A Last Go-Around for the MX Missile?

Supporters and opponents of the closely spaced basing mode count their votes and polish their arguments

Richard Garwin, an iconoclastic U.S. weapons expert, is once again on the warpath, assailing a major weapons system and accusing Defense Department managers of muddleheaded thinking. The latest target of his technical barbs is the Pentagon's scheme for deployment of the MX nuclear missile—a scheme known to its adherents as closely spaced basing, and to its detractors as simply Dense Pack.

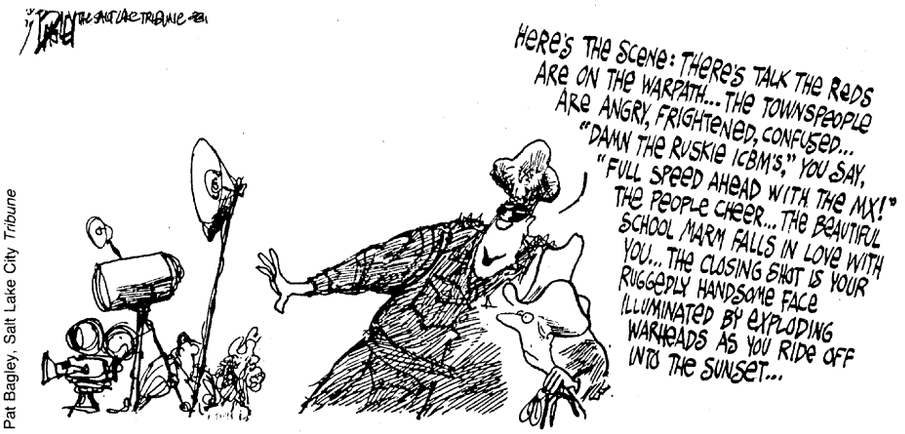
Garwin, who has attacked many previous MX basing modes, risks becoming known as a spoilsport for the U.S. Air Force. Closely spaced basing is widely recognized as the missile managers' last and best hope for acquiring the provocative new missile. Teams of experts all over the country have been studying it for the past 6 months, and President Reagan is expected to endorse it either this week or next, touching off a month-long campaign for approval by the lame-duck Congress.

"A nice idea but it fails," is Garwin's brief description. "I wish that the Department of Defense and the Air Force would think these things through more carefully," he says, adding insult to injury. "It makes no sense to me." In reaching such conclusions, Garwin says that he draws on his extensive experience as a designer of nuclear weapons and as a member of JASON, an elite group of physicists appointed to offer technical advice to the Defense Advanced Research Projects Agency.

Closely spaced basing is thought by the Air Force to be an adequate response to a problem that has worried American strategic planners for a decade—the development by the Soviets of intercontinental ballistic missiles accurate enough to destroy existing U.S. land-based missiles. Air Force scientists claim that closely spaced basing would bar a successful Soviet strike on the land-based MX by ensuring that a substantial portion of the missiles would survive a preemptive assault. It would supposedly accomplish this by complicating the attack far beyond Soviet capabilities.

The missiles would, for example, be arrayed in a small area so that the radiation, blast waves, and debris generated by initial detonations overhead would destroy or deflect other incoming warheads, unless the explosions were timed with nearly impossible precision. The ability of the MX to survive an attack will be enhanced by the construction of silos capable of withstanding more stress than any existing silo. Any MX missiles that survive the assault will be launched through the debris in a devastating retaliation.

This is the idea at present. It is said to be available for purchase at $28 billion, not including the cost of warheads and missile support equipment. By the early 1990's, the Air Force admits, the Soviets will have developed countermeasures that may threaten this system and require its improvement or expansion. They will have developed warheads capable of earth penetration or a soft landing, for example. Earth penetrators would minimize the dispersal of fratricidal radiation, while soft-landers would detonate singly or in groups, on cue. Either could overcome the obstacles to a perfect attack posed by closely spaced basing. Taxpayers are not to worry, says the Air Force. By the time these warheads are deployed, the Pentagon will have started to rotate the MX among a large number of specially hardened silos, or it will have perfected and deployed a system of ballistic missile defense. Either would leave Soviet planners confused and demoralized. Missile defense and additional silos will cost only tens of billions of dollars more.



Pat Bagley, Salt Lake City *Tribune*

Many prominent American scientists, besides Garwin, believe that the system will probably fail, that the Soviets will develop adequate countermeasures, or that the United States will stumble during the development and construction of closely spaced basing. They point to the technical uncertainties: How strong will the silos really be? It is generally conceded within the Defense Department that no one can ever be sure because the only realistic test will be war itself. How quickly will the Soviets react? The scientists point to an assessment by a panel of experts organized by Secretary of Defense Caspar Weinberger and chaired by Charles Townes, a physicist and Nobel laureate at the University of California. The panel concluded that the race between the Soviets and the United States in deployment, countermeasure, and counter-countermeasure will be neck and neck. How can the Pentagon be confident that it will perfect a ballistic missile defense within 5 or 10 years, when it has been trying and failing for the last two decades? Even some officials in the Army, which is responsible for missile defense, say that it will be a difficult and challenging task. These and other concerns have been raised in recent months by a number of former high-level Pentagon, State Department, and Central Intelligence Agency officials, including Hans Bethe, Herbert Scoville, Sidney Drell, Stansfield Turner, George Kistiakowsky, Herbert York, George Rathjens, and William Perry.

In addition to listing the uncertainties of closely spaced basing, Garwin notes that the United States will definitely be

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prevented from firing the MX promptly, "unless the Soviets want us to." The reason, he says, is that they can lob submarine- and land-based missiles high over the MX missile silos and detonate them in a rapid continuous sequence, thereby destroying any missiles launched in retaliation. Optimally, the Soviets would begin their attack with such a "pin-down" and then follow with a carefully orchestrated assault on, say, every third silo, repeating the attack in waves until all the silos were destroyed. Kent Johnson, a physicist at Lawrence Livermore National Laboratory who has studied the "pin-down" and other attack strategies, concedes that there is no means of stopping a pin-down short of finding and destroying the Soviet submarines and mounting a comparable attack over the Soviet Union, something that the United States may not be able to accomplish right away. The Air Force's only answer is to arrange the MX missile silos in a long column, so that a pin-down requires the highest possible number of Soviet weapons. It is the Pentagon's fervent hope that this will lessen the incentive for the Soviets to try it.

Garwin, along with some other scientists and arms control advocates, believes that the answer to this problem is not to deploy the MX in a different basing mode, but to rely instead on the invulnerable force of U.S. submarines for deterrence. "Technology has overtaken the land-based missile," Garwin says. This view is supported by the Union of Concerned Scientists, Common Cause, Friends of the Earth, and the Council for a Livable World, and representatives of these organizations will attempt to drive the argument home during the coming congressional debate.

Lobbying in favor of the closely spaced basing plan is expected from the White House, the Pentagon, the State Department, and the weapons manufacturers who stand to gain financially from its construction. According to a study by Common Cause in October, political action committees from these corporations donated $780,000 to incumbent members of Congress as of 1 August. The overall effort will probably be coordinated by Thomas Reed, a former Air Force secretary now on the National Security Council, and by General James McCarthy, who was recently appointed as the Air Force legislative liaison. McCarthy served as special assistant for MX matters in the Air Force research and development office for the past 2 years.

A forum for the debate will be provided by consideration of the defense appropriations bill for fiscal 1983, or alternatively, a resolution for continued defense spending at last year's levels, which would permit continued MX development. Senator Ernest Hollings (D–S.C.), a member of the defense appropriations subcommittee, has already announced that he will lead opposition to the basing mode on the Senate floor. In the House, opposition will be led by Joseph Addabbo (D–N.Y.), the defense subcommittee chairman. Additional efforts will be made by Senator Gary Hart (D–Colo.), and by 37 members of the House who signed a statement opposing closely spaced basing last month. "We are told that the initial array of 100 missiles will be survivable for only a brief period of time," the statement said. "Construction of this system will damage our economy and not provide additional security for our country."

Despite the breadth of this opposition, many vote-watchers give the Pentagon—and the basing mode—a good chance of success. Congress rarely cancels any major weapons program, particularly one on which billions of dollars have been expended. The President is expected to claim that a cancellation would send a signal to the Soviet Union that U.S. resolve is weak, and that the Soviets' incentive to negotiate an arms treaty with the United States will thereby be lessened. He may also argue that deployment of the MX in closely spaced basing is essential even if its invulnerability cannot be assured. Last June, Reed stated that "the President views the production of a new, larger, more accurate, and more easily maintained ICBM, with the earliest possible introduction into the operational force, as absolutely essential . . . . we must have a steady, ongoing ICBM program without turbulence." Turbulence, in Reed's view, is created by excessive concern about the ability of the MX to survive a Soviet assault.

—R. JEFFREY SMITH

Funds Squeezed for International Agriculture

Support for international agricultural research suffers from budgetary constraints, inflation, and a strong dollar

At a time when many experts are warning that the world faces a potential food crisis in the years ahead, support for agricultural research in the developing countries is being squeezed. That, at least, was the complaint that dominated the annual Centers Week of the Consultative Group on International Agricultural Research (CGIAR), held at the World Bank earlier this month. The principal item on the agenda was funding for 1983 and, as anticipated, a combination of unfavorable economic factors has produced a shortfall that will erode research and training in virtually all the 13 centers that constitute the group. "We are now at a point where we might have to contemplate closing a center," says Lloyd Evans, a member of the CGIAR's Technical Advisory Committee.

Established in 1972 and run with a degree of informality unusual in the arena of international organizations, the CGIAR is meant as a complement to national research programs in developing countries. Its most outstanding achievements so far include the development of high yielding varieties of wheat and rice (see page 877 of this issue) and new technology that has allowed extensive adoption of the potato as an important food crop. Warren Baum, the group's chairman, notes that increased production of wheat and rice through the use of high yielding varieties is sufficient to feed 300 million people annually.

Although food crops are a major focus of CGIAR efforts, problems of livestock production are addressed too. The International Livestock Center for Africa, based in Addis Ababa, Ethiopia, for example, concentrates directly on improvement of production, whereas the International Laboratory for Research in Animal Diseases, in Nairobi, Kenya, is doing high quality basic research that will take some years to come to fruition. Other long-term programs include the establishment of the International Board for Plant Genetic Resources, based in Rome, Italy, an effort that also recog-

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