The deterrence theory is not only obsolete, it has been abandoned by the United States. Deterrence is the threat of severe retaliation against the cities and manufacturing areas of a country that initiates a nuclear attack. Missiles do not have to be extremely accurate nor do the warheads require much explosive power to accomplish that mission. This balance of terror has been credited with preventing first-use of nuclear weapons for three decades and it reached its point of highest credibility when the first strategic arms limitation agreement (SALT I) was signed in 1972. Since then it has deteriorated rapidly.

I have witnessed the decline of deterrence from inside the military-industrial complex of the United States. While a design engineer on submarine-launched ballistic missiles I could see the shift in US strategic policy reflected in the types of weapons being developed. During the panic of the so-called missile gap of the late 1950s, which I'll discuss more in context later, I was working 60 hours a week to design the first Polaris missile. Early in this decade when the Trident program was just beginning, I could recognise the first signs of a strategic shift toward an offensive position. That shift eventually led to my resignation from the arms industry. Since observing these phenomena I have become very critical of military policies. So, with that brief introduction, let me proceed to illustrate how sophistication and proliferation of weapons has hastened the demise of the nuclear deterrent philosophy.

The Anti-Ballistic Missile (ABM) Treaty of SALT I confines interceptor missiles to the defence of the capital city and one
intercontinental missile emplacement, and limits the overall number of ABMs to a mere 200. Agreement on this number, which is a composite of what each country had already deployed, was possible because a credible anti-missile defence is economically out of the question. Leaving most cities undefended was tacit indication that all out nuclear war was no longer considered a viable option by either side. It guaranteed that retaliation to an initial attack was possible with a missile force even smaller than what was already deployed. The ABM Treaty, along with the Interim Agreement that restricted offensive weapons, set the stage for meaningful reduction of nuclear arms. But that was not to be. To better understand the complex conditions that followed let us briefly review the history of the arms race.

Nuclear weapons competition has been a series of actions and reactions with the Soviet Union, for the most part, always reacting to a US numerical or technological lead. Russia became a nuclear power four years after the United States. As that happened, the "bomber gap" crisis was fabricated to justify development of the United States' B-52 fleet. We now know that such a gap never existed. As a matter of fact, when former US President Eisenhower proposed that both countries reveal their nuclear inventories and defence spending the Soviets were so nuclear inferior and economically weak that they maintained secrecy to hide their vulnerability.

By the mid-1950s the US enjoyed a 5000 to 1000 lead in nuclear weapons over the Soviets, the first B-52s were combat-ready, and U-2 flights had started over Russia. The Soviets reacted in 1957 by announcing their first intercontinental ballistic missile flight and by launching Sputnik. The truth of the matter was that they were so hopelessly outclassed in the bomber age that they were attempting to transcend it by jumping into the era of missiles.

Earlier in the same decade the US Gaither Committee reported that by 1959 the Soviets could launch 100 intercontinental missiles against the United States. U-2 spy-plane flights were then authorised to confirm or dispell that threat. It was later proved false. The Soviets were actually concentrating on shorter range missiles targeted against Western Europe. Their inability to cover US targets was demonstrated in 1962 when Khrushchev attempted to move intermediate range missiles into Cuba.

The intercontinental ballistic missile count in 1961 was 63 for the US and 50 for the Soviets - hardly a Russian advantage. Nevertheless, an illusionary "missile gap" was used as an excuse to speed up deployment of Polaris submarines and to accelerate the build up of intercontinental missiles. Five years later the Soviet Union began to rapidly increase its inventory of strategic missiles and eventually surpassed the US in numbers. That five-year time lag is typical. Russia's first Y-class submarine was deployed five years after Polaris. The US tested multiple individually-targeted re-entry vehicles (MIRVs) in 1968 and it was not until 1973 that the Soviets did likewise. MIRVs were deployed by the US in 1970 but the USSR just started making theirs operational this year.

So history indicates that it has been the United States which has maintained the lead in the arms race. Strategic policy changes, initiated amid secrecy and deception without the benefit of diverse public opinions, have been repeatedly used to justify continued weapons development. Such was the case in the 1960s when the decision was made to freeze US intercontinental missile numbers at 1054 and the Polaris submarines at 41. Efforts thenceforth were to make qualitative improvements rather than increase numbers. Work began on the multiple individually-targeted re-entry vehicles. By 1970 the Minuteman III with three MIRVs for a payload began replacing the older silo-based missiles. In that same year the new MIRVed Poseidon was put on station in converted Polaris submarines. This was essentially the picture when SALT I was signed.

Proliferation of nuclear weapons is the horizontal aspect of the arms race that is undermining the groundwork laid by SALT I. The renewed testing activity among tertiary nuclear powers and potential powers makes the possibility of deterrence less manageable. Allow me to present a quick look at the global picture:

1. After a nine-year moratorium, England resumed testing last year at the US Nevada Test Site. The British have four ballistic missile submarines on patrol.
2. Last September France set off its 43rd blast in the Pacific since 1964. This year they
are conducting underground tests at their new facility on the Faungataufa Atoll approximately 800 miles southeast of Tahiti. France has three missile-firing submarines with two more on the way.

3. China, also, started testing in 1964. Former Chairman of the US Joint Chiefs of Staff, Admiral Thomas Moorer, has predicted that China will eventually produce a 6000-mile missile with a 3-megaton warhead. US Defence Secretary Schlesinger says they will achieve that capability by the end of the decade.

4. On May 18, 1974 India detonated its first atomic device. Although Prime Minister Indira Gandhi stressed that India’s use of atomic power will be peaceful, the militant Jana Sangh party claimed that global conditions make it imperative for India to develop its own nuclear arsenal. It should be noted that American and Soviet scientists have failed for over two decades to find peaceful uses for nuclear explosives. And only a month after the blast the Indian Atomic Energy Commission announced plans to detonate a hydrogen bomb as a successor to the atomic experiment.

For ten years the number of nuclear powers had remained fixed at five but when India set off its bomb it caused a new global mood to surface. Only Japan, Sweden and Canada voiced sharp criticism. Russia and China did not protest and the US merely admonished India to act responsibly in the export of nuclear technology.

But the effect on non-nuclear countries was more significant. Pakistan is reassessing its potential as a nuclear power. India’s claim to peaceful use of nuclear explosives has revived credibility in that argument among such countries as Brazil and Argentina. South Africa also has the capability of producing an atomic bomb along with controlling
one-quarter the non-communist world supply of uranium. Spain is another interested party. These are but a few of the aspiring nuclear powers and when more of them acquire the technology to miniaturise warheads, build micro-electronics and manufacture small propulsion systems they will have the capability of firing long-range nuclear missiles from an unlimited selection of launch platforms. It would be unlikely that a country which has been attacked would know whom to retaliate against.

*India obtained the enriched uranium to make its bomb from nuclear plant fuel provided by Canada. Access to nuclear materials by this means is growing. West Germany has negotiated a massive deal with Brazil to sell them not only nuclear reactors but also the enriching and processing plants for uranium. The Soviets have a secret deal with Libya that involves a complete atomic centre in that country. France is reportedly negotiating sales of nuclear power plants along with complete fuel cycle technology to Argentina, South Korea, Pakistan and Taiwan. And if the US furnishes Egypt and Israel with 600-megawatt reactors, as promised by former President Nixon, other ulterior events will undoubtedly be triggered. Topping that off, if President Ford has his way in relaxing government controls it will allow US private business to produce enriched uranium.*

Neither can the growing threat of nuclear terrorists be overlooked. Techniques for constructing atomic bombs are becoming generally known. The Stockholm Peace Research Institute's annual report states that by 1980 the world will have accumulated 770,000 pounds of plutonium - a by-product of nuclear reactors and the material used in the Nagasaki bomb. “Even if safeguards are 99.9 per cent effective,” the report continues, “enough plutonium could be diverted without detection to produce nuclear weapons at the rate of one per week.” Acquiring fissionable materials is becoming easier. When desperate people learn how to construct a nuclear device, that device will certainly be used.

To push the proliferation point a bit further, we should look closer at the lack of nuclear weapons safeguards. Although it had estimated that a $90 million construction program was needed to adequately guard nuclear weapons, the US Department of Defence only requested $4.9 million for that purpose this fiscal year. Meanwhile, testimony before the US Congress reveals that 3,647 people having access to nuclear weapons have been removed from their jobs each year because of discipline problems, mental illness, alcoholism and drug abuse. Of those discharged in 1972 and 1973, twenty per cent were for drug abuse. Blackmarketing nuclear materials could be a tempting way for drug addicts to support their habit.

The Nonproliferation Treaty is struggling for credibility. It barely survived its scheduled review last May. It is failing because the two top nuclear powers have not lived up to the “good faith” Article VI in which they promised to curtail their arms race. The United States, for instance, now has 8,500 nuclear weapons which are classed as strategic and is increasing that figure at the rate of three a day. Under the conditions of the Vladivostock Agreement the number of strategic warheads could rise as high as 21,000. But the US also has, right now, 22,000 nuclear weapons in its tactical arsenal. These are widely disbursed with many in the hands of battlefield commanders. According to Dr. Frank Barnaby, director of the Stockholm Peace Research Institute, continual stockpiling of nuclear weapons “could create the imminent destruction of the world.”

What I am trying to point out is that proliferation of nuclear weapons negates any argument that the deterrent theory is still workable. That being true, we are at a most critical point in history - a point where we must choose between really stopping the arms race dead in its tracks and looking for peaceful solutions to international tensions or, the other alternative, to carry this myopic struggle for weapons superiority to its ultimate conclusion: a lethal contest among many powers in an atmosphere of first-strike threats and nuclear terrorists. It is apparent to me that my government has chosen the latter course. To justify their massive arms build-up, and in fact their very existence, the Pentagon has come up with the “response in kind” selection of options that will give the flexibility for a tit for tat reaction to any nuclear attack. Of course with the increased plausibility of limited nuclear encounters we must recognise the probability that actual use of thermonuclear weapons will be part of US policy. And that direction required to achieve that flexibility and selectivity is hard targeting - a back door approach to a counterforce
capability. Although there were media leaks and public hints that a shift from the long-prevailing deterrent posture was taking place, it was not until last year that the American people were officially informed that their leaders had carried them into the dangerous potential first-strike position that had been avoided for decades. Since that revelation the threats and insinuations by high government officials that nuclear weapons will be used have grown bolder and more frequent.

Counterforce means that a country’s attack missiles are aimed at an opponent’s assault weapons. This type of targeting implies an offensive first-strike because retaliation against empty silos does not make sense. Since counterforce targets are protected by thick concrete to harden them against nuclear explosions, a country contemplating counterforce options would need very accurate and powerful weapons. If all the opponent’s missiles were not demolished during that first strike they would be certain to retaliate with devastating results.

Qualitative improvement of weapons is the key to the new counterforce policy. Sophistication is in three main areas:

1. Two generations of Trident missiles and a new fleet of submarines are being developed to update the sea-based leg of the strategic triad. The justification for this weapon is survivability. Longer range Trident missiles will allow the submarines to patrol over ten times the ocean area now possible for Poseidon boats. The latest design nuclear submarine propulsion system will be quieter (to minimise detection by sonar) and more powerful (to allow escape in case detection should take place).

2. The highly sophisticated and expensive B-1 bombers are the Air Force’s dream of modernising the Strategic Air Command. Even in the face of convincing arguments that a penetrating bomber is no longer feasible in view of Russia’s elaborate air defence system, the Air Force tenaciously adheres to the need for such a weapon. The truth is that without a huge bomber force it would not be possible to justify the Air Force’s huge allotment of manpower and officer billets.

3. Because the Department of Defence claims that land-based missiles in stationary silos will be vulnerable in the 1980s, they are looking into mobile missile technology.

Although the United States submitted a unilateral statement that deployment of mobile missiles would be considered inconsistent with the arms control intentions of SALT I, it is now developing such a weapon.

These are the main force modernisation programs but there are numerous complementary and supportive projects that enhance selective surgical strikes. The following are the more prominent:

a) Manoeuvring re-entry bodies that will hone-in on targets during the final phase of their descent.

b) Instant re-targeting of missiles through computer technology.

c) Improved missile guidance systems that can update navigation data after being launched.

d) Miniaturisation of warheads and components which allows increasing the yield without increasing size and weight.

e) Cruise missiles which resemble a small pilotless aircraft after wings and tail unfold. They fly undetected at low altitudes with target-sensing precision and can be launched from a variety of aircraft, land vehicles, surface ships and submarine torpedo tubes.

Sophistication of weapons is also complicating current strategic arms limitation talks. There is disagreement as to whether cruise missiles should be counted against the Vladivostock ceiling of 2400 nuclear carriers. But even aside from that complication, a condition of any treaty is verification that it is not being violated and that may be an obstacle that cannot be cleared. The quest for survivability (i.e. preventing detection) is completely at odds with the ability to determine that treaty quotas are complied with. It is also worth noting that the June 1975 meeting between US President Ford and Soviet leader Brezhnev was postponed. That meeting had been the target for signing a new ten-year strategic arms treaty. The prospects of disarmament negotiations do not look promising.

To soothe the fears of those who recognise the counterforce trend for what it is, US Defence Secretary Schlesinger alleges that neither the United States nor Russia has a disarming first-strike capability, nor will they have in the foreseeable future. This, he says, is because of the survivability of
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missile-launching submarines. But the emphasis placed on anti-submarine warfare by the US (over $3 billion spent annually in that area) makes one wonder if the plan is to be able to destroy the entire Soviet fleet. This question becomes more relevant in light of Secretary Schlesinger's recent statement that "It is necessary to go for the heart of an opponent's power, destroy his military forces rather than simply being involved endlessly in ancillary military operations.

The US Air Force is also preparing for the limited exchange of nuclear weapons which Secretary Schlesinger and other planners feel is a good possibility. The Strategic Air Command has given its pilots top-secret mission folders on how to fight a limited nuclear war. American forces are conducting exercises all over the world in preparation for any possible contingency. Although Pentagon officials say they never comment on operational plans, one ranking officer admitted that the possibilities for a one-shot-apiece nuclear exchange was being integrated into the master blueprint for nuclear war.

The unfolding US military activity is justified by another pre-fabricated gap - the "counterforce gap". This is illogical. I have pointed out how Russia is still trying to catch up to a US lead. The deployment of MIRVs by the Soviets this year (something the US did five years ago) is depicted by the Pentagon as seeking a counterforce position. And the USSR will certainly emulate current US weapons sophistication by the end of the decade. Ironically, it is as a hedge against that predictable Soviet reaction that they offered excuse for many weapons improvements. While voicing hopes for some abstract condition that could make disarmament possible, the United States proceeds to rationalise nuclear competition while maintaining an unresponsive attitude toward meaningful arms reduction proposals. Even when the USSR introduced a United Nations resolution to reduce military spending the US did not support it. What is the reason behind this dichotomy?

It seems obvious to me that the real obstacle to stopping nuclear production is business profits. Weapons manufacturers get a juicy slice of the huge Pentagon budget. It is not possible for large corporations, which measure every decision exclusively by the dollar standard, to support disarmament with anything more than rhetoric. But even while they allude to the Soviet threat to excuse their behavior, that fear of communism doesn't seem to be present when the Soviet Union offers a market for US merchandise. This fact was brought sharply into focus by the $1.8 billion package deal that Lockheed Aircraft Corporation (the second highest ranking defence contractor) offered the Soviets. It included the sale of thirty-two L-1011 jetliners to Aeroflot, the Russian airline, with an option to purchase thirty more on a follow-on order. Neither is that fear evident in a similar venture where Boeing Airplane Company is trying to interest the Soviets in their 747 jumbo jets for international routes. Worry about Soviet sincerity diminishes appreciably if one can believe Alexander Yankovich, a Bank of America vice-president. Pointing out that there is no risk in dealing with the Soviets because they have always lived up to their commercial arrangements, he advocates increased trade with Russia.

United States legislators also seem to cast their vote where business interests and the economy dictate. The most successful lobbying technique in Washington is to convince congress people that a given defence program will provide jobs in his/her district. This promise is especially effective with the unemployment figure crowding the ten per cent mark.

I see only one small hope of this planet extricating itself from the self-cremation it is preparing. Disarmament will come only when the masses wake up - only when the common people assume responsibility for their share in the global community and accept the personal risk to practise it. A special function in the awakening process rests with scientists, engineers, public officials and all others who have access to the secrets that should be brought out for discussion. Real peace will come only when many citizens of this world become enlightened enough to adopt a new way of combating the destructive powers that confront each of us daily - only when they adopt the non-violent lifestyle that speaks a loud and emphatic NO to destruction and death, NO to military bureaucracy, NO to corporate profiteering, NO to personal greed and status, NO to secrecy, NO to ignorance. It is a slim chance but it is a chance. A few are leading the way. But only when more follow will we be able to say with conviction: "No more Hiroshimas, no more Nagasakis."