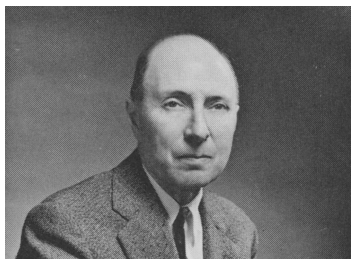


COMMENTARY

TOWARD AN EFFECTIVE CIVIL DEFENSE

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At present, the defense of the United States is based principally on our deterrent, that is, on the threat of revenge for any attack against ourselves or our allies. The question to what degree this deterrent should be supplemented with efforts to render any attack against us less effective has been with us almost since the USSR acquired nuclear weapons. As early as 1950, the *Bulletin of Atomic Scientists* devoted a full issue to the discussion of what we now call civil defense. This issue remains interesting reading after 15 years, and most of the discussion contained therein appears as pertinent today as then. Almost every participant urged one or another form of civil defense. Thus, the editor of the *Bulletin*, Eugene Rabinowitch, wrote: "The fourth," i.e., civil defense measures, "was—and remains—the only fully effective means of reducing the consequences—and thus the likelihood—of an atomic attack, if rational attempts to make it impossible prove futile."

Much has been done since 1950 toward protecting our people against the consequences of a nuclear war. Marked fallout shelters are available for 70 million people, and supplies of food and water are on hand for more than 60 million of these. Yet much less has been accomplished that could have been, and, in particular, the USSR has far surpassed us in civil defense preparations. This situation is fraught with danger not only because any shift in the relative deterrent capabilities exposes us to threats and intimidation but also because our nakedness against aggression heightens the fears and apprehensions of our people and is, thereby, responsible for much distrust and fear. The present state of our civil defense preparations also hinders disarmament: responsible leaders hardly can advocate far-reaching measures toward disarmament as long as the concealment of a relatively modest supply of weapons gives a decisive advantage to the aggressor.

There are several reasons for the lag in our civil defense preparations. First of all, such preparations have to be carried out in plain sight of everyone, and errors in judgement become not only embarrassing but also tend to discredit the program. Such an error was the plan to evacuate our cities in case of attack. (Incidentally, the same error was made by almost all contributors to the aforementioned issue of the *Bulletin*.) The evacuation proved too difficult to organize. Errors similar to the planning of evacuation are not uncommon in other areas of planning, but they are not exposed to the same extent to public scrutiny. Another cause of the lag in civil defense preparations is the opposition of some over-refined circles. Members of these circles want their freedom to be defended, as they are willing to pay in money for such defense. However, they wish to delegate the responsibility for defense and to have no further contact with it whatever. Since civilian defense is impossible without the participation of the civilian population, they are opposed to it. Unfortunately, no society whose members have considered it beneath their dignity to defend it has ever survived.

However, the last and probably most important reason for the lag in our civil defense preparations is that most people are not convinced that the defense against nuclear weapons could be effective. The number of well-written scare stories is enormous, and even though some of these, if read carefully, clearly admit that the horrible conditions they describe presume the absence of civil preparations, the impression they give to the reader is one of hopelessness. The effectiveness of these stories is, naturally, smallest where people have some direct knowledge of nuclear weapons and nuclear energy, and one finds, in fact, wide-spread participation in civil defense activities in Los Alamos, Livermore, and Oak Ridge. For the same reason, I hope for more understanding from the readers of *Nuclear Applications* than I could expect from the general public. The best means of counteracting the horror stories is, naturally, to clarify the situation: to explain the possibilities as well as the true limitations of civil defense measures to all people. All of us can participate in this educational work. It would be most useful, also, to install a truly effective civil defense system somewhere, for all to see what it would consist of and how it would work. We are endeavoring to have such a 'prototype' built.

Is there reason to hope that the present very bleak outlook for a strong civil defense effort will change? Let us go over the reasons that prevented this so far. The errors in planning, which were mentioned as the first cause for the present difficulties, are not so likely to be repeated because, as a result of the test cessation, the development of new offensive weapons is proceeding at a much slower pace than before. It is easier to plan a defense against something known than against the discoveries of tomorrow. As to the counterpropaganda, it will not abate. However, we must have confidence that the majority of our fellow citizens will arrive at a sober evaluation of the pros and cons and that they will refuse to bury their heads in sand. I am sensing some change in the attitude of my acquaintances who, in the past, have opposed civil defense. Perhaps the report of the Harbor Study, a study sponsored by the National Academy of Sciences in which a group of 63 natural and social scientists explored the possibilities, promises, and limitations of civil defense, will also have some effect. As to the technical problems of civil defense, a good deal of work is in progress on them—I am working on a project in Oak Ridge myself—and there is hope that the efforts will not remain fruitless.

What can we hope from a more adequate defense of the civilian people of this country? The reduction of the temptation for 'nuclear blackmail' should result in a more quiet international atmosphere, as would also the decrease in the disparity between offensive and defensive weapons. This gives, at present, a great advantage to the aggressor and provides thereby a most undesirable incentive. If we achieve some measure of success in the civil defense effort, disarmament will become more nearly a real possibility, further reducing the disparity between offense and defense. Perhaps if all this comes true, we shall be closer to the ideal described in President Johnson's letter to Glenn Seaborg in which he said, "I believe we shall ultimately achieve a society in which man can live in peace, enjoy the freedom and personal security to shape his destiny according to his individual beliefs, and have the leisure to contribute to the culture of his civilization."

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