MX Missile to Roam 200 Racetracks

Defense analysts Drell and Garwin call the plan clumsy and vulnerable; they favor submarine basing

Jimmy Carter announced on 7 September that he had made the most important decision for America's nuclear forces in more than a decade, likening it to President Truman's decision to create the Strategic Air Command and Kennedy's creation of the Minuteman missile force. Carter endorsed a plan drawn up by the Defense Department to install the newest and most lethal nuclear missile, called the MX, on movable launchers and have them hauled about by 3000-horsepower locomotive-like trucks. These will be sent to roam over 5000 miles of as yet unbuilt military highway in the Southwest, where they will play hide-and-seek with Soviet satellites. As soon as it was announced, the scheme began to draw critical fire from the arms control community.

Debate over the basing system for the MX, which became quite frenetic within the government this year, is now officially at an end. But some independent defense analysts say the decision should not be considered final, for they believe it was a serious mistake and will soon be recognized as such. They argue that, in the interest of national security, the debate should be resumed, because there are simpler and safer approaches than the one the President has taken. Furthermore, there is time to reconsider, they say; the MX will not be ready for deployment until 1985.

The Administration's basing system, nicknamed the "racetrack," will call for an enormous construction project in the Southwest's desert valleys, where water, labor, and support facilities are scarce or nonexistent. The basic plan calls for building 200 road loops, each 15 to 20 miles long, in the deserts of Nevada and Utah. In each loop there will be one missile aboard a mobile launching vehicle (called a transporter-erector-launcher or TEL). A motorized shed on wheels will surround the TEL and accompany it whenever it moves along the loop. The shed will be used to hide the missile's true location from the Soviets.

Around each road loop, at 7000-foot intervals, will be 23 underground garages made of thick concrete to resist the blast of incoming missiles. When it is time to install the missile in a garage, the TEL will drive into its appointed loop with the shed moving along above it. The shed will drive up to each garage on the loop as though to install the TEL at each one. But in reality the TEL will slip out under the shed and park surreptitiously in only one of the garages. At monthly or bimonthly intervals, the shed will visit all the garages and move the missile to a new site. At greater intervals—perhaps once every 6 months or every year—slats in the roofs of the sheds and the garages will slide open to reveal that there is, in fact, only one missile in each loop. On notice of a Soviet missile attack, the TEL's, without their sheds, will "dash" from their garages at 30 miles an hour, park in a new garage, and prepare for launching.

The Defense Department estimates that it will cost $2 million to build each garage and that the total program, missiles and all, will cost about $33 billion in 1980 dollars. The entire network of 4600 garages should be in place, barring unforeseen political, legal, or environmental problems, by 1989 or 1990.

"It's a Rube Goldberg scheme," says Sidney Drell, a defense analyst and deputy director of the Stanford Linear Accelerator Center: "I've never heard of anything so rococo in my life. It's absurd." Richard Garwin, another veteran defense consultant, former director of applied research at IBM, and professor at the Kennedy School of Government at Harvard University, says Carter's choice for MX basing is "absolutely wrong." The racetrack, he claims, is "a vulnerable system; I will bet that within 2 years it will be regarded as just as vulnerable as the Minuteman it is replacing."

Drell and Garwin have looked closely at the proposals for basing the MX and have become vocal critics of the racetrack scheme. In 1978 Drell headed a study on the future of U.S. missile policy that was conducted at the Stanford Research Institute for the Defense Department. He concluded that mobile missiles should be based on small submarines patrolling off the east and west coasts. Garwin sat on a task force on missile modernization put together by the White House Office of Science and Technology Policy, and, like Drell, he concluded that submarines offered the best solution to the problem of missile basing in the 1980's. This conclusion was rejected by the Pentagon, although defense officials agree there is merit in it. As Garwin put it, "Mostly they say it's a very good idea for the 1990's after we finish building Trident [the new nuclear submarine] and get the MX deployed." Understandably, the authors of the minisub proposal have an interest in defending their own research. But their criticism of the racetrack is so fundamental it can hardly be brushed aside as sour grapes.

Drell and Garwin argue that the President has opted for an unnecessarily costly and cumbersome program that will not even come to grips with the problem it is supposed to solve. They agree that the problem requires action: by 1982 or thereabouts, America's most accurate big missiles—the land-based Minuteman-III force—will become vulnerable to a Soviet first-strike attack. This will occur because Soviet missiles will have better guidance systems by then. If the Soviets wished to start a nuclear war, they would be able to use their land-based missiles to destroy over 90 percent of the U.S. Minuteman arsenal. For this to happen, the United States would have to leave its missiles in the ground after being warned that the Soviet missiles were in the air. And even if this first strike were successful, the Soviets would not be able to destroy simultaneously all American bombers and submarines. These would still be free to shower several thousand warheads on the Soviet Union—enough to end civilized life there.

Thus, "Minuteman vulnerability" is a largely theoretical problem. But it is worrisome because it diminishes confidence in the most accurate, heaviest, and best-controlled segment of the U.S. nuclear triad. (Submarines and bombers are the other segments.) This may not be the most important practical problem

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confronting our strategic forces, Garwin says, but it is the one which the Defense Department has advertised most and seems most concerned about.

Garwin points out that there are several quick and relatively cheap measures that could be taken to restore full confidence in our nuclear forces, and he recommends that all of them be followed. They involve such things as improving the guidance and communications for submarine-based missiles to make them as threatening to the Soviets as Minuteman, installing simple nonnuclear defenses around Minuteman silos, and developing an airborne missile equivalent to Minuteman. But, he says, the Pentagon does not like to solve problems with technical fixes; it prefers to buy whole systems. For this reason, the only solution that meets the Pentagon's terms of acceptability is one that creates a new and truly invulnerable heavy missile system—one which, like Minuteman, is highly accurate and securely linked with a central command post.

According to Garwin and Drell, one of the glaring flaws in the racetrack scheme is that it will be just as vulnerable to a Soviet first strike as Minuteman during the early part of its construction. This is so because the Soviets will have enough warheads to aim two at each missile garage during this period. Only when the construction program enters the final stage—in 1988 or 1989—will U.S. missile garages be so numerous as to present targeting problems for the Soviets. There is another catch: the SALT II treaty, now being considered by Congress, is due to expire in 1985. If it is allowed to lapse, the Soviets will be free to place more warheads on their missiles and, of course, to build more missiles beginning in 1985. Yet the racetrack system will not be finished until 4 or 5 years later. The invulnerability of the racetrack scheme thus depends on persuading the Soviets to limit the number of warheads on their missiles, or alternatively, on building $2-million garages in the Southwest faster than the Soviets can place warheads on their missiles.

Garwin recently wrote that the United States is buying itself an "anti-bargaining chip" for the next round of negotiations with the Soviets: "Can you imagine that in 1983 as SALT III negotiations are coming down to the wire, the U.S. says to the Soviet Union, 'Please Mr. Soviet Union, we have committed $30 billion to the deployment of the [new missile] system, which will be vulnerable if you deploy a lot more warheads. Therefore, won't you be so good as to agree in SALT III not to have enough warheads to threaten the MX?' No doubt the Soviet Union will be only too glad to agree, but what price will they exact as a condition of that agreement?"

Garwin says he has been warning Defense officials for years that if they say that the Soviet Union is going to imperil Minuteman in 1982 but then provide no solution until 1988, "they're just going to be laughed out of court." He continued: "They get everybody to feel that Minuteman vulnerability is unacceptable and a terrible political threat, and then they say, 'By the way, you have 7 to 10 years of assured vulnerability.' What kind of business is that?"

When asked about this weakness in a press conference, William Perry, undersecretary of defense for research and engineering, said he doubted the Soviets would try to place more warheads on their missiles, because the United States would be able to expand and accelerate its racetrack construction program, building 10,000 rather than 4600 shelters by 1989:

> We can do that while still maintaining the final operational date—1989—provided we know what is happening by about 1983 or 1984. It's a matter of how many shelters we build and how many missiles we build. We can build about 2000 shelters a year without going into a war emergency kind of a footing. . . . We can demonstrate, not only to you and to the Congress, but I believe to the Soviets, that . . . they cannot win that sort of a race. . . .

A second major flaw in the racetrack, Drell says, is its dependence on deception. For the system to work, it must contain more garages than the Soviets have warheads, but it must also deceive the Soviets about the missile's location. This will require elaborate security controls to keep information from the crews that operate the missile bases, and it will mean that the garages and the sheds that hide the TEL's must be designed to give the Soviets the impression that each one has a missile in it. The Defense Department, for example, has not yet decided whether it will be necessary to install huge concrete weights (at a total cost of $1.4 billion) in each shed to deceive seismic sensors. In an article written for the Arms Control Association, Drell says that in adopting deception as a defense (rather than a straightforward concealment), the United States will be trying to compete on the Soviets' home turf: "The Soviet system is far better adapted to the imposition of controls, secrecy, and limitations on their population. The Soviets also have 2½ times the territory of the continental U.S. . . . in which to deploy and 'hide' mobile ICBMs. We should prefer to compete with the Soviets on our own home turf of mobility based on new systems and reliable technologies."

A third flaw in the racetrack plan, say Garwin and Drell, is that it will make arms control more difficult. It may magnify fears of a surreptitious "breakout" strategy, in which surplus missiles are stockpiled slowly and then, in a surprise move, rushed to preconstructed launching sites. If the Soviet Union were to copy the U.S. racetrack and put 200 missiles in 4600 concrete shelters, Garwin claims, there would be no way to assure the public that the Soviets were not building a threatening stockpile of more than 200 missiles. Fears of this sort could frighten both sides into producing more warheads.

A submarine missile system based near the coast would eliminate or diminish nearly all of these problems, according to Drell and Garwin. They claim that most of the technology is available and could be adapted for an operational system much sooner than the racetrack scheme will be ready—perhaps by 1985 or 1986. Germany already has built 18 modern subs weighing 450 tons each (as compared with 8000 tons for the Poseidon and 18,000 tons for Trident), and uses them in the Baltic Sea. In the Garwin-Drell scheme, the small vessels would be fitted with two or three external missile capsules, a power system already in use on commercial surveying subs, and a new communications system. About 100 of these little subs could be built in fairly short order, the proponents say, at a much lower cost than the racetracks proposed by the Defense Department. In terms of security, their most important feature is invulnerability: unlike the land missiles which are safe only in the aggregate, the submarines are individually invulnerable. Each one, as it puts to sea, diminishes the perceived Soviet threat to Minuteman. They do not require a massive program of deception. They have a distinct advantage in terms of arms control: because they are easy to count as they are assembled in shipyards, they would create no fear of a breakout.

Air Force officials say the idea has technical flaws. For example, they argue that the submarines might be rolled over or destroyed in the turbulence that could be caused by a Soviet barrage of American coastal waters. And they fear that—no matter how sophisticated—the communications link with the little subs would be markedly inferior to the one planned for the racetrack. Garwin disputes both points.

Perhaps even more important than the technical criticism is the feeling, as one

Air Force officer put it, that moving into subs would be like telling the Soviets they had "chased us off the land." In this context, it is useful to keep in mind the Defense Department's doctrine of the strategic triad: America must have invulnerable nuclear forces in the water, in the air, and on the land. Under this doctrine, one does not solve the weakness of a land-based force by putting a new force underwater. Besides, the Air Force, which is due to get the MX, is not eager to go underwater, and certainly not in diminutive German submarines. The Navy is bored with the idea, Drell suspects, because it would siphon off funds from the Trident construction program, which is already a huge financial burden, and slow the pace of the ambitious new conventional shipbuilding plan. As Drell claims, "The principal obstacle to the [submarine] system at this time is that it has no institutional home or constituency."—ELIOT MARSHALL

Jere Goyan Brings Innovative Record to FDA

The new commissioner supports patient rights and the prescribing of drugs by pharmacists

San Francisco. Jere Edwin Goyan, recently named the new commissioner of the federal Food and Drug Administration (FDA), is bringing with him some strong prescriptions for the medical profession and the drug industry. "Basically, I'm a therapeutic nihilist," he says. "My general philosophy is the fewer drugs people take, the better off they are."

Goyan's tenure promises to be one of the most lively and interesting FDA has seen. Goyan, 49, is the first pharmacist chosen as head of the nation's premier consumer protection agency. As a relative outsider to the food-drug-medical community traditionally interested in FDA policy, he has a host of ideas that may prove unsettling to the agency's constituent groups.

Take, for example, the question of direct education of the purchasers of drugs, through package inserts or by independent means. It is currently a hot issue before the FDA, with physicians and drug firms exhibiting considerable reluctance to have their authority challenged by government warnings they expect patients to misunderstand, or just ignore. "I have a strong belief in a patient's right to know," said Goyan in a recent interview. "My philosophy on this makes doctors and some of my colleagues uneasy, but in the best interests of public health, it should be mandated." His view is rooted in the belief that "drug companies have a tendency to try to sell drugs and not to convey information," and in what he sees as the inattention of physicians to adverse drug reactions. "Too often the wrong drug has been given to the wrong patient, at the wrong time, and in the wrong amounts, with no consideration of costs," he told the Institute of Medicine, of which he is a member, in 1974.

Goyan says he will push for more careful study of actual drug use, known as postprescription monitoring, which is a key element of the Drug Regulation Reform Act recently approved in the Senate. Drug salesmen could somehow be certified, he says, to circumvent the fact that "they're paid to sell things, not to do a good job." In general, Goyan indicates he will be at home in the regulatory environment: He said in January that "If a certain practice is in the best health interest of the patient, it should be required by law."

In these and other causes, Goyan can be taken seriously. As former dean of the School of Pharmacy at the University of California, San Francisco (UCSF), he has an established record as a successful innovator. The accomplishment for which he is perhaps best known is the addition of a year of clinical experience to the pharmaceutical degree requirements at UCSF. "It did away with one-quarter of the established curriculum," says Goyan, who adds it was about as easy as moving a cemetery. Although heretical at the time it was proposed, the curriculum change has now been widely accepted by other schools.

Goyan has also achieved recognition for his relentless promotion and criticism of the pharmaceutical profession. In a series of articles and speeches written since he became a dean in 1967, Goyan has pressed for broader involvement of pharmacists in the physician's province of drug prescribing. "It is my deeply held belief that the U.S. public deserves better drug therapy than it is receiving and, furthermore, that the pharmacist is in an ideal position to have a positive impact," he says. "Ideally, decisions regarding selection of drugs and their use for the benefit of individual patients would be negotiated between the physician and the pharmacist."

Despite considerable opposition from the medical community, Goyan was able to push through the California state legislature a trial program administered at UCSF and the University of Southern California under which specially trained pharmacists are permitted to prescribe drugs for such things as birth control or hypertension. Diagnosis is still performed by physicians, but pharmacists are able to recommend specific therapy and are responsible for monitoring drug reactions and interactions.

Goyan is the first to acknowledge that few pharmacists may be capable of assuming these chores at the present time. First, he suggests, the profession should consider mandatory relicensing programs; pharmacists should also be forced to assemble medical profiles on purchasers of drugs. The schools of pharmacy should select students more carefully, he says. Finally, pharmacists should be included in health maintenance organizations, where they would be "reimbursed on a capitation basis for the total drug needs of a family," in order to circumvent the incentive to continually increase drug sales.

Goyan says his views are influenced in part by the changes occurring in the profession of pharmacy. The need for training in the compounding of drugs has decreased as more and more drugs become prepackaged. Increased therapeutic responsibilities can take up this slack. Goyan's views have also been influenced by his service as a consultant to the 1969 federal task force on prescription drugs.

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