

7 minutes to midnight

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## The hands move closer to midnight

As the *Bulletin* begins its 35th year, we feel impelled to record and to emphasize the accelerating drift toward world disaster in almost all realms of social activity. Accordingly, we have decided to move the hands of the *Bulletin's* Clock—symbol of the world's approach to a nuclear doomsday—forward from 9 to 7 minutes before midnight.

The fact that the dangers of a nuclear holocaust are today certainly not less than they were in 1947, when the doomsday Clock first made its appearance on our cover, alone would justify returning the hands to their original position. Unfortunately, there are additional specific reasons why the world situation, at the beginning of 1980, must be judged objectively to have deteriorated since our Clock was last moved, in 1974, from 12 to 9 minutes before midnight, in recognition of the drift toward nuclear anarchy that was symbolized by the Indian underground explosion of a nuclear "device." Today, however, more than ten years after the start of the SALT negotiations, we are still struggling with the acceptance of an agreement which, far from embodying significant nuclear disarmament, retains—if it does not encourage—the accumulation of astronomical numbers of deliverable nuclear weapons by both of the so-called "superpowers"; which is not yet able to address the dangers of an irrational and growing nuclear confrontation in Europe; and which has not even begun to take the minimum steps of restraint needed to shore up a rapidly deteriorating non-proliferation regime.

There is no single factor capable of accounting for the failure of the SALT process. The blame must be shared, on a basis of rough parity or equality, between the United States—with its self-defeating propensity for the premature introduction of destabilizing new technologies—and the Soviet Union—with its stubborn insistence on the sanctity of large numbers of huge missiles as a counterbalance to technical sophistication. Whatever the rationale, both nations have been behaving like what may best be described as "nucleoholics"—drunks who continue to insist that the drink being consumed is positively "the last one," but who can always find a good excuse for "just one more round."

Contributing to our current malaise, as well as to the

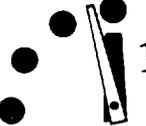
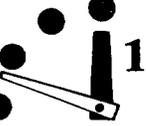
growing political instability which could eventually lead to the Third and last World War, are the approaching crises in the availability—especially, but not exclusively, in the so-called developed world—of sufficient quantities of needed resources at stable prices. Energy is, of course, the commodity that comes immediately to mind; but there are other essential resources, of minerals and food, whose scarcity or inequitable distribution will be more and more acutely felt in the decades to come.

These problems are extraordinarily complex; many of their aspects have been discussed in these pages, and will be further discussed in the coming months. However, our point in raising these issues with respect to the crisis of 1980 is to note that there is, in most cases, a short-term approach capable of buying the time needed to try to devise reasonable longer-term solutions to almost all of our resource problems. This approach hinges on *conservation*—the adoption of available means of stretching out the scarce resources in question. However, a ubiquitous characteristic of our era seems to be the inability of affluent peoples to accept even minimum restraints. There has been a disquieting degree of overtly self-centered greed exhibited in the developed world during the last few years. Under the circumstances, and considering how little of our affluence trickles down to the bulk of the population of the Third World, it would be unreasonable to bemoan the unwillingness of the world's have-nots to modify their strivings for full equality with the haves.

The crises of resources are only one—and perhaps not even the most serious—of the grounds for explosive conflict in the coming decade. Of immediate concern is the spreading trend toward irrationality in the national and international conduct of many states, of peoples aspiring to nationhood, and of dissident minorities (down to minorities comprising only a few individuals) within nations. Each one of us can easily find many examples of this trend toward a return to the social and political behavior of the Middle Ages: the provisional branch of the Irish Republican Army (IRA) or the Italian Red Brigade; the religious fanaticism now in control in Iran and other parts of the Islamic world; the systematic

## The Conscience of the International Scientific Community

The Bulletin clock is a symbolic warning of the lateness of the hour as mankind confronts (or fails to confront) the urgent problems of our times. The minute hand, never far from midnight, has moved nine times since the founding of the magazine at the end of World War II.

 <p><b>1947</b></p> <p><b>7 MINUTES TO MIDNIGHT</b> The clock makes its first appearance on the Bulletin cover as a symbol of nuclear doomsday.</p>	 <p><b>1949</b></p> <p><b>3 MINUTES TO MIDNIGHT</b> The Soviet Union explodes its first atomic bomb.</p>	 <p><b>1953</b></p> <p><b>2 MINUTES TO MIDNIGHT</b> Development of the hydrogen bomb by the United States and the Soviet Union.</p>	 <p><b>1960</b></p> <p><b>7 MINUTES TO MIDNIGHT</b> The Cold War begins to thaw.</p>	 <p><b>1963</b></p> <p><b>12 MINUTES TO MIDNIGHT</b> Signing of the Partial Test Ban Treaty.</p>
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dismemberment of Lebanon, the outstanding modern example of a secular democratic state; the continuing genocidal orgy in Cambodia, demonstrating the contemporary possibility that innocent people may, without choice, end up both red and dead while the rest of the world impotently stands by. These are the most visible, but by no means the only examples of stability crises convulsing small countries throughout the world.

Coupled with the inability of international institutions to contain political crises is the increasing influence, within both superpowers, of the most hawkish elements. These factors are perhaps due to the political vulnerabilities, in both countries, of interregnum regimes. But their existence seems, in our view, more than to justify our decision to advance the *Bulletin's* doomsday Clock a few minutes closer to midnight.

Despite these gloomy portents, the *Bulletin*, as it has been from the start, is essentially optimistic. Our message is not entirely one of the inevitability of nuclear doom. Rather, our concern continues to be for the furtherance of positive approaches through which rational political action and the products of modern technology can be utilized, not only to avoid nuclear catastrophe but to ensure a life of peace and plenty to the vast majority of the Earth's population. Hence, at the same time that we give evidence of our concerns for the world's future—through the advancing of our Clock—we would like to announce the *Bulletin's* list of action priorities for the 1980s. These are positive directions which we intend to encourage through the materials we will publish as well as by any other means at our disposal.

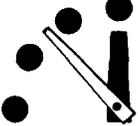
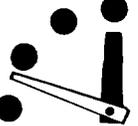
First, as always, the avoidance of nuclear war must remain our primary immediate priority. We cannot give up on SALT and the SALT process, but we must strive to improve its future effectiveness: in the reduction of the levels of nuclear arms; in the selective elimination of the

most destabilizing of the current deployments (heavy, MIRVED ICBMs); and in the prevention of the development of new, even more destabilizing systems (mobile land-based missiles, strategic anti-submarine warfare systems). As the most effective means for avoiding the deployment of such new systems, we shall strive especially for the immediate achievement of a moratorium/ban on the testing of all new nuclear weapons delivery systems, as well as for the long-overdue comprehensive nuclear test ban.

But beyond such attempts to constrain existing (and immensely dangerous) deployments, we must strive to achieve a universal attitude of de-legitimation of nuclear war—a universal recognition that nuclear weapons, like chemical and biological weapons before them, cannot be acceptable devices for the settlement of international conflict.

Our objective is a universal declaration of no-first-use of nuclear weapons (the nuclear equivalent of the Geneva Protocol of 1925). As a first step, it might be easier to achieve an agreement on no-first-use of nuclear weapons against non-nuclear weapon states adhering to the Nuclear Non-Proliferation treaty, especially in connection with the second quinquennial NPT Review Conference, scheduled for this year. But our overriding goal must remain the achievement of a universal no-first-use agreement at the earliest possible date.

In a more general vein, we must work for worldwide reversal of the suicidal Roman dictum—"If you want peace, prepare for war." Even in ancient times, adherence to this idiocy did not prevent the collapse of the Roman Empire; in fact, it probably contributed significantly thereto. But in the nuclear age, the *reductio ad absurdum* of this miserable dictum may be found in the present European situation: Nations representing the apex of human civilization seem able to find no more rational way of coping with the remote threat of force

 <p><b>1968</b></p> <p><b>7 MINUTES TO MIDNIGHT</b> The nuclear weapons club now stands at five, with France, China, Britain, the U.S. and U.S.S.R.</p>	 <p><b>1969</b></p> <p><b>10 MINUTES TO MIDNIGHT</b> Ratification of the Nuclear Non-Proliferation Treaty.</p>	 <p><b>1972</b></p> <p><b>12 MINUTES TO MIDNIGHT</b> Strategic Arms Limitation Talks (SALT) lead to first nuclear arms control agreement between U.S. and U.S.S.R.</p>	 <p><b>1974</b></p> <p><b>9 MINUTES TO MIDNIGHT</b> SALT fails to make progress; India joins the nuclear weapons club.</p>	 <p><b>1980</b></p> <p><b>7 MINUTES TO MIDNIGHT</b> Danger of nuclear war increases; irrationality of national and international actions.</p>
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than to expose themselves to the very real possibility of self-immolation followed by worldwide nuclear annihilation.

We refuse to accept the conclusion that the NATO-Warsaw Pact nations have reached an impasse in their attempts to introduce some rationality into their conventional and nuclear arms competition by drastically reducing their arsenals. The *Bulletin* will, in the coming years, much more actively explore new approaches to the problem of preventing Europe from once again becoming the locus of a worldwide infection by the virus War.

The world has, in the 35 years of the *Bulletin's* existence, been extremely lucky in avoiding any further use of a nuclear weapon. But continuing this happy state will require more than sheer luck in the future, as more and more nations develop an independent capability for nuclear weapons production. The maintenance of a successful non-proliferation regime is essentially a political problem. We have already discussed some of the elements of this problem. We shall, of course, continue to keep the question of non-proliferation high on our agenda.

This brings us directly to what may be the most pressing and divisive issue of the next decade—nuclear power. The connections between the peaceful atom and nuclear proliferation (both horizontal and vertical) have by now been explored as extensively as any issue on the international agenda. And yet, the divisions within the community of concerned citizens are as deep and acute as ever. At issue, besides the political and technical problems of proliferation prevention, are questions of nuclear safety, waste disposal, economics and, in general, the rational utilization of the world's limited resources.

What brings the issue of nuclear power so acutely to the fore, of course, are the high demands in the devel-

oped world for oil resources which are growing rapidly scarcer, more expensive, and increasingly unreliable, due to Third World instabilities. Among the possible short-term substitutes, nuclear energy appears to many to be the most attractive for many reasons: it does not seem to involve the immediate pain of conservation measures; it is potentially far less environmentally polluting than fossil-fuel substitutes; and its proponents claim that it can be brought into play much sooner than either fusion or widely available renewable (solar) energy sources. On the other hand, there are the problems already mentioned, as well as many political and economic intangibles. The *Bulletin* can contribute to the resolution of these questions by continuing to present all sides of this terribly complex and vexing set of issues, in the hope that through increased knowledge about the understanding of the alternatives, we may be able to pass from the oil to the solar age without either blowing ourselves up, tearing ourselves apart, or rendering the Earth uninhabitable.

There is a certain tendency in such discussions, among citizens in the industrialized world, to overlook the special problems and points of view of the two-thirds of humankind that we usually term underdeveloped. The *Bulletin* obviously cannot speak for this great majority, but neither conscience nor justice permits us to ignore them. One of our major goals must therefore be to bridge the gap between scientists and scholars from the "North" and the "South." We must strive diligently to see scientific and technical problems of developing countries through the eyes of their scientists, to try to evaluate "solutions" in terms of their needs and aspirations.

In the end, we must return to a slogan that was popular in the days of the *Bulletin's* founding, but which, perhaps through over-use, has since gone out of style: One World or None. □