steadfastness, discipline and high morale among the population, and, as the Soviets say, these qualities "harden" it morally and psychologically to bear the shock of a nuclear war and of its effects. To do this it is necessary to persuade the population that it can be in fact protected. Thus, Marshal Chuikov wrote in January 1970:

The main thing is to convincingly demonstrate that we have created perfectly reliable means and methods of defense, and that we must know them and know how to skillfully use them; we must prepare ourselves morally and psychologically for overcoming the hardships of a possible missile-nuclear war.

### **Individual Means of Protection**

The Soviet authorities believe in the importance of protecting people from inhaling, swallowing or skin contact with CBR agents. Consequently, they set great store by the use of gas masks and protective clothing. There are four types of civilian gas masks *being manufactured*, two of them for children, and in addition there are special anti-gas envelopes for infants as well as special dust masks and closed oxygen systems. The available information indicates that large numbers of masks have been distributed and are

- by Leon Goure



in use. The population is also taught to prepare simple home-made dust masks in the event that there will not be sufficient gas masks. Protective clothing ranges from full outfits of rubberized or plastic material for civil defense personnel to home-made hoods, coveralls and protective socks which the population is instructed to prepare.

#### Evacuation

According to the Soviet Civil Defense program, careful urban planning is supposed to assist the evacuation as well as reduce the growth of large cities and the construction of new industries in them. It requires the dispersal of industry, provides for fire breaks, easy evacuation routes, restrictions on storage of flammable and toxic materials and so on. The implementation of this plan has been very uneven, and despite the publication of various regulations the cities have continued to grow.

Soviet Civil Defense literature indicates that work is still in progress on perfecting the evacuation and dispersal plans. There are complaints that not all factory managers and city governments have paid sufficient attention to this problem, and there is concern over the need to develop transportation routes which would not interfere with military and other essential traffic.

#### Shelters

Over the past decade the Soviet Union has designed and apparently built or adapted a variety of types of shelters. In the urban and potential target areas these include:

- a. Heavy blast shelters, fully equipped for prolonged occupancy for the use of the work-shifts remaining in the target area and other essential personnel.
- b. Subways, traffic tunnels and in some places caves and mines. There are now subways in five Soviet cities and two others under construction.
- c. Dual purpose shelters, such as underground garages, restaurants and movie theaters.
- d. Basement shelters in larger buildings.
- e. Emergency shelters, which may be built of buried concrete slabs or pipes (storm drains), large metal

pipes, or made of timber and other available construction materials.

In the rural areas and small towns the emphasis is on fallout shelters. These consist of:

- a. Basement shelters which may have a layer of up to 70 centimeters (about 27½ inches) of earth on the floor above them.
- b. Adapted storage, refrigerator and vegetable cellars.
- c. Dugouts.
- d. Covered trenches.
- e. Caves and mines.

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## an evacuation and

## dispersal posture...

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Permanent shelters are equipped with double blast doors, emergency exits protected from debris, filter-ventilation systems, water, power, seats and bunks, toilets, various medical facilities, communications, fire-fighting and digging equipment. Their capacity will vary from some 100 persons to several thousands. The filter-ventilation system includes anti-blast devices, dust filters, chemical filters against CBR, fans and so on. It is electrically or manually operated. Some Soviet publications also mention the addition of air regeneration cannisters and even of bottled oxygen for emergencies if the air intakes are buried under debris or the outside air is too hot because of fires. It may be worth noting that the standard Soviet filter-ventilation system has been in industrial production since 1950. Simple shelters will use sand and gravel filters and hand or bicycle air pumps.

The extent of available ready shelter space is not known. Some shelter construction has been going on for at least 15 years. There are numerous reports mentioning the existence

of shelters in many factories, and in buildings and villages in all parts of the Soviet Union, and we even have photographs of some of them. I saw quite a few shelters in the nine cities I visited in the Soviet Union in 1960.

The current program requires only the construction of shelters as essential facilities, while in the rural areas most of the fallout shelters apparently will not be built until there is a threat of war. How quickly can such shelters be prepared? According to a Soviet manual the adaptation of a one-family basement shelter requires 20-30 man-hours while that of a storage cellar for 20 to 30 persons will require 90 to 100 man-hours. In one case it is reported that a basement shelter with a 200-person capacity was prepared and equipped in 24 hours, while a mine shaft for 7,000-person occupancy took about 36 to 48 hours. It is claimed that a 10-12 man team using heavy construction equipment can install shelters made of pre-cast concrete conduits for 50, 100, 150 and 200 persons in 28, 47, 60 and 70 hours respectively. With construction plans for various types of shelters being widely available and every citizen being trained in how to build simple fallout shelters, the speed of construction probably is above all a function of available building materials. The Soviet authorities also recommend the building, in the larger cities, of dual-purpose shelters such as underground restaurants, garages and motion picture theaters so as to reduce their cost.

Although many shelters are known to exist, Soviet spokesmen indicate that shelter construction is still going on. Recently a Civil Defense official from the Moldavian SSR complained that the "construction of shelters for working shifts proceeds extremely slowly." In any case, each citizen is expected to know the location of the nearest shelter from his place of work and residence.

#### **Preservation of Economic Production in Wartime**

Great attention is being devoted to the problem of how to maintain industrial and agricultural production under conditions of a threat of war and in wartime. In addition to the dispersal of industry and the possible evacuation of some of it in a crisis, Soviet planners recommend various other measures, such as building blast walls around critical structures and equipment, burying power cables and other vital pipelines, limited reinforcing of important structures, the removal of flammable and toxic stockpiles, pre-stocking of critical repair materials, especially for the more vulnerable installations at each plant and other similar measures. Surveys of each plant's vulnerability are being conducted. There is a great deal of interest in duplication of power sources and lines and in the building of transportation by-passes around potential target areas. Specially trained civil defense units and teams at each plant will be required to attempt to limit and repair the damage in the event that the plant survives the attack.

In the rural areas great stress is placed on the protection of livestock, water supply, food storage and crops. The villagers are trained in techniques to protect livestock

against CBR agents, including provisions of gas masks for cows and horses. Veterinary and agrochemical services and laboratories are organized to deal with animal and crop diseases. Food and fodder storages will be protected against contamination, and steps are being taken to anticipate the slaughter and use for consumption of contaminated live stock.

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## **gas masks**

## **for cows**

## **and horses...**

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#### **Post-Attack Measures**

One of the more unusual features of Soviet Civil Defense is its insistence on conducting extensive rescue, fire-fighting, decontamination and other damage-limiting and repair operations *immediately* after the nuclear strike. This work will be performed by specially trained teams of factory workers which will be evacuated to the rural areas prior to the attack, and which will be reinforced by teams organized in the villages and by military Civil Defense units. Much special equipment—vehicles, helicopters, heavy construction machinery and so on—has been prepared or earmarked for this purpose. To the extent that damage and fallout will permit (the teams are supposed to avoid zones with over 50 roentgens per hour radiation and not to exceed a cumulative dose of 100 roentgens) large numbers of rescue workers will be moving toward the disaster centers after the strikes. One of their most urgent tasks will be to dig out buried and damaged shelters and to evacuate those threatened by floods and fire as well as to help the wounded. There appears to be little concern about the possibility of second strikes on the same targets.

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## **an important asymmetry...**

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Soviet open sources do not discuss post-attack recovery plans beyond the critical repair and rescue efforts. Presumably such plans are being worked on, for a key concept of the entire Soviet view on war is that the production of additional weapons and supplies is essential to sustain the war effort beyond the initial nuclear exchange in order to attain eventual superiority over the enemy both in military capability and in the relative rate of recovery. Success in this may spell "victory" in the war.

## Conclusion

The available evidence strongly indicates that currently Soviet Civil Defense has grown in scope and importance since the 23rd Party Congress in 1966 and the unprecedented public endorsement of it by the top leadership. The Civil Defense program has been able in recent years to call on far greater Party and Government support and investment than at any time since World War II.

The most significant development in recent years is the increased emphasis on urban evacuation and dispersal. It is also evident that the system favors the protection of the socially more "valuable" elements of the population, i.e. essential workers, employees, officials, and that measures to protect these elements are well advanced. Even so, the program, while still expanding, has many shortcomings and is far from being completed. Nevertheless, in the opinion of some observers, given reasonable plans and preparations, and a trained population, as well as some of the favorable conditions on which the execution of the Civil Defense system appears to rely, such as several days of warning,

Soviet Civil Defense may perform quite well. Conceivably it may succeed in removing a major portion of the urban population from target areas to fallout shelters in the rural zone, and in sharply reducing civilian casualties. The Soviet Union may also achieve a capability to maintain an evacuation and dispersal posture for some time without unacceptable damage to its economy. In a crisis this could result in an important asymmetry between the Soviet Union and the United States which could give Moscow a significant psychological and political advantage. Finally, insofar as the United States relies in its "assured destruction" on the killing of a certain percentage of the Soviet population as a part of its deterrent threat, Soviet Civil Defense, under appropriate conditions, may make this threat less credible.

In any case, the evidence irrefutably indicates that the Soviet authorities persist in regarding Civil Defense as an integral and important part of the overall Soviet defense capability, and that they are willing to continue to invest in it relatively scarce resources and manpower on a scale which undoubtedly greatly exceeds that of the United States. ■

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Thanksgiving Day 1970 was something more than a turkey dinner to residents of the Kahaluu, Keapuka and Pali Highway areas near Honolulu, Hawaii. Torrential rains, which began the day before, brought flood waters of up to 10 feet. The Hawaii Civil Defense Division implemented emergency evacuation measures at 12:20 a.m. and kept close tabs on developments throughout Thanksgiving morning. Result: *no* deaths, *no* injuries, plenty of mud. A fine example of disaster control by a CD team capable of responding effectively around the clock.

Queries on availability of back issues of *Survive* come in from readers and libraries throughout the year. We are happy to oblige as best we can. See page 17 for a special offer of back issues.

Maos Haim, a "kibbutz" (settlement) in Israel on the west bank of the Jordan River, is one of 60 frontier kibbutzim established in recent years to guard Israel's borders. It expects and it gets (except for periods of truce) a regular diet of Arab artillery. This situation calls for underground shelter for its population of 550. Since the 1967 "Six-Day War" all Maos Haim children under 13 have slept in the shelters—away from their families. Children under 3½ have never spent the night above ground. Shelter living has become a daily routine, and shelters, although cramped, are now attractive nocturnal "homes."

# The THOUSAND-YEAR

Prior to the Punic Wars, ancient Carthage, which also had luxury standards of living, failed to provide an adequate defense against Rome, and did not survive.

Carthage was an affluent society which persistently deluded itself about Roman intentions or glossed over Rome's capabilities. Carthage grew bored with the cold war of its own era; it became impatient with its raucous allies; it failed to sustain its great general, Hannibal, who perceived the threat clearly.

Across the Mediterranean, an old Roman senator ended all of his speeches with the words "Carthago delenda est," which translates as "We will bury you."

The Carthaginians, however, preoccupied with business-and-pleasure-as-usual, refused to believe that Senator Cato really meant what he said.

And so their civilization was swept into the dustbin of history.

Rome, in her turn, arrogant in her splendor, entertained with bread-and-circuses, did not survive the challenge of the Vandals and Visigoths.

Neither Roman law nor Roman architecture held back the barbarian horde. Nor did Rome's gross national product protect her. The Vandals had no gross national product whatsoever. They had weapons, will power, leadership and what, to the Roman civilization, must have seemed an "irrational" lust for conquest.

Is Roman history irrelevant to the space age?

We will soon be celebrating the 200th anniversary of the birth of the American experiment with liberty and opportunity.

Looking backward in the context of national defense

we may conclude that America, alone of the great powers, has been incredibly fortunate in its geography.

And that fortune has created a dangerous illusion—the notion that war is an abnormal phenomenon.

Throughout most of our history, except for the past quarter of a century, we have been isolated from the direct shock of war by our great ocean moats and the shield of the British Empire.

So protected, we have devoted most of our energies to the taming of a continent and the improvement of our internal economy.

So protected, we have regarded peace as the "norm" and war as "unnatural." We have known no tragedy on our own soil since the civil war. Even World Wars I and II were "limited" wars, from the American viewpoint, since our factories and homes enjoyed sanctuary from enemy attack.

Now America, the first classless democracy to shoulder responsibility for world stability, stands cheek-to-jowl with the great powers of the vast Eurasian land mass. Unfortunately, abstract idealism finds echoes today in the voices of those who cannot discern the differences between the power grabs of the communist giants and the reactive foreign policy of the United States on behalf of communist victims. Most American civilians still prefer to ignore the unpleasant realities of defense. In our collective subconscious, we have agreed that we "ain't gonna war no more."

\* \* \*

A nation that faces, as we do now, the possibility of nuclear war, must look beyond the immediate dislocation to the very continuation of its governmental system. Thus, we must not merely prepare for the survival of individuals but also the survival of our democratic system.

**EDITORIAL**



# NIGHT

To insure that, the pre-war government has an obligation of highest priority to be certain that everything is done to preserve the post-war population's confidence in government. It is obvious that, in the case of nuclear war, confidence would be shaken to the point of anarchy if no or inadequate provision had been made for civilian defense.

The harm which any weapon can cause can be diminished by suitable protective measures. This applies to nuclear weapons. The questions to which we seek answers are, therefore, not whether protection against nuclear weapons is possible, but how such protection can be established, and how effective the protection can be. In the language of the social scientist, our inquiry is directed toward the costs and rewards of civil defense.

On the other hand, there must be a case for minimizing our defenses against nuclear attack, because opposition to nuclear defense has been powerful in three administrations. Despite the fact that he has identified himself as a proponent of both fallout protection through civil defense and the thin ABM system, Ex-Secretary of Defense McNamara is the main architect and advocate of the argument against nuclear defense. It is officially called the doctrine of "assured destruction." Others call it the "balance of terror." It might also be called the "doctrine of assured vulnerability." The theory says that peace between the two great nuclear powers is best kept by assuring the capacity of each to destroy the other.

The question remains as to why this nation, unlike the Soviet Union, finds civil defense—protection of people at home and at work a controversial and unappetizing undertaking.

Civil defense is a basic factor in the deterrence equation. That is, a potential enemy is apt to refrain from attacking

us if he knows that we can absorb the blow by sheltering the population.

Further, a nation that offers its people physical means of protection can stand up more resolutely to "nuclear blackmail" and other threatening maneuvers in the international area.

Either we create for ourselves, by serious study and forceful speaking-out, a healthy climate of opinion which supports a bi-partisan civil defense effort and an ABM policy, or the tides of political warfare wash away our civilization. Indeed, if America should ever be pushed into a corner by Soviet power and propaganda, isolated from her allies, divided against herself, the epitaph on her tombstone might well read:

"Here lies the only civilization which perished at the peak of its power, with its power unused.

"Here lies a decent people who wanted love, not Empire, and got neither; who tried to trade power for popularity and lost both.

"Here lies a nation of advertisers who knew how to change consumer tastes in cigarettes, but were themselves manipulated on all the issues that really mattered to their salvation and survival.

"Here died a sort of Lancelot in the court of nations who, granting all his grievous flaws, was still somehow the noblest knight of all; except this Lancelot, crippled with an undeserved guilt complex, let his weapons and ideals fall unused, and so condemned all mankind to 'the thousand-year night.'"

**- by John C. Leary**

# "DREAM WORLD" PLANNING ?

*Excerpts of presentation made by National Director of Civil Defense John E. Davis to the Special Subcommittee on Civil Defense of the Committee on Armed Services, U. S. House of Representatives, October 13, 1970:*

Studies of a wide variety of hypothetical attacks. . . provide realistic damage estimates and reasonable conclusions on what should be done to cope with possible attack.

While it is technically possible to provide shelter from the blast and heat effects of nuclear attack, as well as from radiation, the cost of such protection would be many times that of fallout shelters. Considerable research is being directed to lowering the cost of providing protection against the initial effects.

Extensive study has also been given to the evacuation concept which would provide for the removal of the population from assumed high-risk areas in lieu of the provision of shelter. This concept was rejected several years ago for nationwide application for two reasons: (1) the probable short warning time of missile attack, and (2) the overriding hazard of radioactive fallout.

I am particularly concerned about the steady buildup in the Soviet military threat. . . (Defense) Secretary Laird pointed out that the Soviet Union since 1965 has had a five-fold increase in its strategic offensive missile launchers—with an accompanying four-fold increase in total force megatonnage. By contrast, the United States has had no increase in force level in strategic offensive missile launchers,

but there has been an accompanying reduction in total force megatonnage of more than 40 percent.

Quoting Secretary Laird. . . :

“. . . Our restraint in weapons deployment during the past 5 years and the Soviet buildup in the same period have led to a current situation where we are, in essence, at a crossover point in the strategic plans. What gives this concern urgency is the momentum behind Soviet deployments and developments in major strategic systems that could carry them well beyond the crossover point in a short period of time, unless we take major offsetting actions.”

We are in this business for one primary purpose: To safeguard people. *Programs* are secondary.

And responsible public officials must face up to facts, and fulfill their responsibilities to protect the people.

In this regard, let me present another pertinent quotation—this one by the President:

“I believe that defense decisions must be made on the hard realities of the offensive capabilities of our adversaries, and not on our fervent hopes about their intentions. . . We cannot survive in the real world if we plan our defense in a dream world.”

Comment of part-time student shelter surveyor (Summer 1970):

*“Prior to last summer I viewed civil defense as a nice, obese, and unwarranted government blunder. If there has ever been a 180-degree change of heart and mind it took place during my summer employment with the Army Corps of Engineers.”*

Carmin G. Novis, Director of New York City's Civil Defense, on December 14, 1970 announced the inauguration of a hospital training program for the problems created by the radiation accident patient. The goal of the program is to place radiation emergency medical care in proper perspective. Seminars are now being conducted at New York hospitals to familiarize hospital personnel with the handling of radiation victims.

Last September members of the “Disaster Response Force” at Wurtsmith Air Force Base in Michigan provided a full-scale orientation for more than 350 firemen, policemen, medical personnel, and other crisis specialists from north-east Michigan. In the past three years the Wurtsmith Disaster Control Office has presented this program to over 1,000 civilians.

## CD CALENDAR

- |               |  |
|---------------|--|
| March 14-17   | Conference, United States Civil Defense Council—Washington, D.C.                                       |
| June 13-17    | Conference, National Association of State Civil Defense Directors — Grand Teton National Park, Wyoming |
| October 17-22 | Conference, United States Civil Defense Council—Las Vegas, Nevada                                      |



Jack Different—interviewed below—is Executive Director of Mississippi's Gulf Regional Planning Commission. He has worked and lived in the "Camille area" for over five years. He and his wife were washed out of their Pass Christian home by the raging tide at the height of Hurricane Camille's fury. His knowledge of the Mississippi coast is both intimate and professional. Urban development was his business before Camille. It is his business today.

## A Staff Report

# BEHIND THE "CAMILLE" SCENE

Almost eighteen months after Hurricane Camille decimated the Mississippi Gulf Coast much of it remains stretches of rubble. Scars and skeletons and weeds dominate the affected area. A visitor is wont to assume that the dimensions of destruction have paralyzed the recovery effort, that the drama is one of despair, and that a workable plan for rebuilding is just about hopeless.

Not so. The brakes on reconstruction are deliberate. They are meant to prevent a hurried hodge-podge of shed-type building that would breed eyesores and invite future hurricane havoc. The brakes are in the form of tightly revised building codes and urban renewal which embrace a complicated effort at revised zoning, ownership transfers, and enlightened construction practices.

Pre-Camille planning provided the framework. In 1965, with an eye to improving the Gulf Coast vacationland environment and encouraging storm-resistant construction, the Gulf Regional Planning Commission was established. Four years before Camille it began the slow work of outlining future development for the four counties it served: the three Mississippi coastal counties of Harrison, Hancock, and Jackson, and the interior county just north of Harrison—Pearl River.

When Camille's 200-mile-per-hour winds bore down on Harrison County's four coastal towns\* this commission's recovery work was already in motion. Almost before the 20-foot-plus tides receded Executive Director Jack Different brought together an *ad hoc* committee to undertake an immediate study of the problem of rebuilding. A freeze was placed on the issuance of building permits. Within two weeks the committee had drawn up its first draft of recommended basic construction codes. Within six weeks the codes had been reworked and were being invoked. A "Governor's Emergency Council" was appointed and became the

sponsor of the code as well as the vehicle which assisted the counties in its enforcement.

"Our aim," says Different, "is not to see how *quickly* we can come back. This type of effort would lead to a repetition of previous mistakes and a needless exposure of people and property to the ravages of future storms. Our aim is to build new buildings which are protected to as high a degree as practicable from the effects of hurricanes and tornadoes and to plan rebuilding so as to give our residents and our visitors as beautiful and as safe a resort area as possible. We aim to be a greatly improved 'American Riviera' when we finish. This route takes time, and it takes patience and understanding. There are many complications. In general, along the 27 miles of destruction we hope to place a heavier accent on condominiums, first-class hostels, and general commercial complexes. It is much easier to obtain high quality construction in such buildings than in one-family residences. A generous sprinkling of small parks and other public areas—again carefully planned—will give us factors of space and landscaping that will make our waterfront more attractive than ever. Much, much more."

A hurricane of the intensity of Camille in the Gulf of Mexico is a rarity. According to the U. S. Army Corps of Engineers the frequency of such storms is one every 170 years. According to Mississippi historians it is one every 300 years. A storm of comparable intensity was recorded by an observer in an early settlement a few miles east of Biloxi in 1670.

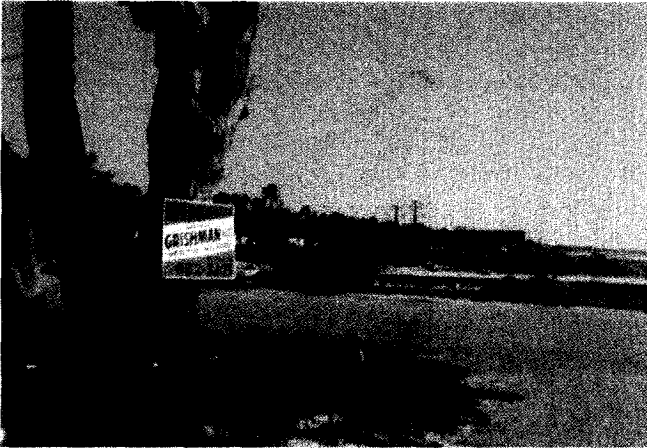
"We cannot reasonably design buildings to fully withstand the water and wind forces produced by a Camille," continued Different, "but we can improve immensely our reaction to them and we can certainly build to cope with the forces of the hurricane with 100 to 150 mph winds and 8 to 12 foot tides. We have come to know this latter type of storm all along our Gulf and Atlantic coasts. From an engineering point of view we *can* protect ourselves and our property from them with excellent assurance of success.

\*Biloxi, Gulfport, Long Beach, and Pass Christian (plus Bay St. Louis, Waveland, and to a lesser degree—Ocean Springs in adjacent counties.)

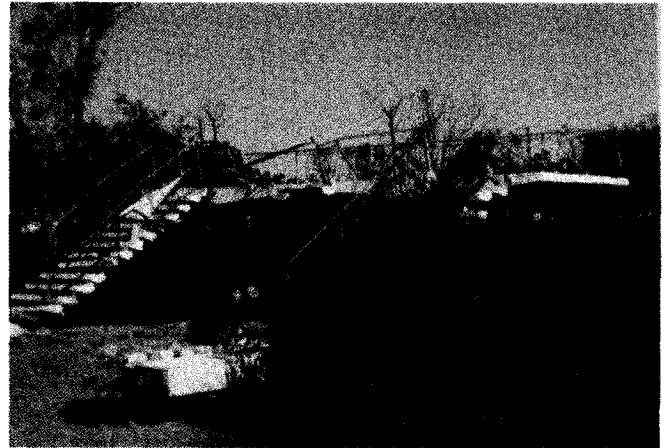
Why not do it? This is the gist of our code.”

The code attempts to present a flexible set of requirements to the builder. It does not tell him what materials to use. It simply tells him what he must design for. Chief among the new special requirements for the “critical exposure zone” are the following:

- a. A building site must be at an elevation of 12.5 feet



rams which did a great amount of damage that wind and water by themselves would not have done. The building code, by reducing the number of ‘uprooted’ structures, will serve to reduce the number of these mammoth battering weapons in future storms. There has been speculation on how much ‘Camille’ damage was due to water action and how much to wind action. After studying this relationship over the past few months we arrive at a rough estimate of



or more above mean sea level. (A tide that would reach this height has been recorded only three times in history along the Mississippi coast.)

- b. Buildings must be designed and constructed to withstand winds of 120 miles per hour and “to transfer wind forces to the ground.”
- c. No allowances are to be made for shielding by other buildings.

The code also covers variations in shape and elevation above ground, as well as the design and use of building components. It gives the builder latitude in that he may be permitted to by-pass the necessary inspections if his architect or engineer will execute an affidavit to the effect that the building plans conform to the code, and a certification after construction that this has been done. In this case full responsibility for conformance to the code is placed upon the architect or engineer.

“One fact which played a big role in the Camille disaster,” says Different, “is that many buildings were demolished not simply by the action of wind and water but by parts of other structures torn loose and impelled by the terrific tidal action. These big chunks of houses, piers, vehicles and other items then literally became battering



Today the once picturesque “American Riviera” is largely a panorama of ruins.

60% water damage and 40% wind damage.

Because of the code’s flexibility, new buildings in the “critical exposure area” are of several types. Some use wood extensively. Many reveal a sturdy steel frame. Steel reinforcing appears in the erection of masonry walls. With the accent on commercial and motel-apartment complexes, masonry construction can be expected to play a prominent role in rebuilding.

What is new in the Mississippi code is that it imposes requirements on builders beyond those of the usual standard building code. It is a “first” on the Gulf Coast. It is in fact experimental. Three questions arise in making an analysis of the impact of the code:

- a. Will it be effective?

Answer by Different: “If carried out in good faith by administrators who fully appreciate what it will do in terms of life and property economy—yes.”

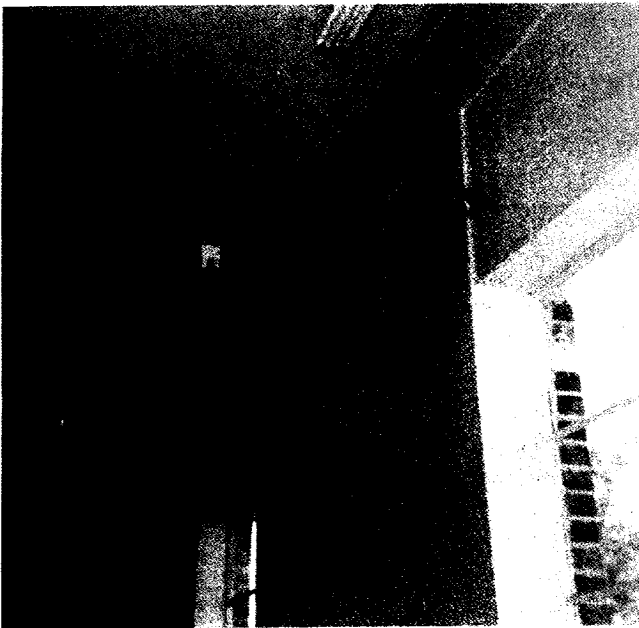
- b. Is it applicable to other parts of the Gulf of Mexico coastline?

Answer by Different: “Of course. Although two or more hurricanes can hit one coastal area within the space of a few years it is fact that the entire Gulf Coast is

vulnerable. So are other coasts. But at present there is a much sharper incentive to take the question of severe storm casualties and damages seriously in Gulfport or Biloxi than say, in Panama City, Sarasota, Ft. Lauderdale, Savannah, Norfolk or Halifax. One might also contend, with a good bit of logic, that the code is applicable to inland areas subject to tornadoes.”

c. Will it produce construction valuable as shelter from the effects of nuclear attack?

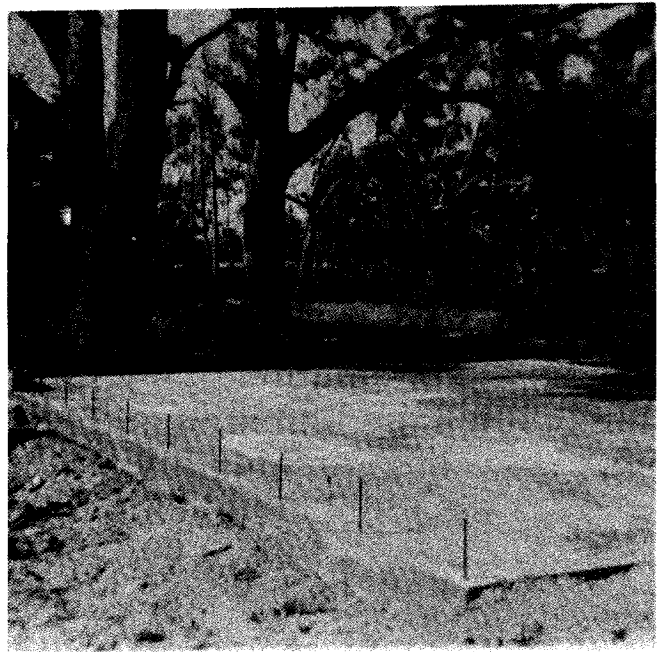
Answer by Different: “In some cases, yes. This type of protection is not our primary goal, but quality construction always makes for better natural disaster shelter. Wherever there is a desire to provide in addition to this a civil defense type shelter it can be done with relative ease where heavy masonry construction is used. It’s a matter of policy and planning.”



**Beams in the interior of a new service station in Gulfport are material evidence of the new building code.**

Asked if there was any opposition to the code, Different replied: “Certainly. Some are unwilling to accept the small additional cost, and some find that changes in traditional construction methods are difficult to digest. But aggravated cases of this kind are rare. We try to play ball by giving the builder all the options we can. He in turn usually has no trouble in understanding that the code protects him and those who will use his building. And there’s some good, honest salesmanship involved. Costs are usually a little higher. But building life is increased. Insurance is cheaper, and less maintenance is a savings that lasts year after year. That’s not hard to swallow. Anyway, the law is the law, after all. People are inclined to accept it.

“As for the psychological wrench of the storm on the people here, this was short-lived. I’m afraid we now have somewhat the same kind of apathy found in civil defense



**Steel reinforcing will anchor wall to its foundation.**

attitudes. ‘Camille history’ is in its second year, and you might say that Camille is now spelled with a small ‘c.’

“This all brings to mind another logical step any recovery effort of this kind could take: it should achieve a synchronized working relationship with civil defense. Objectives are pretty much parallel. And close coordination would really pay off.” (WM) ■



**Unincorporated Henderson Point, a former residential area, was almost obliterated. Plans are to develop it into a motel and apartment area with a scenic park at its western end.**



## **International Disaster Assistance Plan**

Press Release No. 257 (November 25, 1970) issued by the International Civil Defense Organization in Geneva, Switzerland reports the completion of the first step in organizing mutual disaster aid among member nations. This step was the unanimous adoption of a proposed plan by the 17 countries whose representatives make up the Executive Committee.

Based on a world "regional" concept in order to provide realistic support, the plan depends upon mutual assistance agreements set up by the particular nations. The plan was presented by the Civil Defense Authority of the United Arab Republic. According to its provisions disaster assistance is set in motion simply by request of the stricken country. Regional disaster centers then take action according to the type of disaster, its extent, and the resources available to them. Delays and mistakes occasioned by initial confusion, misinformation, inexperience, and disorganized responses are largely eliminated. Needed help gets to those who require it on a direct-line arrangement by informed suppliers.

Approved also was a national emergency prototype plan drawn up by the Yugoslav Federal Civil Defense Department. Both plans were based on prior recommendations of the United Nations General Assembly in 1965 and 1969.

## **A New Governor Speaks Out**

From the January 6, 1971 inauguration address by incoming Florida Governor Reubin O'Donovan Askew:

"Inherent in our commitment to action is a belief that state governments can no longer wait for the federal government to solve our problems. It is now obvious that the inadequacies of our society are matters properly dealt with by government. But it has become equally obvious that the solutions are not to be found in Washington. If there is anything that has become certain in the last decade, it is that even the most well-intentioned federal program is too many miles and too many administrators away from implementation."

## **Urban CD Looks At Urban Dilemma**

Twenty-nine municipal civil defense directors representing over 31,000,000 people aired CD problems in Battle Creek, Michigan January 5th through 7th.

Urban centers, they agreed, face radically different defense situations than do smaller towns and rural areas. Other questions produced less accord. Some who had recently completed community shelter planning, for instance, felt that results left much to be desired. Among those who were now contemplating the plan there was more optimism. Targeting possibilities were critically examined, and one director pointed out that the movement of people to downtown shelters actually *created* targets.

National Civil Defense Director John E. Davis cautioned directors not to expect panaceas. It was announced that the long-awaited Lincoln Report would reach the National Security Council on January 21st. The Nelson Study is also approaching its final review phase.

Davis stressed the role of the big city director as that of an "emergency coordinator" who serves local government and tailors his job to local needs. Each attending director presented a "position paper" covering (1) community shelter planning and (2) the future position of civil defense in metropolitan areas.

## **Arms Control - Soviet Style**

Starting with 200 diesel-powered submarines at the end of World War II, the Soviets embarked on the largest "peacetime" submarine construction program in history, producing over 570 modern submarines in 25 years—most designed for long-range operations. During the same period we built 105 submarines. In two years alone—1955 and 1956, the Soviets completed 150 submarines, one and one-half times the total number of submarines produced in this country during the past 25 years. The Soviets now possess the largest and most modern submarine building yards in the world, giving them several times the nuclear submarine construction capacity possessed by the United States. In addition, ten times as many naval architects and marine engineers are graduating in the U.S.S.R. than in the U.S.

—from *Washington Report*, December 7, 1970  
(published by the American Security Council)

## Survival Fare Looking Up?

Emergency food stocks can be practical and inexpensive. Less than 75 cents per person per day is the price tag that one firm—United Commodities International\*—puts on a balanced diet in its recommended condensed food stocks for periods of eight weeks to six months.

A reserve food program based on relatively expensive conventional canned and packaged goods has the serious disadvantages of a short “shelf life.” In humid climates rotation of these items is needed every six months and is often a neglected nuisance. With its dehydrated products in No. 10 cans, encased six cans to a “stabilized storage atmosphere” carton, United Commodities claims a shelf life of over ten years. Freezing, excessive heat and humidity are no problems.

Mormons and 7th-Day Adventists have long practiced emergency food stockage for economic crises as well as for disasters. Companies such as American Telephone and Telegraph, with extensive plans for continuing operations in attack situations, are relying more and more on the dehydrated product, which in addition to its low cost saves them replacement time as well as storage space.

Unlike the standard survival biscuit and carbohydrate supplement—both excellent nutritionally—the dehydrated foods come in interesting assortments. There is a strong emphasis on palatability as well as a balanced diet. Beef, chicken, and ham (all in chunks) head the animal protein list, while vegetables include corn, peas, cabbage, beets and even celery stalks. Starches, fruits, seasonings, beverages, and desserts round out the menu.

\*United Commodities International, P. O. Box 2125, Beaumont, California 92223.

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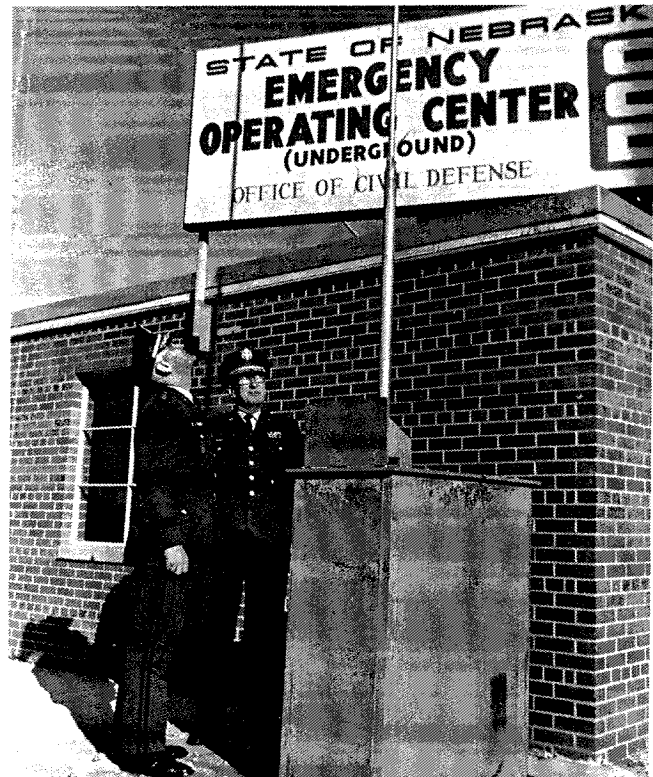
Carolyn Carver  
Business Manager, SURVIVE

The life of any nation in the free world is built around the predictable behavior of the “average” man, and he, in turn, must perforce seek to conform to the world around him, merely in order to survive and enjoy the “good” things of his world; so that he has little time or inclination to concern himself with national and world issues: he must necessarily leave these matters to the authorities. But if the latter should decline to accept the views of those best informed on the issues, or if they choose to regard the views of the “average” man as the final arbiter, then it is a case of “the blind leading the blind,” and disaster can only follow.

—DeWitt S. Snell

## “FORTRESS NEBRASKA”

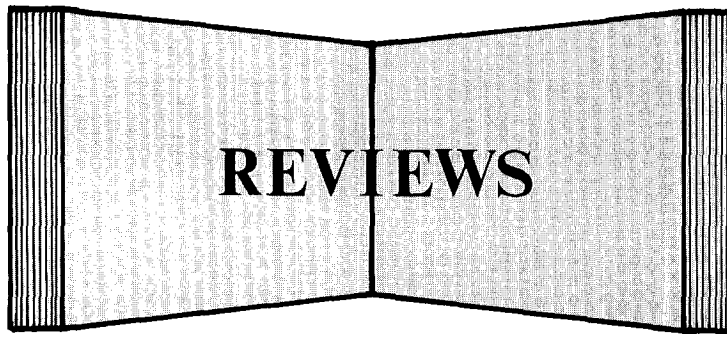
In Lincoln, Nebraska the “twelve-man, six-woman” staff of the Nebraska Civil Defense Agency works underneath its parking lot and 42 inches of reinforced concrete. The 12,000-square-foot emergency operating center boasts a blast-protection rating in excess of 30 pounds per square inch and a fallout protection factor of over 5,000. Built in



General William C. Westmoreland, Army Chief of Staff, is shown (left) during a briefing on the Nebraska Emergency Operating Center in Lincoln, Nebraska. Major General Lyle A. Welch, State Civil Defense Director and State Adjutant General, demonstrates the capabilities of one of two emergency antennas which can push through five tons of rubble and rise to 70 feet.

1962 at a cost of \$400,000 and occupied in January of 1963 the headquarters is completely self-sufficient for two weeks in an emergency. It has two 50-kilowatt generators, a 2,500-gallon water tank, a special escape hatch (in addition to two protected entrances), and stocks to support an emergency government staff of over 100. Anticipating damage to exposed equipment topside two retractable antennas can be pushed up through as much as four feet of rubble to insure continued radio communications.

More than 3,000 visitors a year are briefed here on the role of the disaster headquarters. Lincoln is also well supplied with public fallout shelters and has enough space with a protection factor of 40 or better for over 250% of its population.



# REVIEWS

## OCD Statistical Report 7720.84: *Selected Statistics on the Fallout Shelter Program* (25 September 1970)

In the 1950s Pentagon pundits decreed that an acceptable fallout shelter should have a protection factor (PF)\* of 100 or better. With this standard, shelters were somewhat scarce. In the 1960s the requirement was lowered to a PF of 40. This move put shelter objectives more-or-less within reach without making any political fuss. It was a neat solution for the statisticians.

But it confused the troops. Had the figure of 100 been an error? Were private shelters built for a 100 PF over-designed? Had money been spent needlessly? Was the whole question of shelter a hoax? Civil defense credibility suffered.

It did not restore confidence when OCD began counting shelters down to a PF of 20. Then we turned to the "Category 0" spaces which start with a PF of 10.

No wonder the mention of blast shelter brings smiles.

As a requirement for federal licensing, stocking, and marking the 40 PF figure remained, and the report *Selected Statistics on the Fallout Shelter Program* is based on it. Its statistics are logical in the framework of government policy. To the innocent they can be confusing and misleading.

For instance, the report shows that the United States has shelter spaces for 108% of its population. But taking shelter accessibility into consideration there are spaces for only about 50%. And the greater portion of the 50% would find themselves sheltered in areas of expected blast and thermal effects where *fallout* shelter would be inadequate. While there are, according to the report, 153,000,000 spaces in cities of 25,000 or more for the 81,000,000 people who live there, there are only 43,000,000 spaces for the 101,000,000 who live in rural areas and cities of less than 25,000.\*\* The closer we get to the farm the fewer shelters we find.

Herman Kahn in his book *On Thermonuclear War* divides the United States into two hypothetical countries: Country A with the cities, and Country B comprising the rural areas. He points out that, while it is *not* possible for Country A to survive without Country B, it *is* possible for Country B not only to survive without Country A, but to rebuild Country A in ten years.

Fallout shelter on the farm therefore—where it can be expected to be effective and where it is largely absent—assumes a vital role. Fallout shelter in cities—where it can be expected to be ineffective against initial nuclear-weapon effects and where it is plentiful—becomes of relatively minor importance. Like a wooden house that is effective against rain, but not against fire.

In an article published in the *Farmer-Stockman Magazine* for September 1970, National Civil Defense Director John E. Davis said:

"Farm people are a most valuable national asset. If a nuclear attack occurs, they would be desperately needed to feed all surviving Americans and to help restore and rebuild our American society. . .

"Rural and small-town residents would have a much better chance of surviving the blast, heat and fire effects of a nuclear attack than the rest of the U. S. population. . ."

The OCD report shows only one state—Nevada—as having shelter for all of its rural population. Nevada also shows adequate shelter stocking. (New York is the only other state in this latter category.)

Blast shelter statistics are not given in the report. However, Oak Ridge scientist G. A. Christy estimated in the March-April 1970 issue of *Survive* that over 12,500,000 presently identified shelter spaces are underground. In New York City, he writes, "the subway system provides 1,600,000 adequately ventilated spaces, but only a few hundred of them are actually marked and stocked." Above ground shelter is more easily reached.

Over one-half of the 1,559,000 fallout shelter spaces located in the United States during the first quarter of fiscal year 1971—according to the report—were found in New York City. With a total of 30,000,000 spaces for its 8,000,000 people it hardly needs more.

Rural Louisiana, on the other hand, with 221,000 spaces for its 2,022,000 residents—and where *fallout* shelter will provide ample protection—could do with more. So could rural areas across the nation. If the OCD report has a message it is this: "Country B" needs some attention. A lot.

\*The amount by which the radiation is reduced by shielding is called the "protection factor" or PF. If, for instance, the shield cuts radiation to 1/20 of its outside value we have a PF of 20.

\*\*Statistics in the report are based on 1960 census figures. The 1970 census, with its increase of 25 million, will have a watering-down effect.



*The Military Balance—1970-1971*, published by The Institute for Strategic Studies (18 Adam Street, London, WC2N 6AL), 126 pp. \$2.50.

The vulnerability of American cities to nuclear attack has been exposed by a number of *Survive* writers (including Broyles, Self, and Wigner). It is of interest to note that the plight of American cities is also recognized abroad. *The Military Balance—1970-1971*, a British annual, points this out in analyzing nuclear targeting:

“. . . There is no evidence that the location, at any particular time, of the bulk of submarine-based missile forces is known to either side. It follows that, although targeting land-based ICBM forces for a first strike presents little problem (assuming that those forces are not launched on warning of attack), targeting long-range bomber forces is more difficult and targeting missile submarines is, for the purpose of a disarming first strike, impossible.

“The targeting of a second strike, intended to exact a penalty in terms of civilian population and industry for a precedent first strike, is a much simpler matter. Cities and factories cannot move, and their locations are well known. However, the United States and the Soviet Union provide dissimilar targets for a second strike against civilian targets, simply because, in the former, a higher proportion of population and industry is concentrated in fewer cities.”

Over 25% of the American population, for instance, lives in the ten largest American cities, while less than 9% of the Soviet population lives in the ten largest Soviet cities.

Between 1960 and 1970 Soviet missile production has soared. In numbers of ICBMs it passed the United States in 1969. In numbers of submarine-launched ballistic missiles (SLBMs) it will at the current rate of production pass the U. S. in 1973.

Figure 1 is a *Survive* chart based on *Military Balance* statistics. It is limited to a consideration of numbers of ICBMs and SLBMs. *The Military Balance* also covers other factors which bear on comparative strengths of the USSR and the USA, including medium-range ballistic missiles (MRBL), intermediate-range ballistic missiles (IRBM), and anti-ballistic missiles (ABM). Specific and detailed information on military strengths, appropriations, and gross national products for 96 nations is presented in digestible form.

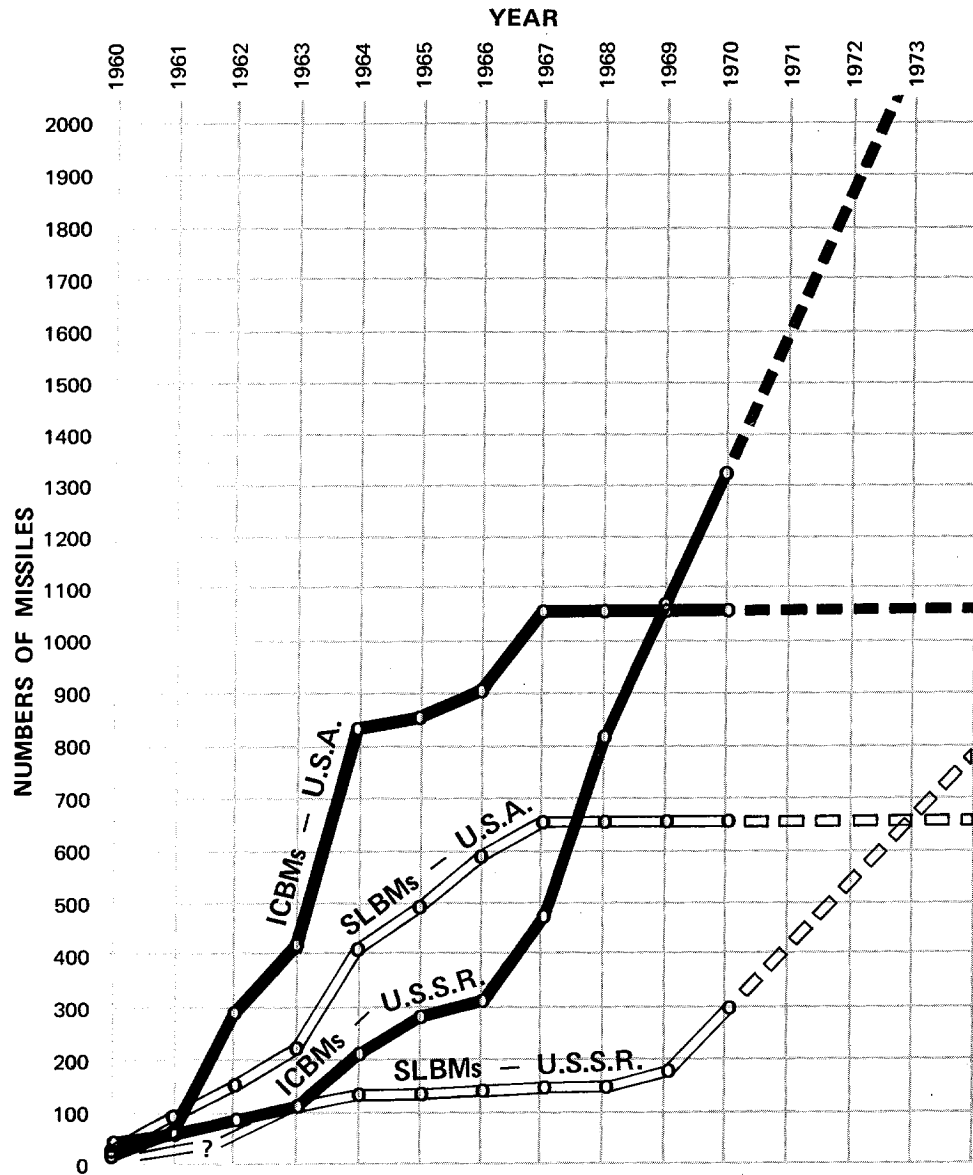


Figure 1—Comparison of Numbers of Soviet and U. S. ICBM (Intercontinental Ballistic Missile) and SLBM (Submarine Launched Ballistic Missile) strengths from 1960 to 1970 according to figures given in *The Military Balance—1970-1971*. Dotted lines are *Survive* projections based on current production estimates. Comparison by megatonnage would show a vastly greater Soviet advantage.

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