

THE END OF NUCLEAR WAR

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The nuclear age is over. It has been pushed into history by the apparently unrelated actions of a few desperate individuals.

The Bomb, and its rocket delivery systems were an awesome leap in power forty years ago. They heralded a massive centralization of power in the hands of the few governments with the resources to support their development and deployment. The subsequent danger of nuclear war has shadowed the lives of an entire generation and an entire planet.

Much has changed in the intervening years, and once again the balance of power has shifted. Such shifts in the balance of power are not new. The power structure of the European Middle Ages was overthrown by the invention of gunpowder. *Anyone* could now kill with impunity and secrecy, not just those wealthy enough to afford a horse and armor. The British Army was defeated by the guerrilla tactics of the American Revolutionaries who refused to play by the existing rules of war. The French bankrupted their economy and future in the 1930's creating an impenetrable "Maginot Line" of defenses. The French, superbly ready to fight the previous war again, were defeated by the lightning mobility of the Germans, alert to the different possibilities of a new era. Our current superpowers bankrupted *their* economies in recent decades attempting to create rules of war no others could afford to play. They in turn are being defeated by proliferation of new technologies and the insights of those discovering new "rules of the game"

Forty years of nuclear weapons have left us thinking of power in their terms. Having powerful missile systems, we tend to think of warfare largely in terms of their delivery of nuclear warheads. The Bomb itself, however, has become a paper tiger. It requires a visible target. Our belief in it is sustained only with great effort by those whose power depends upon that delusion. We are still urged to believe that the Bomb is the basic weapon of war, and that those who control the bombs are the players on the world's stage whose demands must be met and whose bills must be paid. They are not. The Bomb has been replaced by simpler, cheaper, and more foolproof alternatives to hold a nation hostage. The Nuclear Age, and the Age of Superpowers, have given way to the Age of Terrorism and what lies beyond.

The cataclysmic destructive power demonstrated by the Bomb has been miniaturized, simplified, and democratized. It is now available to any dedicated individual on the planet virtually without cost – death in a hundred rainbow colored forms. And as our societies have become more complex and our support systems wider ranging, our vulnerability to crippling disruption has skyrocketed. The homespun logicians of power now ask, "Why bother attacking sophisticated military forces, when the underlying civilian economies are far more vulnerable?"

The new roads to power are varied. A nation can be bluffed by an opponent into bankrupting itself in a "Star Wars" race. Or given adequate time, a nuclear weapon can be simply delivered to the vicinity of its intended targets – by United Parcel, in the trunk of a car, or by wheelbarrow! The massive scale of today's international trade and thousands of miles of unguarded borders make covert delivery easy. Secreted in advance, such weapons can be detonated by a variety of means, without advanced

warning, at low cost, and by any power – not just those with sophisticated rocketry systems.

There are even simpler alternatives for a nation too poor or too wise to get into nuclear arms or a Star Wars race. You can steal someone else's nuclear weapons, or do without. Today's technology has created vast opportunities and means to bring a complex industrial society to its knees without nuclear weapons.

Although our country has been highly active in covert activities in other nations and in training of terrorists for action elsewhere, we have been curiously blind to the potential of extended terrorist actions or reprisals within the U.S. itself. Our past isolation from theaters of war, belief in the invincibility of the threat of our military power, and disbelief in the possibility of domestic terrorism may all play a part in this blindness. And we may unconsciously realize our true vulnerability to such actions and the difficulty of defense against them. But the danger is real. A quick scenario can show the potential for devastating terrorist action within the U.S. It will make clear also that a vastly different policy of both "defense" and international relations is imperative today for our own survival and well-being.

Unlike many recent terrorist actions, this one began with an anonymous letter, delivered to the New York Times and the CBS Evening News on November 9th, outlining the injustice of U.S. policies and actions towards other nations and minority groups within our own country. It went on to warn that unless major changes were made within thirty days, a week of terror would be unleashed against the U.S. Unless heeded, *this* warning would be followed by all-out war. It would not be a war like previous wars. The letter, of course, was unsigned, and of course was ignored and forgotten until the morning of December 9.

At 10:05 am on the morning of December 9, a Winnebago careened across the grass of the Washington Mall up to the base of the Washington Monument. Moments later an explosion disintegrated the masonry at the base of the monument, toppling the entire structure into a shattered pile of stone in the green grass of the Mall. Fifteen minutes later, an explosive blast shattered the support girders of the newly refurbished Statue of Liberty in New York Harbor, leaving it a crumpled and twisted mass of steel and copper. No significant harm, but a symbolic beginning. A war of nerves had begun.

Security was tightened at airports and barricades erected around sensitive installations. The next morning, however, in the midst of important roll-call votes in both the House and the Senate, terrorists equipped with small plastic slingshots stood up in the congressional visitors galleries and lobbed dust-filled bags into both chambers of Congress. Some, aimed at air-conditioning supply grilles, spread dust throughout the room. Others, hitting the ceiling, burst and rained dust down into the chamber. The terrorists committed suicide before capture. Within a short time, the dust was identified as plutonium. The ultimate poor folk's nuclear weapon had been delivered, on target, and lethal doses inhaled by virtually all of our nation's leaders.

A similar attack was launched the same morning from the Visitor's Balcony of the New York Stock Exchange onto the trading floor, with equal success. By evening it was revealed in New York City that plutonium had also been injected into the mains of

the Westchester County water system and had been pouring for 24 hours from showers, dishwashers, clothes washers and drinking fountains of that executive community, contaminating virtually every home, and exposing most residents to lethal, though slow acting doses of radiation poisoning. The effectiveness of alternatives to ICBM's and Star Wars technology was quickly becoming apparent.

The early morning news on December 11 showed a nationwide alert in the wake of growing panic. National Guard units had been called up, but no one was quite sure where to deploy them. Further security measures had been taken where possible.

The morning news brought a tragic report from Salem, Oregon. Cylinders of toxic gas had been placed under the seats of school busses stored in the central district garage, timed with cheap digital alarm watches to go off just before the busses reached the schools in the morning. TV pictures showed the grizzly scenes of the small bodies being removed from busses capsized, stalled, or crashed around the school buildings. An entire generation would be missing from that community from those few minutes on. Nothing was sacred, and nowhere was safe in this new kind of world. In mid-afternoon, reports reached the media that in spite of security precautions, the downtown Chicago telephone exchange had been knocked out of operation. Simple bypass cables had been installed around electrical transformers serving the switching exchanges, allowing the 6000 volt main line voltage to surge through the system, destroying its computerized switch gear. In the evening, Pentagon leaks confirmed that a similar action had destroyed the entire Pentagon primary computer system. Although backup systems were widely known to exist, the potential for creative terrorism was clearly shown.

Things remained quiet the rest of Thursday, and until the New York morning rush hour on Friday. With tens of thousands of commuters watching, the main suspension cables of the Brooklyn, Verazanno Narrows, George Washington, and Manhattan Bridges suddenly slipped noiselessly from their anchorages, plunging the bridges into the waters below and leaving them as twisted masses of wreckage blocking major shipping lanes. Terrorists had slipped into the anchorages themselves, welded the access doors shut, and severed the individual cable strands with common ox-acetylene torches until the remaining strands overstressed and pulled apart.

Explosions a short while later in the train and auto tunnels under the Hudson and East Rivers, and at the supports for the Tappen Zee and Queensboro bridges left Manhattan Island virtually isolated. Three hours later all high-rise elevators in New York City were ordered shut down after three elevators at the World Trade Center plunged to the street below. Corrosive compounds placed on elevator support cables through the access hatches in the top of elevator cabs had caused the support cables to give way. It was now clear to anyone that potential for vast damage and disruption existed even without sophisticated explosives or military hardware.

The next day was Saturday. All across the country supermarkets and gas stations were jammed with people buying survival supplies. City streets were deserted as people looked with fear at every stranger and every vehicle they saw and sought the apparent safety of their homes. Utility maintenance halted as utility workers, mistaken for potential terrorists, were stoned. Businesses and services shut down as delivery and maintenance workers were locked out in fear of potential sabotage. Homes froze as broken furnaces went unfixed.

Late Saturday afternoon brought more devastating news to people barricaded in their homes. Regional bakeries serving a giant west coast supermarket chain had been contaminated with disease-causing organisms. Bulletins repeatedly warned people not to eat the bread they had just stockpiled in their homes. Another bulleting on the 6 p.m. news announced that syrup concentrates for canned carbonated beverages had apparently been tampered with several days earlier, and poisoned soda pop was now being found in homes and on grocery shelves throughout the country. Unverified rumors of more catastrophes filled the news as the evening went on and the panic level skyrocketed across the country.

At 10 p.m. West Coast time, the City of Los Angeles plunged into darkness as high voltage electrical supply lines from Hoover Dam failed. A single sharpshooter had shattered insulators on a pylon in the desert near Las Vegas, shutting down the entire regional electrical system. Rioting and looting spread through the city. Even emergency life support systems in hospitals shut down as the hospitals shifted to their emergency power supplies, only to discover their diesel generators had been sabotaged with sugar in their fuel tanks.

A bulletin on the 8 am Sunday news reported the overnight bombing of the Alaska Pipeline in eight places. The remaining oil in the pipeline was now frozen, putting it out of commission for an unknown period. Destruction of oil refineries and pipelines in the Middle East were also reported, though the responsibility for those actions was uncertain. Although no immediate domestic impacts were seen, it was clear that the U.S. could easily be forced to use up its own domestic reserves. The vulnerability of our supply systems was proven, and the U.S. forced to depend upon its own now visibly vanishing reserves. Orders to activate the Strategic Petroleum Reserve revealed that with the available pumps, it would take more than five years to pump-out that "90 days supply"

Later in the day reports came in from the Mediterranean, where one of our multi-billion dollar nuclear aircraft carriers had just been sunk in an attack from a single fishing boat with inexpensive radar-guided air-to-air missiles. The loss was less important than its significance. Almost all of our vast investments in conventional military hardware were literally "sitting ducks" to the new inexpensive technologies. With million-to-one kill ratios in dollars, not even the U.S. could afford to wage such a war. Our incredibly expensive "Maginot Line" of ships, planes and missiles was indeed well equipped, but like the French predecessor, unfortunately for the wrong war.

Afraid to eat or drink or leave their homes, and with our defenses in utter confusion, the seventh day dawned with almost every American tuned to their morning news with dread to discover what new calamity had occurred. Hour after hour the media were silent, and as the day wore on, the tension grew higher and higher.

Finally, just before 4:30 p.m. CST, reports from Minneapolis/St. Paul, Detroit, and Houston came on the news. Commandos, disguised as plant security forces, had apparently taken control of nuclear power plants located just upwind from each of the metropolitan areas, and announced that the plants would be blown up at 5:15 p.m. Freeways jammed, cars were abandoned, and people fled on foot as frenzied residents tried to reach their families or escape from the area. Later reports from Detroit and Houston revealed that initial reports from those cities were false, originating in a bootleg satellite transmission. The paralysis and panic in these cities, however, was as great as if it was true.

At 5:00 p.m., the Minnesota reactor was run up to full power, put out of synchronization with the regional electrical grid and put back on line. The disruptive power surge shut down the whole grid and caused major damage to remaining generating equipment. At 5:15 p.m., before military forces could launch an assault on the NSP reactor, the structure shook violently, split open, and clouds of toxic radioactive gasses began to blanket the area and spread downwind towards Wisconsin and Chicago.

At 8 p.m., bulletins were received from Boston, where devastation approaching that of a nuclear bomb had just occurred. A giant liquefied natural gas storage tank located near Logan Airport had apparently been blown up by a single sniper with a shoulder-launched rocket. As the frozen gas spread and ignited, the wall of fire and shock waves leveled every structure within miles, and the resultant fire-storm destroyed the city far beyond.

Just as the 10 p.m. news began, its satellite transmission was interrupted and replaced by a final message to a battered and wounded America.

"Dear Friends," it began, "The things that have occurred this week are grievous, but unavoidable because of your refusal to admit the existence of a fundamentally new balance of power in the world. The nuclear threat with which you have held the entire world hostage for the last forty years can no longer be tolerated, nor the social and economic injustice it has supported. You must now realize the absolute necessity to take positive action in response to these new conditions or suffer further action beside which this week will pale.

The new balance of power is twofold. First, the voice of the smallest must now be heard and valued equally to the biggest, for the individual's power for destruction has now joined that of the largest nations in being capable of destroying any society – indeed any life – on earth. Secondly, the needs of *all* must be equitably met, for *all* have the power to demand it, and none the power to refuse. Peace and equity can no longer be avoided, as their alternatives are clearly no longer affordable by anyone. It is now up to you."

Terrorism is not fun. Nuclear war is not fun. Nor are the conditions of life for millions at the bottom of our present power structures.

In essence, terrorism is the result of an existing power structure's refusal to admit the capability of a new power group to get their needs dealt with. The above scenario is imaginary, but close enough to reality for each of us to realize numerous equally vulnerable points of our support systems. A new stage has been reached in the historical evolution of society and distribution of power.

This new balance of power means the end of democracy *as we have known it*.

We may dissolve into futile military attempts to guard and preserve our rapidly eroding present patterns. Or we may be able to grow into a *new* stage of full, consensus democracy, responding to the needs of all, rather than just to a majority. We may learn to balance freedoms with responsibilities for the survival and well being of our planet, surroundings, and those with whom we share this beautiful world. Which path we take

depends upon how soon we recognize the nature of our situation and take action to make positive adjustments to this new world.

In our situation there is an echo of ancient times when a similar increase in power led to a quantum leap into new and unexpected potentials. Like now, the competitive power of many kinds of small living organizations had reached the point where they could wield vast destruction on others. Eventually, they reached the point where they held each other hostage and were forced into cooperation. Allowing and indeed helping others reach an equitable meeting of their needs not only permitted their own survival but also brought about a miraculous new thing. Out of that cooperation and joining of forces arose new kinds of super-organisms – such as human beings – co-inhabited by millions of different kinds of life. Evolving to meet more effectively their individual and collective needs, they generated a new kind of life and a new kind of consciousness – reaching one step closer to the stars.

The changes that need to be made today do not depend on governmental initiative, nor do they require a destructive wrenching of our way of life. The individual and local initiatives in transforming our energy systems into more affordable, more resilient, and more controllable systems stand us a good example. They have shown that waste reduction; conversion to sustainable resources; multiple use and reuse; sharing; and replacing force by wisdom bring economic as well as personal benefits. Such principles apply to all our food, transportation, health, water and sewage, defense, education, communications, and other systems as well as to energy. And they can be initiated by us personally and in our communities.

The Rocky Mountain Institute's Security Program has documented numerous ways of reducing dependence on others (and thus *our* needs to "secure" our relationship with them) in energy and strategic materials such as cobalt, chromium and titanium. And though we are not dependent upon government initiative to live beyond both the Nuclear Age and the Age of Terrorism, we need to continue pressure towards specific program changes, arms control, elimination of nuclear weapons, international security forces, elimination of support for corrupt governments – all with the example of local action, commitment, support and leadership as a moving force.

One of the most curious and wonderful properties of an "Information Age" is that its benefits can be shared at incredibly low cost once developed. Everyone can benefit from what any of us have learned, and the strengths developed in various places made available to all. We need not have less or be less for others to have more.

Our first and most important step toward real security is to realize that great power can no longer be controlled or restricted to a few. Secondly, we need to realize that *the real security of others is our only true security*, and that such security requires very different attitudes and actions than our present ones. And our third and last step towards real security is to take action - to improve not just our own security but that of others whose own security is threatened. More resilient systems, less dependence on others, better means of resolving conflicts, and sharing available resources for improving the lives of all are important.

With these steps we leave both the Nuclear Age and the Age of Terrorism behind, and move into a new and unprecedented era in the history of our planet. □