

# F.A.S. PUBLIC INTEREST REPORT

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## MEDICAL SCIENTISTS SHOULD MONITOR THE BIOLOGICAL WARFARE CONVENTION

We call upon our fellow scientists in the medical community of the USSR to provide the world with more information on the Sverdlovsk anthrax epidemic of Spring, 1979. Was it caused by air-borne spores induced by an accident at a biological warfare laboratory or was it caused by the eating of naturally infected meat? To the best of our knowledge, no Soviet professional journals have yet carried articles on this subject. And the matter is taking on ever-greater importance for the future of arms control.

The link to arms control arises through the *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and on Their Destruction*, which 113 nations have signed, including the U.S.A. and the Soviet Union.

These nations have agreed "never in any circumstances to develop, produce, stockpile or otherwise acquire or retain:

- (1) Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes."

If the epidemic stemmed from retaining quantities of anthrax, in excess of those permitted above, the Soviet Union would be in violation of this arms control treaty.

The circumstantial evidence for such a violation arises from the fact that the epidemic in question took place in

a part of the surroundings of Sverdlovsk (Kashino) in which there is a long-suspected laboratory for biological warfare. Moreover, anthrax is an obvious candidate for biological warfare activities. It was one of the half dozen biological agents thought most promising in the now terminated U.S. biological warfare program. Not contagious, and thus running no risks of spreading to one's own troops, its spore form is highly stable against sunlight, changes in temperature, or shocks, and hence lends itself to a long shelf-life. It cannot be filtered out by the nose. And a massive dose is very lethal. (It is not, however, an especially desirable weapon, both because the spores persist for years after use and because the persons attacked may not die immediately. This suggests that Soviet motivation for violating the treaty could not, or should not, have been very high.)

One key fact needed to resolve this matter, one way or another, is information on whether or not the patients died of inhalation anthrax or, on the other hand, of the gastro-intestinal form of anthrax. The Soviet authorities, after first denying the existence of any such epidemic, said on March 19 that the epidemic had been caused by eating anthrax-infected meat. While anthrax induced by inhalation is not easy to distinguish from other pulmonary diseases, it is quite easy to distinguish it from the gastro-intestinal form of anthrax, which is the Soviet explanation. Thus, anthrax having been stip-

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## ARMS CONTROL & DEALING WITH THE RUSSIANS

Many an honest man pursues the path of integrity with an intensity borne of that pessimistic conviction that, whatever he may say, the truth will come out. So it should also be with nations. But the Soviet authorities still cling to the traditional Russian view that reports of disasters can be permanently suppressed. In fact, their capacity to suppress such information is declining with time, and the sooner they recognize this the better.

On February 19, Tass denied that anything had happened in Sverdlovsk, calling a related report a "malicious invention which has absolutely nothing to do with actual fact". A month later, on March 19, Soviet authorities conceded a natural epidemic but such an epidemic was never reported to the World Health Organization. Obviously, the West must press for more information, and the Soviet authorities should supply it.

The most peculiar aspect of the evidence provided is the fact that the epidemic is said to have raged for a month,

which is inconsistent with the victims having been exposed to a single aerosol cloud produced by an initial explosion. In this case they would normally have died within, at most, days of one another. It is quite possible that there is some explanation of events that does not encompass a biological warfare violation. But from the attitudes being expressed in Washington—from persons having viewed the admittedly circumstantial evidence—the Soviet Government is going to have to do more than issue denials or, as FAS proposes, the world scientific community will settle the matter itself.

Both nations should be urged to make their treaties the law of the land so that their citizens can invoke the pressure of the domestic law in any whistle-blowing they may initiate. The U.S. Executive Branch is preparing a domestic law that would go beyond the executive order now binding on government officials; what the Soviet Union has done along these lines is not known. □

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ulated as the source of the epidemic, the key question is, what kind was it?

Indeed, by arguing that the epidemic was caused by eating infected meat, the Soviet authorities seem to have precluded subsequent argument that the anthrax arose from laboratory stocks retained for purposes permitted under the Convention. This has simplified the argument of those who believe the Soviets have violated the treaty. They need not calculate now precisely how much might have been released in an accident and how much might have been justified for public health purposes. The Soviet Union inoculates 2,000,000 people a year against anthrax and does have justification for related stocks—not to speak of permitted quantities for experimentation in wartime defense against anthrax. (Conceivably, however, the earlier official explanation of gastro-intestinal anthrax might subsequently be disowned and these defenses made. Still another theory speculates that, somewhere in the chain of command, Soviet authorities refused to comply with the high-level directive to discontinue BCW production.)

The facts alleged are these. Civilians from a ceramics factory and other residents downwind of the Sverdlovsk military facility are said to have reported sick within a few days. It is alleged that airborne spores may have been sucked into the factory through air conditioning units.

Sources talk of "emigrants and eyewitnesses" contradicting the report of contaminated beef, and of no animal quarantine having been ordered, as would have been expected if a herd were infected. According to newspaper reports, medical personnel and laboratory technicians had been brought in from Moscow to monitor the outbreak. Enormous amounts of antibiotics were distributed, and an anthrax vaccine given to the local populations. Notwithstanding these reports, at least one credible investigator of this matter with inside information considers it all quite speculative.

Obviously, this incident requires investigation. Under Article V of the treaty, parties to it "undertake to consult one another and to cooperate in solving any problems which may arise in relation to [it]". The United States asked for such consultation on March 17. On March 18, however, it went public with its charges and the Soviet response was to release the indignant response of March 19.

The arms control literature contains a notion called "public inspection". Under that theory and hope, the populations of treaty signatories would hold their own countries to the agreed provisions by blowing the whistle when these provisions were violated. Is this possible only in democratic countries with a free press like our own, or is it also possible in totalitarian countries with completely controlled presses like the Soviet Union?

Because the world scientific-medical fraternity is a close one which discusses both problems of public

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## ANDREI SAKHAROV RELEASE

FAS officials continue to be preoccupied with the problem of securing the release of Andrei Sakharov and welcome any suggestions, testimonials, or related letters that might be of assistance.

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health, and scientific means of destruction, we believe that biological warfare accidents of this kind can no longer be kept secret.

When the biological warfare convention was being ratified, ACDA Director Fred Ikle admitted to the Senate that it was of "limited verifiability". The treaty was recommended notwithstanding this exception to U.S. policy because the U.S. had already, unilaterally, adopted its provisions. President Nixon had decided, outside the scope of the treaty, to forswear biological warfare and to destroy related stocks. In fact, however, this incident and the information coming out of Russia may show that even treaties like this have a substantial amount of verifiability. Violators do risk becoming caught. But was there a violation?

At the moment, it does not appear certain that the Soviet Union is going to cooperate in talks or site visits to Sverdlovsk. The Senate and House of Representatives have approved a resolution (of Senator Proxmire's) saying that, if the USSR does not, the United States should avail itself of its rights under the BW convention to lodge a formal complaint with the Security Council of the United Nations.

If this matter is not satisfactorily resolved, there is a danger that our nation, and others of the 113 signatories, might regress to working again on biological warfare. And there is the related risk of eventual use of biological weapons either by the Soviet Union or powers motivated to match their efforts. Moreover, if the Soviet Union is thinking in terms of biological weapons, notwithstanding the Convention, there is more that NATO forces should be doing in preparation for that eventuality.

We have not the slightest hesitation in stating that American scientists (and other citizens) should monitor the compliance of the United States in fulfilling *its* treaty obligations. They should feel not only free but obliged publicly to attest to violations of which they become aware. Accordingly, FAS has no hesitation in calling upon Soviet scientists to do the same with regard to Soviet undertakings. In this case, especially, all of us share the world interest in preventing the stockpiling and use of biological weapons. And we share the general interest in establishing that arms control violations can be confirmed—a fact that is critical to any future arms control.

Under these circumstances, we call upon Soviet scientists with information bearing on this incident to express it, either in submissions to scholarly journals (in circumstances where publication might be anticipated) or in conversations and communications with foreign and domestic colleagues. We recognize the hazards which such communications might pose in cases where the information would incriminate the Soviet Union. But one way or another, the world must have a more definite answer to the question of what happened at Sverdlovsk.

—Reviewed and Approved by The FAS Council

## U.S. RATIFIED CONVENTION WITH EYES OPEN

**FRED IKLE:** "There is one aspect of the convention to which I would like to give particular attention: the question of verification. Verification of compliance with this convention in countries with relatively closed societies is difficult, particularly for the prohibition of the development of these weapons.

Nevertheless, in our judgment it is in the net interest of the United States to enter into this convention, basically for three reasons:

First, the military utility of these weapons is dubious at best; the effects are unpredictable and potentially uncontrollable, and there exists no military experience concerning them. Hence, the prohibitions of this convention do not deny us a militarily viable option and verifiability is therefore less important.

Second, biological weapons are particularly repugnant from a moral point of view.

Third, widespread adherence to the Convention can help discourage some misguided competition in biological weapons.

It is to be feared that, without such a prohibition, new developments in the biological sciences might give rise to concern because they could be abused for weapons purposes. Such anxieties could foster secretive military competition in a field of science that would otherwise remain open to international cooperation and be used for the benefit of mankind.

It is important, however, that the limited verifiability of this Convention should not be misconstrued as a precedent for other arms limitation agreements where these special conditions would not obtain."

### Effect Of Failure to Ratify Convention

Mr. Chairman, the administration believes that the Biological Weapons Convention represents a useful arms control measure. We hope the United States will not prevent the treaty from entering into force through its failure to ratify. *By failing to ratify, we would deny ourselves the benefit of having other countries legally committed not to produce weapons that we have already given up.* \* And we would deny 109 other countries the benefit of a treaty that they have already signed. (Italics added)

—December 10, 1974 hearings before Senate Foreign Relations Committee

\*At the time of ratification, the United States had already destroyed its entire stockpile of biological toxin agents and weapons and converted its biological warfare facilities to peaceful uses. This was pursuant to an order of President Nixon on November 25, 1969. □

## RELEVANT ARTICLES OF THE BIOLOGICAL WEAPONS CONVENTION

### ARTICLE I

Each State Party to this Convention undertakes never in any circumstances to develop, produce, stockpile or otherwise acquire or retain:

(1) Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;

(2) Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

### ARTICLE II

Each State Party to this Convention undertakes to destroy, or to divert to peaceful purposes, as soon as possible but not later than nine months after the entry into force of the Convention, all agents, toxins, weapons, equipment and means of delivery specified in Article I of the Convention, which are in its possession or under its jurisdiction or control. In implementing the provisions of this article all necessary safety precautions shall be observed to protect populations and the environment.

### ARTICLE IV

Each State Party to this Convention shall, in accordance with its constitutional processes, take any necessary measures to prohibit and prevent the development, production, stockpiling, acquisition or retention of the agents, toxins, weapons, equipment and means of delivery specified in Article I of the Convention, within the territory of such State, under its jurisdiction or under its control anywhere.

### ARTICLE V

The States Parties to this Convention undertake to consult one another and to cooperate in solving any problems which may arise in relation to the objective of, or in the application of the provisions of, the Convention. Consultation and cooperation pursuant to this article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter.

### ARTICLE VI

(1) Any State party to this Convention which finds that any other State Party is acting in breach of obligations deriving from the provisions of the Convention may lodge a complaint with the Security Council of the United Nations. Such a complaint should include all possible evidence confirming its validity, as well as a request for its consideration by the Security Council.

(2) Each State Party to this Convention undertakes to cooperate in carrying out any investigation which the Security Council may initiate, in accordance with the provisions of the Charter of the United Nations, on the basis of the complaint received by the Council. The Security Council shall inform the States Parties to the Convention of the results of the investigation. □

## IS GENETIC ENGINEERING BEING APPLIED TO BIOLOGICAL WARFARE?

A third perspective was supplied by a Soviet scientist who recently defected. Because he has family members in the U.S.S.R., he asked not to be identified. "From the Communist Party's standpoint," he said, "Soviet science still exists for only two reasons: military advantage and international prestige. Eighty percent of the research in the Soviet Union is for military-related purposes. Take my discipline, which is molecular biology. This is a field closely related to genetic engineering, a science that was crushed in the U.S.S.R. during the Stalin and Khrushchev periods. Science then was ruled by [Trofim D.] Lysenko, who didn't believe in genetics, and, as a result, Soviet agriculture went from bad to worse.

"But now the party recognizes that genetics has a very important military offshoot—germ warfare. One of the top-secret military facilities just outside Moscow sent me a student who was to complete his work for a doctoral degree by working on my staff. This man frankly told me the purpose of his higher education—it was to serve the biological warfare facility from which he was on leave."

—*New York Times*, May 20, 1980 ("Soviet Science Assessed As Flawed but Powerful")

## SYMPTOMS OF ANTHRAX VARY

**Inhalation Anthrax.** Inhalation anthrax begins after an incubation period of 1 to 5 days as a nonspecific illness, with malaise, fatigue, myalgia, mild fever, nonproductive cough, and infrequently, a sensation of precordial oppression. Rhonchi may be heard. The illness is frequently diagnosed as a respiratory infection. Within 2 to 4 days, symptoms may improve, only to be followed by the sudden development of severe respiratory distress, with dyspnea, cyanosis, stridor, and profuse diaphoresis. Subcutaneous edema of the chest and neck may be present. The pulse, respiratory rate, and temperature are elevated. There are moist, crepitant rales and possibly signs of a pleural effusion. Roentgenographic examination may disclose widening of the mediastinum. The leukocyte count may be moderately elevated. Death usually follows within 24 hours after onset of the acute phase; it is sometimes preceded by shock. Meningitis may be a complication.

**Gastrointestinal Anthrax.** Symptoms of gastrointestinal anthrax develop 2 to 5 days after the ingestion of contaminated meat; they consist of nausea, vomiting, anorexia, and fever. Progression of the disease is evidenced by abdominal pain, hematemesis, and in some cases, bloody diarrhea. The clinical course is similar to that seen in acute surgical condition of the abdomen. The leukocyte count may be moderately elevated, with abnormal numbers of immature forms. The disease may progress to generalized toxemia, shock, cyanosis, and death. □

—Philip S. Brachman, M.D., "Anthrax", *Practice of Medicine*, Vol. III, Chapter 30

## MUSINGS ON THE STATE OF THE ARMS RACE: Hiroshima + 35 Years

For the truly intractable problem, perhaps the only thing worth buying is time. Such problems often appear insoluble precisely because they are indeed insoluble *within the given context*. Yet, over time, the presuppositions of that context shift. New possibilities arise on the wings of evolving trends punctuated by epoch-shifting events.

Thirty-five years ago, it seems fair to say, the arms race was far more intractable than even it is today. The degree of communication between the two camps was 1,000 times less than today and the suspicion comparably greater. Experience with nuclear weapons arms competition was non-existent. The proposed solutions of that period were correspondingly naive such as the post-war hope that the Soviet Union would agree to an internationalization of nuclear weapons that really constituted a Western monopoly.

Accordingly, fears were greater. Even Bertrand Russell flirted with the notion that preventive war by the West might be the safest route for mankind. C. P. Snow observed that nuclear war was a virtual certainty within ten years.

Half way from there to the present, one finds oneself in the Kennedy Administration. This was an era not of fears of imminent certain nuclear war but, as Kennedy put it, of a "long twilight struggle".

Yet its Berlin crisis and Cuban crisis were as grim confrontations as anything on the horizon today, with less possibility of superpower give and take, or of communication, and more mind-set readiness to resort to force and nuclear weapons.

To give one personal example, the evening President Kennedy gave his major speech on the Cuban missile crisis, he warned that he would respond to nuclear weapons used anywhere against our Hemisphere with a full-scale nuclear salvo against the Soviet Union. I was so alarmed that I drove 100 miles to a convention my wife was attending to be sure that we spent those dangerous times together. (Sensitized to escalation scenarios by working in a war-peace research institute, I had already spent a day and a night working on ways and means by which the U.S. could offer NATO a wing of Minuteman missiles in Montana in return for a face-saving way of withdrawing U.S. IRBM missiles from Turkey—a side issue in the confrontation.) Leo Szilard flew to Switzerland. Fears of nuclear war were an order of magnitude higher than they were during the Afghanistan invasion.

If 1945-62 was stage one in the arms race, and 1962-1980 was stage two, then stage three might be seen as the rest of the century. Are things getting better or worse and in what proportions? What can we expect? On the whole, the perceived risks of war have declined as the weapons armories have increased.

Consider the following items:

- As weapon levels have grown, fears of Soviet *surprise attack* have steadily declined, with the temporary exception of the 1957-1961 period of the missile gap.
- Notwithstanding periodic alarm about the more sophisticated danger of *crisis attacks* arising from "in-

stability", the "instabilities" of concern today are generally even less serious, objectively speaking. For example, the early 1960s fear that our bombers (our only deterrent force) might be destroyed by Soviet missiles was obviously more serious than the circa-1980 fear that our land-based missiles might be destroyed (while Poseidon submarines go unscathed).

- Soviet intentions are better understood as more cautious and less apocalyptic. Soviet internal problems, poverty, fear of war, and other domestic constraints are also better appreciated. Tens of thousands of persons now visit the Soviet Union annually where, before 1956, no tourists at all were permitted.
- Non-use of nuclear weapons by all sides, for 35 years, has established a precedent, backed by an understanding of nuclear dangers, that represents a hard-won barrier against subsequent first-use.
- A generation of leaders on both sides appear to have assimilated the dangers of nuclear war and the importance of not being drawn into confrontations that have only the exit of nuclear use. It is the rare exception when a national political leader, e.g. George Bush, says anything different and, predictably, his remarks caused great stir. This was not always so. In the first period, it was common to talk loosely about nuclear use.

Notwithstanding these trends, there is an entirely accurate and widespread impression that, at this moment, the risks of nuclear war are on the rise. This impression is not held only by those too young to remember the earlier crises. Nor is it a fear of deliberate actions, much less deliberate surprise attacks. It represents a fear that world events are basically out of control as in the pre-World War I period.

- That superpower competitive interests encompass so many sensitive points (Iran, the West Bank, Afghanistan, China, Yugoslavia, etc.) that something will give at some point and involve both sides in an escalation they cannot control.
- That superpower energy interests may drive them into desperate conflict.
- That proliferation may add flash points and escalation ladder rungs.
- That it can now be seen that "detente" is not inevitable, nor is steady progress toward its achievement.
- That a world which avoids all but the proxy use of force is not as imminent as President Nixon once suggested in a State of the World message on the forthcoming era of peace.

On the whole then, if the likelihood of the superpower use of nuclear weapons were to be plotted, it would show general decline but, currently, a rise that especially alarms a new generation of observers. Their wholly legitimate fear is that the current rise in likelihood may continue upward.

They see the Middle East scenarios for nuclear war. They see the rise in nuclear proliferation—a new source of conflict outside superpower "control". Thus, they see a

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rise in the "random", i.e., non-deliberate component. In addition, there is the real danger that any halt in the secular decline in the likelihood of superpower-initiated nuclear war will preclude resolving the overall danger until after the world's number comes up.

Consequently, one formulation of the nuclear war problem is to see it as one of getting through the next, say, fifty years. The weapons will surely still be around because no foreseeable disarmament process can eliminate them in such an historically short time. But world attitudes will, almost certainly, have continued to evolve considerably. We have to give them time to do so.

The soldiers of 2030 may, for all we know, be unwilling to fire nuclear weapons. The leaders may be tired of purchasing them. Nations may have turned inward in their concerns. The rivalry of the superpowers may have been submerging in a joint struggle with poorer Southern neighbors. A new political consciousness—which is, after all, the ultimate control over weapons of mass destruction—may have taken hold. In short, the situation will presumably still be grim, but time may have produced wholly unexpected partial solutions. If we get the time.

The question is, therefore, how best to buy time. In particular, which trends ought to be best pressed? Here much depends upon the young. The ultimate survival mechanism of Darwinian evolution is, in fact, death. Only because the old die can the species evolve. The young carry not only the physical mutations, but the mental adjustments needed to relate to the evolving environment. As a result they are also best in sensing which way the tide of human sentiment is moving and, in any case, can determine that movement.

At the moment, the nuclear war activists in their twenties simply assume that their task is the sensitization of their generation to the danger of nuclear war. They perceive, initially through introspection, ignorance concerning nuclear war among their contemporaries, an ignorance unimaginable to their elders. This they propose to eradicate. In their effort they are joined by a number of activist organizations touring the country with exhibits on nuclear war.

They will not, of course, succeed to the extent that was inadvertently accomplished in 1961 by the Kennedy fallout shelter and civil defense program. They will lack—we can hope they will lack—the transcendent crisis without which one does not get the population's full attention. And, in due course, they will move on to other techniques which, while incorporating public education, will have sharper focus. What will these be?

Will they come to work on the specific causes, and flash points, of war seeing these as the real issue, rather than nuclear war in the abstract? Or can they get a generation, in the Soviet Union as well as here, to focus on the common danger of nuclear war with an intensity sufficient to motivate new agreements, perhaps of new kinds? Will they focus on specific weapons systems, or specific major treaties, as their elders spent a decade on the ABM agreement? Will they succeed in merging the popular concern about nuclear reactors with that of nuclear war? Or will they just finesse the war issue by proposing, for example, some 1980 version of openness that brings the world

together? Alternatively, will they find, or accentuate, some common industrial danger to divert the military-industrial complexes of both sides? Only time will tell.

In sum, perhaps, the only thing about which one can feel sure is that the duty of each generation of "arms controller" is to buy time. In this regard, time appears to be the long-sought universal solvent. □ JJS

## POPE ATTACKS NUCLEAR WAR AND GENETIC ENGINEERING TOO

In an address to UNESCO, Pope John Paul II offered some serious comments on nuclear war following two earlier comments made at the last Christmas season. Unfortunately, on this occasion, the Vatican could not resist taking a poke at a brand of scientific activities unrelated to war, genetic engineering, which could pose problems for certain of its schools of thought.

On nuclear war, the Pope addressed himself, without mentioning them, to such issues as "first use" and "tactical nuclear weapons" by addressing the problem of escalation:

"Until now, we have been told that nuclear arms have constituted a deterrent force which has prevented the outbreak of "major" war, and so it is, no doubt. But we can also, at the same time, wonder if it will always be thus. Nuclear weapons, whatever their order of importance or whatever their type, are each year perfected, and are added to the arsenals of ever more countries. How can we be sure that the use of nuclear arms, even for national defense or limited conflicts, will not lead to an inevitable escalation, ending in a destruction which humanity can never envisage, let alone accept?"

He introduced these matters by supporting the right of men of science to decide "in complete independence of spirit, on the human and ethical honesty" of the purposes of science, lest they become an instrument for attaining "alien goals". The Pope noted that scientists had been "cited in international tribunals at the close of the last world war". (This apparently refers to Nazi doctors)

In summarizing his warning, the Pope widened his target and warned, not only about nuclear war, but against science being enslaved by goals that were "destructive of the true dignity of man and human life". In giving examples of occasions where results are applied to ends contradictory to those of humanity, he said:

"this can be verified as well in the realm of genetic manipulations and biological experiments as well as in those of chemical, bacteriological or nuclear armaments."

Thus does the struggle between science and religion crop up amidst their shared interest in avoiding nuclear war. The Pope's conclusion was, finally, quite broad:

"And I beseech you: Let us display all our efforts to instill and respect, *in all the domains of science, the primacy of the ethical*. Let us especially display our efforts to preserve the human family from the horrible prospect of a nuclear war. (italics added). □

## THE MX MISSILE: A VIEW FROM CAPITOL HILL

A consensus is growing that the MX as planned will never be built; but ironically, at the same time, the Congress has continued to fund the program at a very high level!

On the one hand, congressional aides seem to feel it is only a matter of time until the dagger finally falls on the MX basing mode. One Senate observer compared MX to a "great wounded bear" which each year was becoming weaker and weaker. Another compared this phase of the fight against MX to finishing chapter 17 in a 27-chapter book when cancellation of the program won't take place until chapter 26. Still another aide termed the fight against MX "a war of attrition", in which the toll of higher system costs, modifications to the basing scheme, delays in the program and local opposition in the deployment zones will finally defeat the proposal. No matter what the metaphor, it would appear that most agree, the basing mode is doomed.

On the other hand, the votes for defeating the system have yet to materialize. An amendment offered by Congressman Ronald Dellums (D-Ca.), to strike all funding for the MX actually received fewer votes this year than in the past (he has offered this measure to the last two defense authorization bills). It failed by a vote of 82-319.

### The Dilemma

The proposed MX system would at first glance appear to be a natural target for congressional defeat. The shell game basing mode—moving 200 missiles amongst 4600 shelters with each missile on its own track containing 23 shelters—is generally perceived as a Rube Goldberg fix to the problem of silo vulnerability. And because the system's survivability is premised on deception, a security leak, or the development of a new method of surveillance by the Soviets could make it vulnerable. The fact that the system must always be larger than the Soviet force that threatens it means that it could end up growing far beyond present plans. (See adjoining box).

Further, the MX concept contains something which decisionmakers of every political school can oppose. Its hard-target kill capability and potential for verification problems should earn the opposition of the doves in Congress. Its complicated, but verifiable, basing mode makes it the target of hawks who oppose SALT. Its cost—between \$33 and \$50 billion—will interfere with efforts to balance the budget and enrage fiscal conservatives. Its deployment will have a substantial negative impact on the environment and thus will attract the opposition of representatives of the threatened regions.

It appears that there are three reasons why a coalition against the program has not been formed to date. First, this is an election year; politicians are reluctant to oppose major weapons systems when they are campaigning, for fear that they may be labelled "soft on defense". Second, no single alternative to the MX has arisen. Regardless of their uneasiness with MX, most congressmen believe that

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## MX AT SEA IN THE ABSENCE OF SALT

Without the SALT II limits, the Soviet Union could build so many warheads that any land-based system, fixed or mobile could be jeopardized.

—President Carter,  
*State of the Union Address, 1979*

Perhaps the greatest uncertainty stems from the number of shelters that will ultimately be built. This depends primarily on Soviet actions, especially if they remain unconstrained by SALT. The racetrack data just discussed is for a 4600-shelter MPS system. If the Soviets deploy more ICBM RVs, the system would need to be expanded.

As Secretary of Defense Harold Brown wrote to Senator Stennis on September 7, 1979:

Against the projected threat with SALT II constraints, the 4600 shelters are adequate. . .

Larger Soviet ICBM forces are possible to envisage. These would require a correspondingly larger MX "force" (more shelters, and perhaps more deployment areas, depending on the nature of the threat) to achieve comparable levels of survivability. We have sized our MX force against the Soviet ICBM force projected for the 1980s assuming SALT constraints.

The number of RVs the Soviets deploy would determine the number of shelters we would need to deploy in response. According to Secretary Perry, "if they go to 8,000 RV's, they will, in all probability, deploy somewhat more shelters than this." He also noted that the Soviets could have "anywhere between 6,000 and 8,000 ICBM RV's" by the end of SALT II. Without SALT, he said, "and the Soviets go to over 10,000 RVs, we could get our shelters up to 10,000 by the 1989 operational capability date for the MX, if we know by 1983 or 1984 that the Soviets are going up." Adding these extra shelters would cost \$8 to \$10 billion. Perry also said that in the event of a presumably more severe (though undefined) Soviet buildup unconstrained by SALT II, "the MX program would require 400 missiles and 13,500 shelters at a cost of \$59 billion in constant FY 80 dollars." Finally, the Congressional Budget Office estimates that if there were no SALT II limits, and if the Soviets chose to spend the necessary resources, they could at some time after 1990 deploy 1,398 MIRVed ICBMs with 23,000 warheads. CBO estimates that maintaining the survivability of the MX/racetrack system by adding more shelters and missiles would require 23,485 shelters and 450 MX missiles at a cost of \$100.7 billion in FY 80 dollars. This latter deployment, it should be noted, is hypothetical and the Air Force is not considering it.

The above considerations suggest the great areas of uncertainty surrounding the MX basing program."

—Domestic Considerations Affecting MX Missile  
*Jonathan E. Medulia, March 11, 1980,*  
*Congressional Research Service.*

