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## MY POINT



### SHOULD WE KNOW ALL THE FACTS ABOUT CIVIL DEFENSE?

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Editor's note: The views expressed in this feature do not necessarily reflect the views of POINT WEST.

"A race between education and disaster" — how often have mankind's grave problems been so described in recent decades. I believe that those words apply with unparalleled force to the issues confronting us all as we ponder the dire prospects of nuclear war and the complex questions of civil defense today.

Confronting dimly appreciated hazards, the man on the street looks to his leaders for advice and for reliable information. He has been given precious little. He has been left in nearly complete ignorance of the facts and figures he should have had to help his leaders plan our national civil defense policy. All too often the press has done little more than criticize a very vulnerable and very culpable civil defense program instead of trying to lead the way in giving readers scientifically accurate facts. In the worst instances, the press has even labeled panic-mongers those who sought by other means to speak out on these uncomfortable but inescapable questions relating to survival.

For the past two years I have been devoting a substantial fraction of my spare time to efforts that, in retrospect, seem little more than educational efforts in this area of civil defense. The experience has left me depressed over public ignorance concerning basic technical facts underlying all of the issues of nuclear war and civil defense. Collectively, Americans seem pitifully unaware of the hard facts in this awesome area of public concern.

We may at times wonder whether the Russian man on the street is thoroughly aware of the awful nature of nuclear war; but we know that, in any event, his ignorance or knowledge will have essentially nothing to do with his country's policies and decisions. But here in America, unless we are to bid farewell to those democratic ideals which have driven us forward for nearly two centuries, it is indispensable that the man on the street — whether in Bangor, Buffalo, Butte, or Buckeye — have the facts before him as he weighs national policy. For in the long run it is he himself who shapes national policy.

The rub comes with the phrase, "in the long run." For the civil defense problem epitomizes the difficulty, sure to become worse in coming years, that technological change unfolds too rapidly for the average man to keep up with new developments. To be ten years behind the times in quantum photochemistry or isotope geology need not bother the average citizen. But to have allowed the public to lag ten years behind the times in facts

and figures of nuclear weaponry and the technology of civilian defense is proving disastrous in terms of national bewilderment and confusion. Should war come tomorrow, only remnant posterity could attest to the fact that permitting the American public to remain in such ignorance of what they were actually up against was utter folly.

The underlying scientific aspects of these problems are too complex to expect the average citizen to be able to dig out the full picture for himself from the widely scattered documents and publications. It takes a good deal of effort on the part of even a trained scientist to piece together the jig-saw picture of nuclear war and its effects from such sources, despite there being many very excellent documents in this field. As one scientist who took the trouble to go through that piecing-together task, I say with considerable assurance that nothing short of a massive and persistent national educational effort could have made or could now make the man on the street adequately informed about these matters. Short of that, the citizens at large will only remain the bewildered, confused, and wholly annoyed citizens now showing signs of readiness to throw the entire national civil defense over the cliff any minute.

That new word we've had to add to our vocabularies, "megaton," denoting a unit of warhead destructiveness equal to the explosive energy of one million tons of TNT, is creating necessity for adding still another term to our vocabularies, "megadeaths." For civil defense is an attempt to find answers to weapons systems of such superb military quality that they can wipe out humans in quantities running into many millions, indeed into many tens and perhaps hundreds of "megadeaths." The only catastrophes in mankind's previous experience in which tens of megadeaths were involved were the Black Death of the middle fourteenth century and World War II. The first of these two was, in relative terms measured in proportion to the fraction of total population destroyed, much the worse; and — a study of the human response to the confrontation of the Black Death is for us grimly apropos today. Johannes Nohl's *The Black Death*, available in (Continued on page 52)

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English translation in paperback form, is one accessible reference chronicling the plague. As I read it recently, I could not escape the conclusion that the average American's understanding of the mode of action of lethal gamma radiation and of the unfolding of radiation death is probably only slightly better than the average fourteenth century German plague victim's understanding of what he was up against. In many large towns of central Europe, bubonic plague eliminated over ninety per cent of the population. Much as this fraction turns our thoughts to past miseries, we must note that nuclear missile warfare can do its deadly tasks not only more thoroughly but also very much more quickly. Within ten to fifteen minutes of the start of nuclear World War III, salvos amounting to perhaps tens of thousands of megatons could easily account for four or five times as many megadeaths as *Pasteurella pestis* produced during two decades of the fourteenth century.

To compare next the quantitative prospects for destruction in World War III with those documented for World War II is to turn away sadly shaking one's head at "progress." For instance, it is now definitely acknowledged by the Department of Defense that about 350 megatons of enemy missile power would, in event of war, be directed against the Titan ICBM-base now under construction near Tucson. By contrast, all of the TNT used in all of the bombs dropped by both combatant forces in all theaters of war during all of World War II amounted to only about 3 megatons! A single one of our Titan missiles will have over five megatons of equivalent TNT explosive energy patiently awaiting use in its nuclear warhead. Our national nuclear stockpile is now greater than 30,000 megatons, and the Russians are generally attributed a stockpile of similar magnitude.

All of this "progress" that man is making in his ability to turn megatons into megadeaths has become possible because of technological breakthroughs of unprecedented scope. If a chemical engineer were to devise a method of extracting copper from Arizona ores at, say, half the present costs, his praises would be sung for years to come. If an agronomist found a way to double the yield of Central Valley cotton, or an animal husbandman pointed the way to doubling beef

poundage on southwestern ranges, the impossible would seem to have been accomplished. But the dollar and cents savings that were achieved by development of the mixed fission-fusion-fission warhead that we all loosely call the "H-bomb" makes all other past or still-hoped-for savings in more prosaic areas pale into insignificance. We, as well as the Russians, the French and English, and, probably all too soon, many other factious nations, can now purchase destruction-power in the form of nuclear warheads at a mere *one twenty-thousandth* of equivalent amounts of ordinary TNT! I know of no comparable gain in efficiency in producing any other major commodity in all the history of technological progress. And, then, add to this the remarkable progress made by both American and Russian engineers in developing missile systems capable of carrying one of these cut-rate warheads to within a ballistic error of less than a mile against a selected target six to ten thousand miles away, and one sees reason to pause and ponder problems of nuclear war and questions of civil defense. War-making on a grand scale has never been so comparatively cheap and so superbly efficient in the past. And man shows no signs of suddenly having lost his propensity for having a go at the other fellow.

In recent weeks, fortunately, there appears to have been a change in national policy in certain matters of civil defense education. So far this change has clearly not filtered down to local levels. But it must. A great deal of effort — competent and judiciously conceived effort — must be quickly expended at all governmental levels if the man on the street is to catch up on the homework his leaders have never yet assigned him. If there are, indeed, ever times when it pays to be ignorant, the present time is certainly not one of them. When any major misstep or delayed decision may eventuate in megadeaths, intelligence and the soundest possible information widely spread throughout the population comprise the *sine qua non* of our survival.

And perhaps if we and all the other citizens of the world's nations ponder these grim facts of nuclear war long enough and study the facts carefully enough we might even use our imagination and intelligence to forge something rather more rational than bigger weapons and better civil defense as a longer-run solution to the problem of the defense of our people and our ideals.

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