DESERET NEWS
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How the MX missile fits into the U.S. defense strategy

■ *Utah Gov. Scott Matheson calls it "the most important public policy decision in Utah's history."*

Air Force public relations calls it "man's biggest project."

Air Force Lt. Gen. Kelly Burke says it is "absolutely necessary for national defense."

Jeremy Stone of the Federation of American Scientists says it would be an "arms-control disaster."

These people are talking about MX, a powerful nuclear missile now being developed by the Air Force.

President Carter plans to build 200 of the missiles and hide them among 4,600 concrete and steel shelters in the deserts of Utah and Nevada. Besides the shelters, MX would require 12,000 miles of new road, two major Air Force bases, scores of small support and maintenance bases, and tens of billions of dollars.

The desert and the towns scattered across it would be irrevocably changed.

In this special section, the Deseret News reports why the Air Force says it needs MX, why critics say MX is the wrong plan, how MX would work, what its effects would be on Utah and Nevada and how the decisions on MX will be made.

A deterrence to Russ strike

The United States arsenal already has enough hydrogen bombs, bombers, submarines and missiles to destroy the Soviet Union many times.

Why then does the Department of Defense want the MX? Is it just another expensive new missile?

Air Force spokesmen explain that the foremost purpose of U.S. strategic forces is to deter a Soviet attack. In their arsenal, the Soviets have about 6,000 nuclear warheads, each of which could obliterate an American city.

If the Soviets chose to attack, the United States would be helpless to prevent its own destruction. The United States has little civil defense or air defense. It is almost entirely open to Soviet attack.

Instead of trying to defend itself, the United States relies on a counter-threat: If the Soviet Union destroys the United States, the United States will, in turn, destroy the Soviet Union.

The strategy of deterring Soviet attack depends not on how many bombs and missiles the United States has, but on how many the United States would have in working order after a Soviet attack.

If a Soviet surprise attack could destroy the ability of the United States to reply in kind, then deterrence would have failed and America would be open to annihilation.

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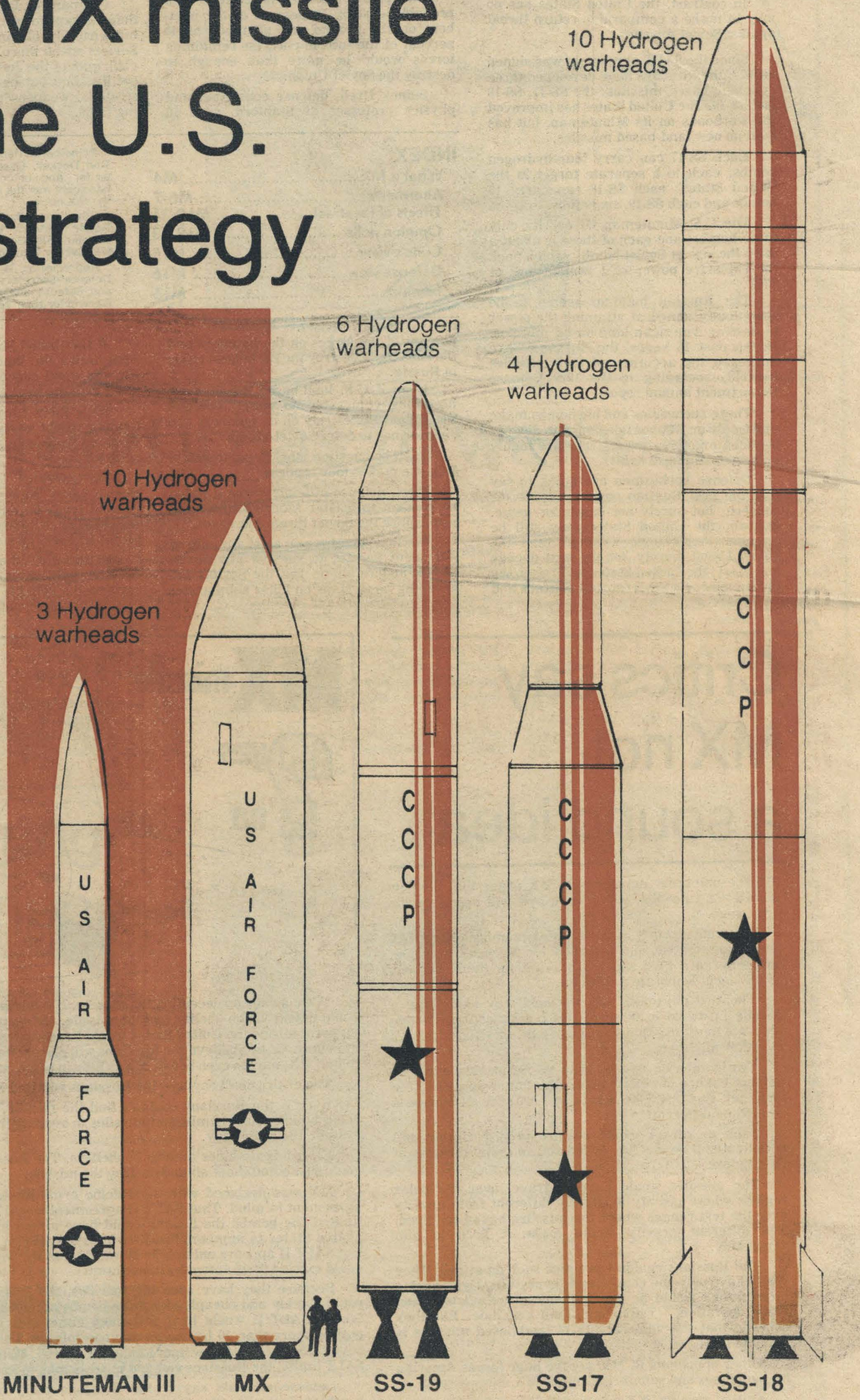

The MX is larger than the Minuteman missile, smaller than Soviet SS-19 and SS-17 but packing as much punch as the Russians' huge SS-18 — 10 nuclear-tipped warheads.

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Air Force Lt. Gen. Kelly Burke says Minuteman vulnerability is this nation's most pressing strategic problem. In 1982 or 1983, the Soviet Union will have enough big, new, accurate missiles to destroy the U.S. land-based missile force with a fraction of its hydrogen bombs. Little retaliation from land-based missiles would be possible after such a strike.

In contrast, the United States has no way to make a comparable return threat against Soviet missiles.

Since the SALT agreement was signed in 1972, the Russians have developed three new land-based missiles: the SS-17, SS-18 and SS-19. The United States has improved the warheads on its Minuteman, but has built no new land-based missiles.

Each SS-17 can carry four hydrogen bombs, each to a separate target in the United States; each SS-18 can carry 10 bombs and each SS-19. six bombs.

The U.S. Minuteman III carries only three bombs, and each of those is about a third the size of Soviet bombs, which pack the explosive power of 1 million tons of TNT.

The Russian build-up seems to be specifically aimed at attaining the power to destroy American land-based missiles. In the past 15 years, the Russians have improved the accuracy of their missiles fivefold, according to the 1979 Defense Department annual report.

Those accuracies and big bombs make sense only on weapons designed to destroy missiles or other targets that are highly protected and hard to hit.

Defense spokesmen are quick to say that the new Russian power is cause for concern, but surely not cause for panic. Overall, the United States may still be stronger in strategic weapons than the Soviet Union. Surely, for the next decade and more, the United States will retain the ability to bear a Soviet surprise attack and still destroy the Soviet Union.

MX critics say the Soviet ability to destroy Minuteman is theoretical, and may not work so well in practice.

But even if the Soviets succeeded in destroying U.S. land-based missiles, the bombers and submarines would remain. Only 25 percent of U.S. bombs aimed at the Soviet Union are on land-based missiles. The rest are on bombers or submarines.

Though a Soviet surprise attack would probably destroy 70 percent of the bombers on the ground and as much as 40 percent of the subs in port, the remaining forces would be more than enough to destroy the Soviet Union.

Sidney Drell, defense consultant and physics professor at Stanford, says 10 percent of the forces on the bombers and the subs could destroy the 200 largest cities in Russia.

Even if U.S. land-based missiles are becoming vulnerable on paper, couldn't the United States rely on its bombers and submarines to deter Soviet attack?

To this question, the Department of Defense makes four replies:

First, defense officials argue it would be prudent to bolster America's defenses now before the Soviet threat increases.

For now, bombers on alert and subs at sea seem certain to survive any Soviet attack and retaliate. But the Soviets are spending large sums on killer submarines to pursue U.S. subs. Vast radar arrays and fleets of anti-aircraft missiles and interceptor airplanes wait in Russia to try to stop an attack by American bombers.

America is not dormant. The United States is building Trident submarines and missiles that will make America's missile-carrying subs more difficult to find and attack. B-52 bombers will be equipped with Cruise missiles in a few years to easily penetrate Soviet air defenses.

Overall, however, the Soviet effort is greater.

Comparing Russian and American defense expenditures involves guesswork, but virtually all analysts agree that the Soviets spend more. Gen. David C. Jones, chairman of the Joint Chiefs of Staff, said the Russians outspent the United States on strategic weapons by three times during the 1970s.

If the United States concedes Russian superiority in land-based missiles, the Soviets could concentrate their efforts on attacking the subs and bombers.

With their larger expenditures, the Soviets might eventually find a way to threaten subs and bombers by surprise attack.

For America to respond to such a threat takes time. MX won't be fully combat ready until 1989 at the earliest. For six years or so during the 1980s, the United States will rely on subs and bombers.

In the future, the subs or bombers may become vulnerable and America would then need a reliable missile force, defense planners argue.

The second reason the Defense Department wants MX is to head off a limited nuclear war.

Defense Secretary Harold Brown told Congress, "For fully effective deterrence, we need to be able to respond at the level and appropriate to the scale of Soviet attack . . .

"We must be able to deter Soviet attacks of lesser scale by making it clear to them that, after such an attack, we should not have only the choice of either making no effective military response or totally destroying the Soviet Union."

The secretary did not add that total destruction of the Soviet Union would also mean total destruction of the United States.

In such a predicament, the United States might negotiate peace and accept partial defeat rather than obliterate both nations. In a crisis, the Soviets might be tempted to gamble on such a limited nuclear attack.

A third argument for MX is that besides being strong, the United States should appear to be strong.

In his latest annual report, Brown said, "We need forces of such a size and character that every nation perceives that the United States cannot be coerced or intimidated by Soviet forces. Otherwise, the Soviets could gain in the world, and we lose, not from war, but from changes in perceptions about the balance of nuclear power."

MX would help a America appear strong; it is partly for show and muscle flexing.

The fourth Defense Department argument for MX is that it sends a "signal" to the Soviets.

Deputy Defense Secretary William J. Perry said that by returning the threat against Soviet missiles, MX might give the Soviets an incentive to negotiate mutual arms reductions.

MX critics disagree. They argue that the missile is more likely to provoke the Soviets to build more weapons.

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Principal writer for this section was Rod Decker, Deseret News editorial writer and columnist-at-large, who has spent months in intensive study of the MX issue.

Other contributors were Political Editor LaVarr Webb, Washington Bureau Chief Gordon Eliot White and staff writer Pam Wade.

Appreciation is also expressed to Defense Secretary Harold S. Brown and defense analyst Dr. Richard L. Garwin for their contributions.

Critics say MX not a sound idea

The numerous opponents of MX argue that the new missile isn't needed, won't work and will speed up the arms race.

The vulnerability of the Minuteman missile force has been exaggerated, and the need for MX isn't pressing, wrote Bernard Feld and Kosta Tsipis for the November 1979 issue of Scientific American.

The two physicists say the best way to destroy a missile in a silo is to shoot two bombs at it from two separate missiles. That way if one malfunctions or misses the other might hit.

Two bombs on two Russian SS-18s would have a 90 percent chance of destroying a silo. But, Tsipis and Feld point out, shooting 2,000 bombs at 1,000 silos all at once is something different.

Such an attack would require precise timing and coordination. No one has ever fired so many missiles at once before.

The missiles would have to travel over the polar regions where gravity is slightly different from gravity over the test ranges where the missiles have been fired. The different gravity would make it hard to aim accurately.

The Russians couldn't practice such an attack. They would have only one chance to do everything right. Such a large attack would be "an immensely complicated and risky operation," Tsipis and Feld conclude. But they concede that the vulnerability of land-based missiles is likely to increase.

Other opponents of MX say the huge forces America has on planes and submarines make MX unnecessary.

Critics also say MX won't work. Their favorite taunt is to call MX a "Rube Goldberg device," too complicated and cumbersome.

MX depends on deception for success. If the Russians could detect which shelter had the missile, MX would be vulnerable, and the United States would have wasted a lot of money. Critics believe the Russians will discover a way to find MX, maybe even before MX is fully in place in 1989.

The critics don't say how the Russians will find MX.

Even if the Russians couldn't find the missile, they could build enough bombs and missiles to overwhelm the system, the critics say.

Each missile hides among 23 shelters. The Russians could just bomb them all and destroy the missile.

MX was designed with a strategic arms limitation agreement in mind. That SALT II agreement would have limited the bombs the Soviets could have aimed at the United States to numbers insufficient to overwhelm MX. But SALT II appears unlikely to be ratified, so the Soviets could expand their arsenal without limit.

Because they have such big missiles, the Russians could quickly and cheaply aim more bombs at the United States. SALT II would have forbidden either side from putting more than 10 bombs on any one missile. The big Soviet SS-18s can throw more than 10 bombs. With no SALT limits, the Russians can add more bombs to SS-18s.

Defense officials say if the Russians build more bombs and missiles, they can add shelters to give the MX missile more places to hide. They say an additional shelter would cost $2.2 million, about the same as putting an additional Russian bomb on an existing missile.

In an all-out arms race, MX could be protected with anti-ballistic missiles that could destroy Russian missiles as they attacked MX, the Air Force says.

MX threatens Russian missiles as those missiles threaten Minuteman, and putting more bombs on each Soviet missile would only increase Russian vulnerability, the Pentagon says. Two U.S. bombs could destroy one Russian missile with its cargo of 10 or more bombs. But the Russians would have to spend two bombs on each of 23 shelters to destroy one MX with its 10 bombs.

If the Russians chose an arms race against MX, they would run under a handicap, the Pentagon says.

However, opponents of MX say such an ability to attack Russian missiles in their silos isn't something the United States should want, even though the Russians can attack U.S. missiles.

For one reason, threatening Russian missiles would stimulate them to build more weapons, MX opponents say. Defense adviser Sidney Drell, a physics professor at Stanford University, notes that the Russian threat against U.S. missiles is pushing America to build MX.

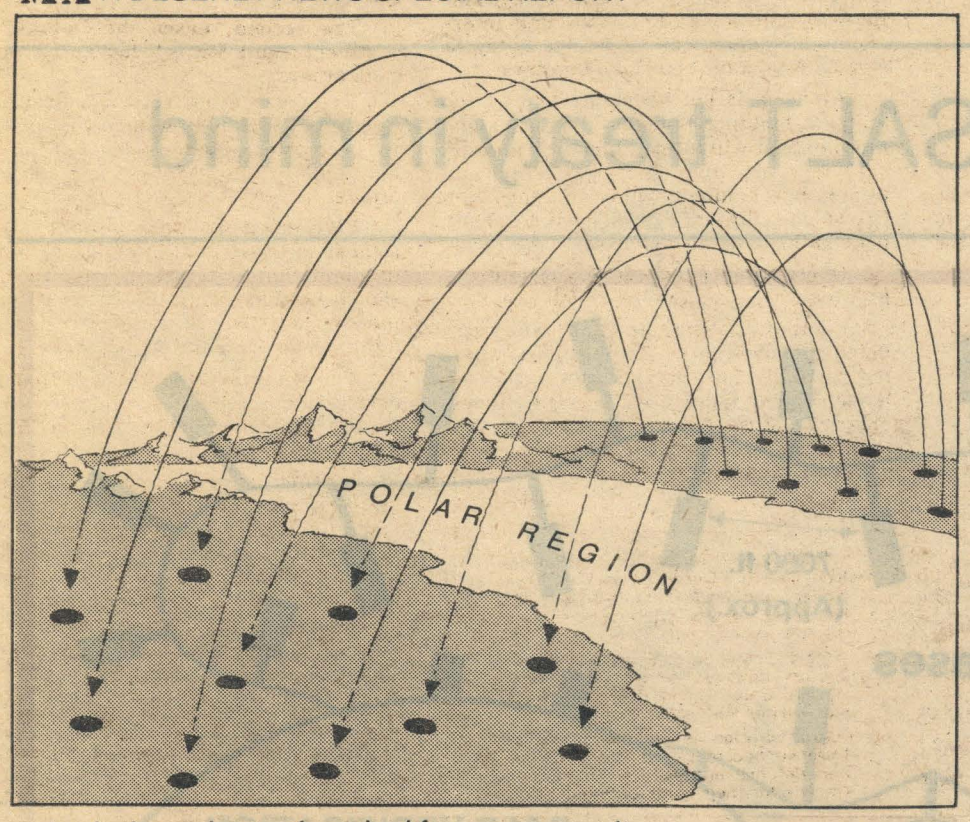
As MX would threaten Soviet missiles, the Russians would likely react in the same way by building more weapons, Drell says, "and this would inevitably lead to further expensive, unnecessary and undesirable arms competition."

Threatening Russian missiles could provoke the Russians to shoot them first in a crisis. The Russians might fear that if they waited, their missiles would be destroyed by a surprise attack, so they must use them or lose them. Avoiding such a threat to the Soviet missiles could save America from nuclear attack, MX critics contend.

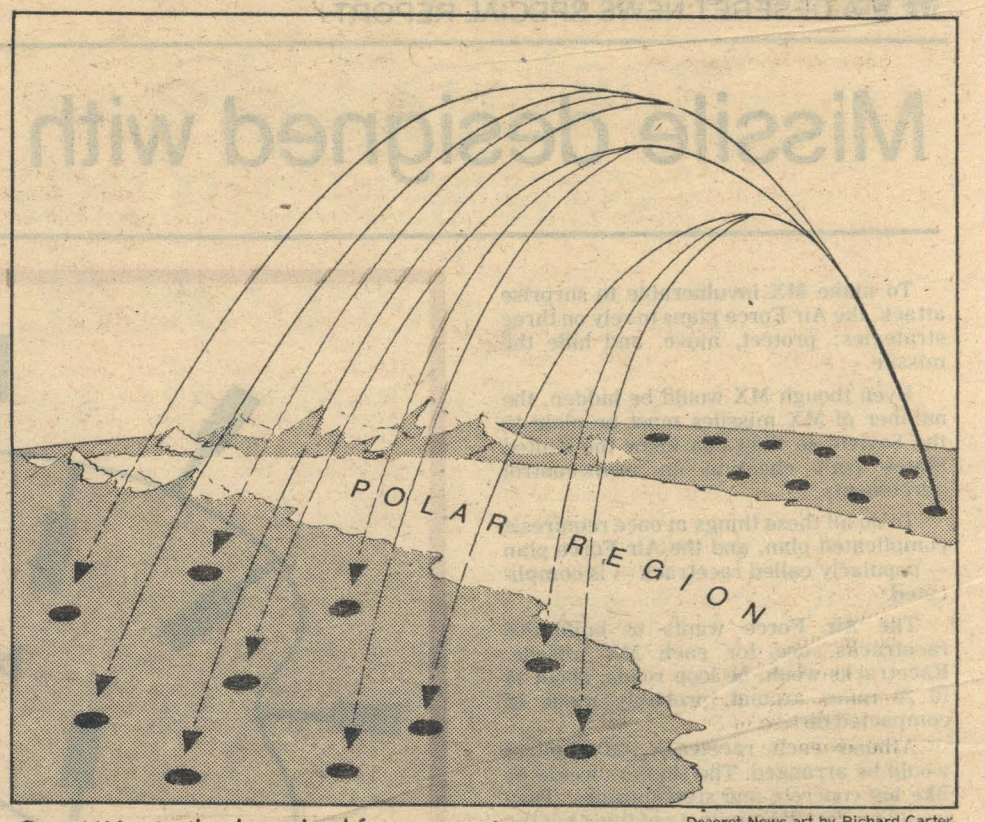
Defense planners say the Russians are more likely to build a mobile or hidden missile of their own, imitating the MX idea rather than trying to overwhelm it.

But a Russian version of MX could damage the prospects for arms control, according to Herbert Scoville, former deputy director of the CIA. MX has been carefully designed to comply with SALT II and to allow the Russians to count for themselves the number of missiles hidden among the array of shelters.

The Russians might not be so careful. If the Soviets built their own version of MX, the United States might be unable to tell how many missiles it contained. That would make future arms control agreements difficult to negotiate, and it would be easy for the Russians to cheat on them.



Individual missiles are launched from separate sites and strike individual targets in the Soviet Union.



One MX missile, launched from one site, can carry 10 nuclear warheads to separate targets in Soviet Union.

Deseret News art by Richard Carter

Fast, accurate and it has 10 warheads

A description of MX — missile experimental — the new intercontinental ballistic missile proposed to be based in the Utah-Nevada Great Basin, reads like the opening of a Superman serial.

It's big, it's accurate, it's able to carry 10 nuclear warheads to pre-programmed targets in a single launch.

The missile, being developed by a team of aerospace firms, will be more than twice the size of the Minuteman III, the most modern U.S. missile now aimed at the Soviets.

Atop each of the 200 MX missiles President Carter plans to build and hide in the southwestern desert will be 10 hydrogen bombs, compared with three bombs carried by Minuteman III.

MX will be 71 feet long and 92 inches in diameter. It will weigh 192,000 pounds, more than twice the size of the Minuteman, and be about equal in size to the Soviet's SS-19. It will have a payload of 7,900 pounds, more than three times the Minuteman payload.

With what Defense Department officials have called 10 "high-yield, high-accuracy warheads" aboard, the MX will have military capability equivalent to the SS-18, the Soviet's largest ICBM.

Besides its size advantage, MX would be about twice as accurate as Minuteman, military officials say. Exact accuracies are classified, but published estimates are that MX could hit within about 300 feet of a target.

The missile's accuracy means MX could be used to blow up Russian missiles still in their silos more effectively than any weapon the United States has produced before.

MX is a four-stage missile. Two of those stages are being developed by Utah corporations. Thiokol Corp., Brigham City, is developing Stage I and Hercules Inc., Magna, is developing Stage III.

Three stages will fall away as the missile travels to its potential targets. The final stage will fall back into the atmosphere and a computer guidance system within it will "look" at the ground, recognize the terrain, then send its 10 warheads to the predetermined targets.

The super missile and the proposed plan for basing it in what has been called a "shell game" plan is designed to greatly enhance the U.S. defense position while allowing further SALT negotiations.

MX cost staggering, hard to comprehend

While any figures dealing with the proposed MX missile system are staggering, the costs are perhaps the most difficult to comprehend.

Based on the worth of a dollar today, the Air Force estimates the cost of the sytem at $33.8 billion. With inflation, that figure could be $56 billion or higher by 1989, according to the General Accounting Office. Some say the costs could run $100 billion.

If the system costs $60 billion over a 10-year period, that amounts to about $300 for every person in the United States.

Assuming MX costs $100 billion and assuming that the federal budget grows at the same rate in the 1980s that it did in the 1970s, MX would take about one-tenth of 1 percent of federal expenditures during the 10 years needed to complete the project. Annual operating costs would add another $480 million a year to the system at today's prices. Rep. Dan Marriott, R-Utah, estimated those annual operating costs at $1.3 billion in 1989 dollars, including inflation.

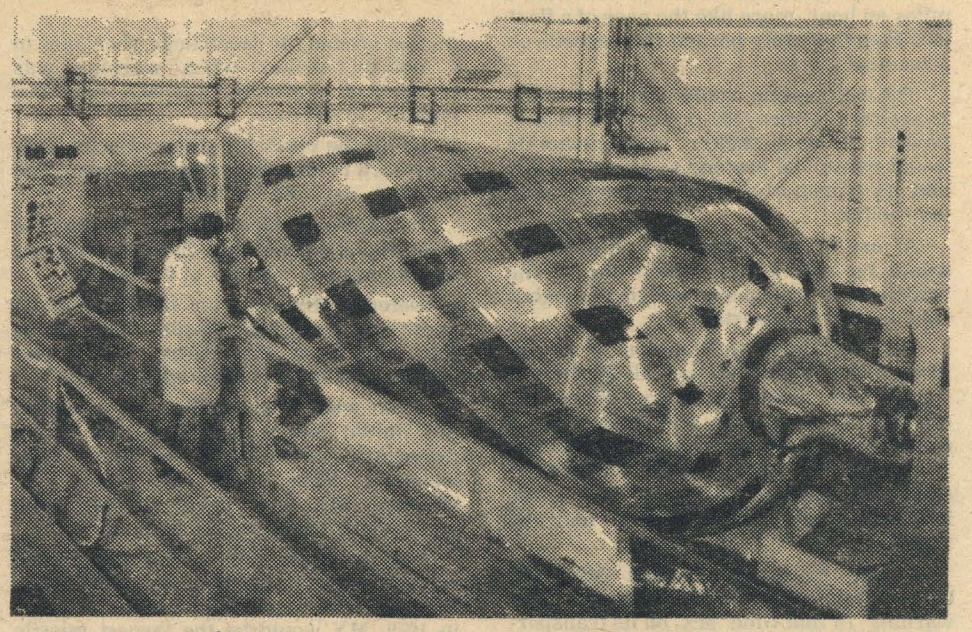
Secretary of Defense Harold Brown, in a statement in March before the subcommittee on military construction of the House Committee on Appropriations, said that, while MX is expensive, the cost is no greater than any of the original three legs of the country's strategic triad — the B-52 Bombers, the nuclear submarines and the Minuteman missile system. Minuteman is America's most modern intercontinental ballistic missile system.

For instance, Brown said, if all the goods and services for Minuteman were purchased and delivered today, it would cost $40 billion.

"The (MX) system will be expensive, but no more so than previous strategic systems developed for the same purpose — to maintain an unambiguously strong and secure strategic deterrent," Brown said.

But opponents of the system point out the inconsistencies in the cost figures.

Rear Adm. Gene R. LaRocque, head of the Center for Defense Information in Washington, D.C., said the Air Force estimates the cost at $33.8 billion, the congressional budget office at $60 billion and some senators at $100 billion. He called it nothing more than the "most expensive public works project in history."



Rocket engine for MX is wrapped in protective covering at Thiokol.

Dr. William J. Perry, undersecretary of Defense for Research and Engineering, in a September 1979 statement, said that, while operating costs of MX are estimated in today's dollars at $440 million, corresponding costs for Minuteman are running $340 million.

Opponents of MX have also charged that making the system conform to the SALT treaty makes it much more costly. Perry says that isn't so. The total cost of verification measures in the proposed MX program is less than $1 billion, he said.

While expenditures are high, proponents say that money equates to jobs, many of those in Utah.

The $33 billion (or $56 billion) cost applies to MX if it is built as proposed with 200 missiles and 4,600 shelters.

Additional missiles and shelters to meet increasing Soviet ICBM threat in the absence of a SALT agreement would be correspondingly higher. For example, Perry said, expanding to 300 missiles and 6,900 shelters would cost an additional $8 billion.

Missile designed with SALT treaty in mind

To make MX invulnerable to surprise attack, the Air Force plans to rely on three strategies: protect, move, and hide the missile.

Even though MX would be hidden, the number of MX missiles must be plain to the Soviets so they can know the United States isn't cheating on arms-control agreements.

To do all those things at once requires a complicated plan, and the Air Force plan — popularly called racetrack — is complicated.

The Air Force wants to build 200 racetracks, one for each MX missile. Racetracks would be loop roads, about 15 to 30 miles around, probably made of compacted dirt.

Around each racetrack, 23 shelters would be arranged. The shelters would be like big concrete and steel garages. They would protect MX against anything but the close strike of a nuclear bomb. The shelters would be about 7,000 feet apart, far enough so that one bomb could not destroy two shelters, the Air Force figures.

Current plans call for 200 MX racetracks to be built in 47 desert valleys. In each valley would be a final assembly area.

The MX missile would be brought to the assembly area in pieces. So would a huge truck-like vehicle called a transporter-erector-launcher. The transporter-erector-launcher would weigh 700,000 pounds and would have 24 huge wheels. The Air Force says it would be "the world's largest rubber-tired vehicle."

The missile would be put on the big rig, and the rig would be driven to the racetrack. There, to hide the missile, the Air Force would play a giant shell game.

Both the missile and the transporter-erector-launcher would be covered by another vehicle called a shield.

Altogether, the MX and its two accompanying vehicles would weigh more than 1 million pounds. This heavy contraption would move around the racetrack about 5 miles an hour, more like the pace of a float in a Fourth-of-July parade than speeds on a racetrack.

The contraption would visit each of the 23 shelters in turn, like a bee in a field of flowers. At each shelter, the contraption would pause and pretend to insert the MX and its transporter-erector-launcher into the shelter.

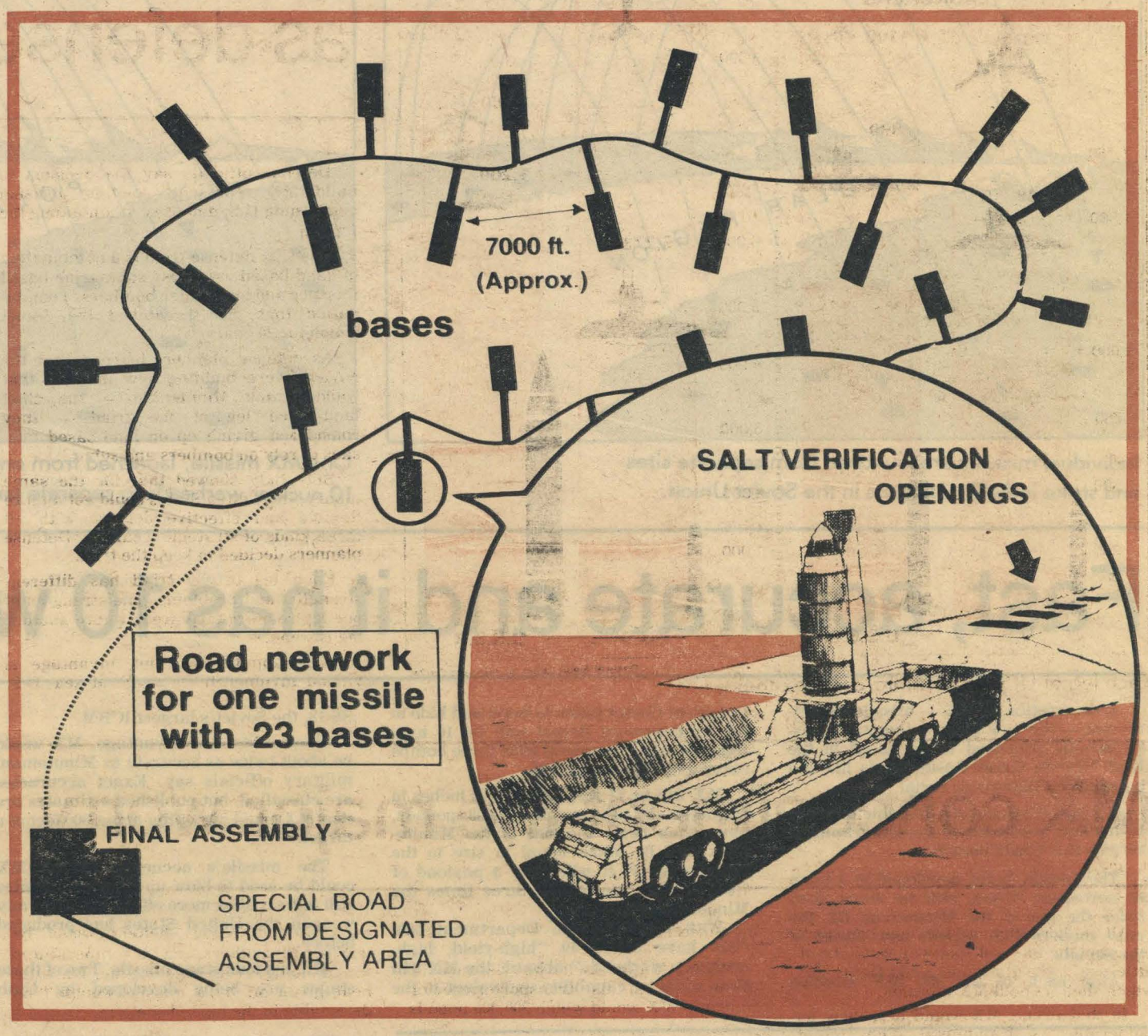
At one of the shelters — no observer would be able to tell which one — the missile and transporter-erector-launcher would really be inserted.

For the shield to complete a circuit around the track and visit all 23 shelters would take about 12 hours. When the circuit was completed, one shelter would contain MX on its big transporter-erector-launcher. The other shelters would be empty. According to the Air Force, the Russians know which shelter had the missile.

If the Russians attacked MX, the United States might have 30 minutes or so warning. In that time, MX, on its transporter-erector-launcher could be directed by remote control to dash out of one shelter and scurry at 30 miles an hour to another shelter, reaching cover before the Soviet missiles could arrive.

The Air Force says that even if the Soviets could discern which shelter held the missile, they could not be certain of destroying MX unless they destroyed all the shelters, or unless they could watch for the dashing transporter-erector-launcher, and redirect their missile in flight — something they can't do now.

If the United States were afraid the Russians might attack any moment, some of the missiles on their transporter-erector-launchers could be put in constant motion around the racetracks, then dash to a nearby shelter when warning was received of an attack. Thus, MX would use mobility to survive.



Of all the plans for a new missile, only racetrack combines protection, hiding and mobility, says the Air Force.

In addition, racetrack is designed to show the Russians that there is only one missile in each complex of 23 shelters.

Defense officials want the Russians to know how many MX missiles there are so they can know the United States isn/t cheating on arms control agreements.

Even while they build more weapons, the United States and the Soviet Union negotiate agreements to limit their weapons. More than any other U.S. weapon, MX has been planned with arms-control agreements in mind.

The size of the missile was determined in part by the SALT II agreement, which the president concluded with the Russians in 1979. MX would be the largest missile permitted to the United States under that agreement.

The decision to put each MX on its own launch machine was made partly to satisfy SALT. The U.S. Minuteman missile is launched from a silo in the ground, and the Air Force considered silos for MX. But SALT limits the number of launchers permitted each side to 2,250.

Each Minuteman silo counts as one launcher. Paul Warnke, a former U.S. SALT negotiator, notes that the rule for counting launchers is "if it looks like a launcher, it counts as a launcher."

If MX silos resembled Minuteman silos, all would be counted as launchers, even the empty ones. By mounting 200 MX missiles on 200 launchers hidden among 4,600 shelters, the United States would need to count only the 200 launchers against the SALT limit.

SALT II specifically allows each side to build one new land-based missile, and U.S. planners point to that clause as authorizing MX.

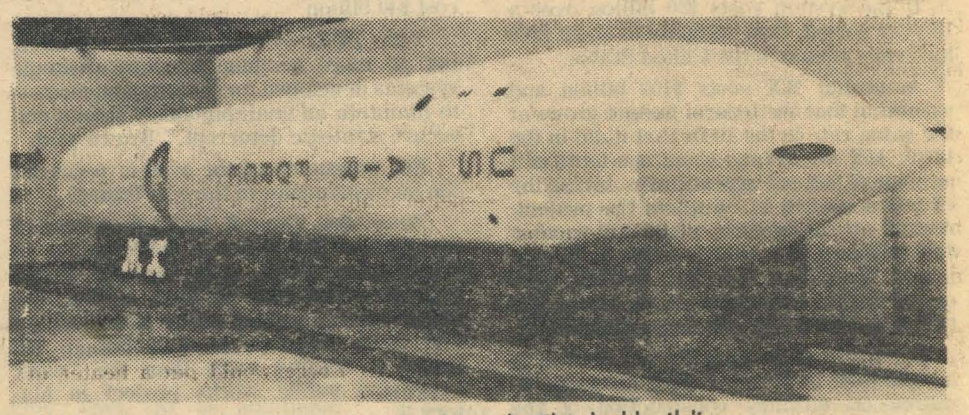
For arms-control agreements to work, each side must be able to satisfy itself that the other isn't getting an advantage by cheating. The United States and the Soviet Union check up on each other by what diplomats call "national technical means," a way of saying spy satellites.

The Russians might worry that the United States was cheating with MX by keeping extra missiles secretly in the supposedly empty shelters. MX is designed to calm those worries.

The missile and launcher would be delivered to the final assembly area in pieces and assembled partly in the open so Russian spy satellites could watch from overhead. The transporter-erector-launcher would be too big to travel ordinary roads and couldn't travel across the desert. By watching the assembly areas, the Russians could count all of them.

Before the assembled missile and launcher could enter the racetrack, a blockading pile of dirt would have to be removed from the road. After the missile and launcher were on the racetrack, the pile would be replaced.

To remove and replace the pile would take time, so the Russians would be assured the United States hadn't quickly sneaked extra missiles and launchers onto the racetrack while the Soviets weren't looking.



A full-size model of MX is berthed inside Thiokol building.

If not the MX missile, what then? . . .

■ *Critics of President Carter's plan to put MX missiles around racetracks in Utah and Nevada have no shortage of alternative plans.*

The competing ideas range from small modifications to whole new systems, or even getting by with no new weapons. Here is a menu of alternative ideas with some of their advantages and disadvantages:

Loading dock plan trims $2.2 billion

The Air Force is tinkering with MX, and officers say privately that one important change — putting the missile on a loading dock — is likely.

The loading dock would be the smallest change of any of those proposed. It would trim about $2.2 billion from the estimated cost of MX, but would reduce the mobility of the missile.

In the present plan, the missile would be parked in a shelter on its huge transporter-erector-launcher, ready to dash out of the shelter and flee to another shelter on command.

If the loading-dock plan were adopted, the missile would sit in the shelter in a cannister on a loading dock. Besides the missile, the cannister would contain communications gear and other paraphernalia needed to launch MX.

The missile would still be shuffled between 23 shelters arranged around a racetrack road.

A special transporter would extract MX from one shelter, hide the missile in transit, visit all the shelters around the track, and secretly insert the MX into one of the shelters.

Under the present plan, the rig that would carry MX would stay with it in the shelter. Under the loading-dock plan, the rig would return to a separate garage.

The loading-dock carrier could be smaller and simpler. The shelters would also be smaller. No special shield vehicle would be needed to hide the missile.

To fire MX, the loading dock would stick out the door of the shelter, the cannister would be pulled upright, and the missile would be launched.

At the office of Utah Gov. Scott M. Matheson, the loading dock is called the mausoleum plan. The shelter looks like a crypt, and MX would be moved in and out like a body on a slab.

Build silos for MXs instead of shelters

Some critics of President Carter say MX could be built more cheaply and could offer more defense in silos like Minuteman missiles instead of in horizontal shelters.

In a recent letter to the White House, Utah Sens. Jake Garn and Orrin Hatch, and Nevada Sens. Howard Cannon and Paul Laxalt urged Carter to reconsider putting MX in silos.

Silos were the Air Force's first choice for MX in 1978 and early 1979.

Silos would be cheaper. The Air Force says MX could be built for $31.5 billion in silos rather than $33.8 billion in the plan the president favors.

A silo in the ground offers better protection to a missile than a shelter on top of the ground.

Even in silos, MX would be vulnerable to accurate Soviet missiles, as is Minuteman. So the Air Force would build many silos for each missile, as it now proposes to build many shelters. Because they are more protective, silos could be built closer than could shelters, so MX would use less land.

Garn believes more money might be saved if silos were not arranged around closed racetracks, but were put in a grid pattern. A grid would require fewer miles of connecting road.

Administration officials raise two objections to using silos for MX.

Silos would make MX less mobile, Air Force Lt. Gen. Kelly Burke notes. To shuffle a missile around a racetrack of silos would require 48 hours, while 12 hours would be needed to shuffle the missiles among horizontal shelters.

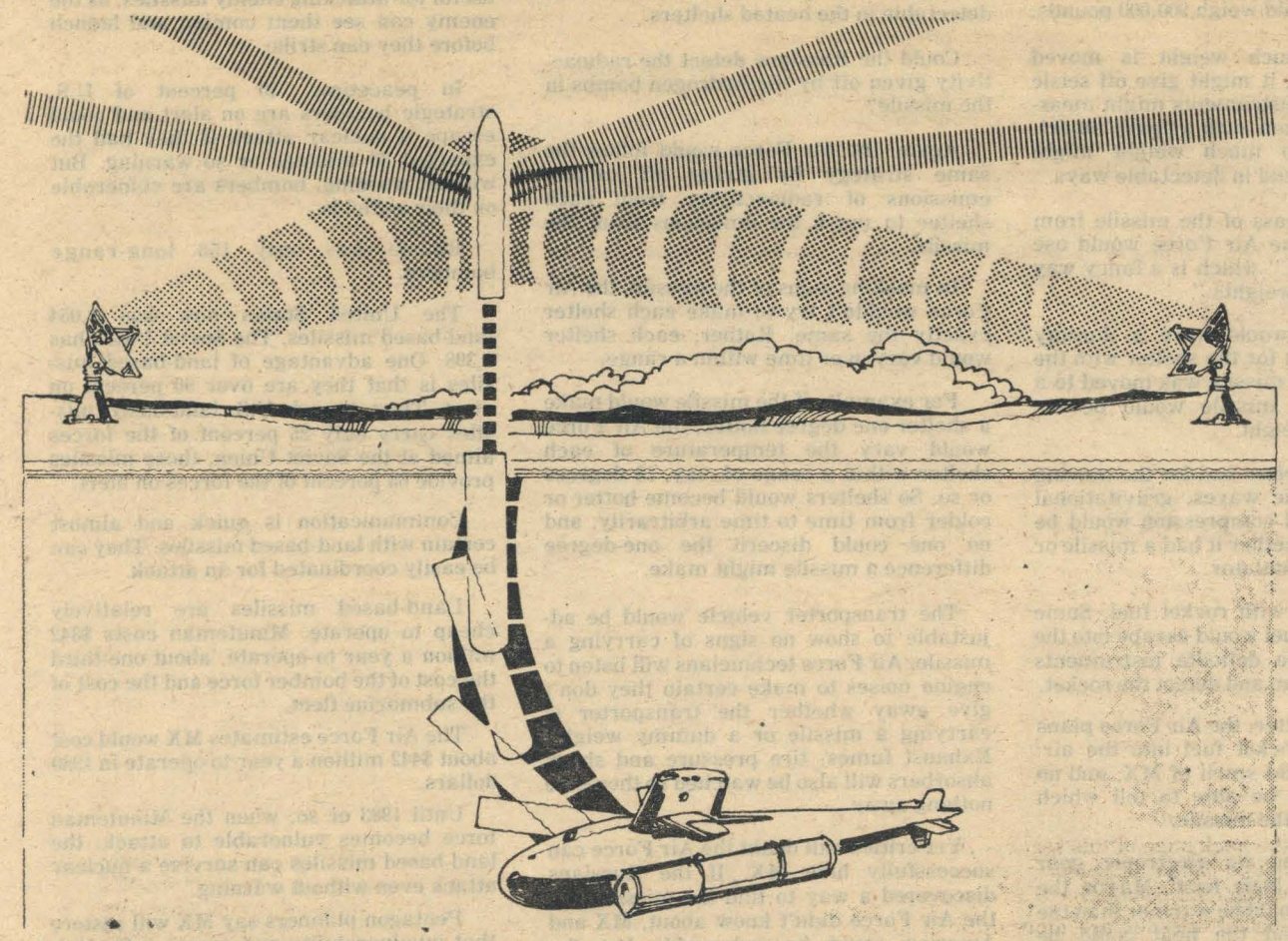
The second objection to silos is that they would raise problems for arms control, especially if they were arranged in a grid. Spy satellites can't peer into silos to see if a missile is in them. If the United States dispersed 200 missiles among 4,600 silos, the Soviet Union wouldn't be able to tell for certain that any silos were empty.

The Soviets would suspect the United States of violating the SALT agreements by hiding extra missiles in the empty shelters.

If many silos were arranged in a grid, the United States should invite them to come and look into the silos for themselves.

Garn says that to reassure the Soviets, the United States should invite them to come into and look the silos for themselves.

The Soviets have rejected such on-site inspection proposals in the past. If the Soviets built a grid of silos to hide their missiles, they might not allow the United States to come and inspect it.



The SUM proposal calls for the missile cylinder to float to the ocean's surface. Missile would then be launched and guided by earth and satellite signals.

Launch-on-attack calls for a quick decision

America's vulnerable Minuteman missiles could escape a Russian surprise attack by firing before the Russian missiles arrived to destroy them.

This plan to fire quickly is called "launch-on-attack."

If the Russians attacked by surprise, U.S. spy satellites would almost certainly detect the heat from their engines and send the information to the United States. For a rocket to fly from Russia to the United States takes about 30 minutes. By the time the warning was confirmed and the president notified, the president might have 10 or 15 minutes to decide to fire Minuteman before the Russian rockets struck.

Old Soviet missiles were not accurate enough to destroy Minuteman missiles in protective silos, so the United States carefully avoided a policy of launch-on-attack for fear a nuclear war might start by mistake.

The satellites or communication gear might malfunction and give a false warning. The president might make a bad decision in such a short time. Millions of Russians — and then millions of Americans — might die by accident.

Now that the Minuteman missiles are becoming vulnerable to new, accurate Soviet missiles, some analysts are advocating a policy of launch-on-attack as a substitute for MX.

Launch-on-attack would be cheaper than MX.

Dr. Richard Garwin, a Harvard professor of public policy, has devised a plan that would use satellites and, perhaps, ground sensors in America that would detect the first Russian bombs and would launch Minuteman on attack.

In Garwin's plan, the decision to launch part of the Minuteman missiles would be made by a computer, though the president or some other official could stop the computer from firing the missiles.

Most of the missiles fired at Russia would be launched unarmed, that is, they would not proceed to their targets unless the missile received a radio signal in flight ordering it to proceed. This would give the president a few " extra minutes to make his final decision on the attack.

If the Russians knew some American missiles would return their attack almost automatically, they would be deterred from a surprise attack, Garwin argues.

Critics of this plan, such as Jeremy Stone of the American Federation of Scientists, say the plan would put nuclear war on a "hair trigger."

Use ABMs to defend the Minuteman silos

Instead of building MX, the United States could build anti-ballistic missiles to defend Minuteman silos.

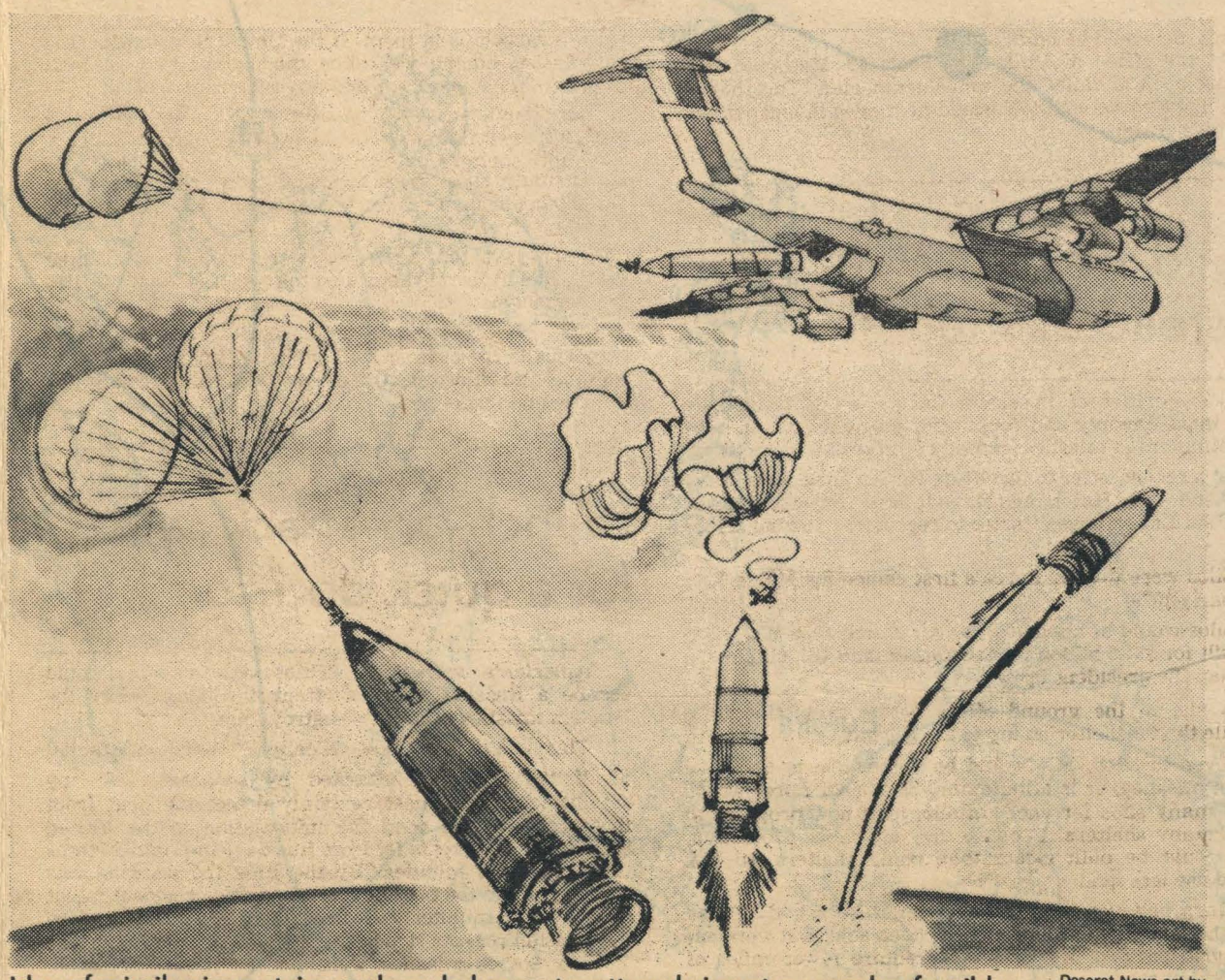
The ABMs could destroy the Russian missiles as they flew to attack the Minuteman silos.

The United States and the Soviet Union have signed a treaty that forbids most anti-ballistic missiles. Some ABM advocates say the United States could negotiate through that problem.

For example, physicists Bernard T. Feld and Kosta Tsipis wrote in Scientific American:

"The installation of local silo defenses, after prior

. . . Critics have variety of alternatives



Idea of missiles in containers aboard planes at scattered airports proved unfeasible. Deseret News art by Calvin Grondahl

discussions with the USSR aimed at maintaining the ABM treaty unchallenged, would increase the actual and perceived security of the Minuteman force, decrease crisis instability, and minimize still further the probability of a large-scale counterforce nuclear exchange."

When the treaty banning anti-ballistic missiles was agreed to in 1970, proponents of the treaty said ABMs wouldn't work very well anyway. The attacking side could send over more missiles. An anti-ballistic missile might get the first missiles, but after the ABMs were exhausted, later missiles would destroy the target.

If both sides built anti-ballistic missiles, both sides would have to build more offensive missiles to get through the ABM defense. Both sides would spend more money and neither would gain.

Not all of the objections that apply to ABM defense of cities apply to ABM defense of missiles, proponents argue. An ABM defense of Minuteman could save the missiles long enough to allow them to be fired before they were destroyed.

If MX is built and the Russians try to overwhelm the weapon by building huge numbers of new missiles and bombs, the United States would consider protecting MX with ABMs.

Deputy Defense Secretary William J. Perry has said ABMs could be built to shoot down only the bomb headed for the MX shelter with the missile in it. Other bombs would be ignored.

That would save money for the Defense Department, but it could be hard on Utah and Nevada.

Containerized missiles rejected for 3 reasons

The Pentagon considered and rejected a large number of ways to hide or move a new missile so it would be safe from attack.

For a while, the Air Force was enthusiastic about putting the missile in a canister and putting the cannisters on airplanes. The planes would have been scattered at airports — both civilian and military — through the Midwest.

On warning of attack, each plane would take off and, on orders, would eject the canister with a parachute, and the missile would fire from the canister.

The plan was rejected for three reasons.

First, the planes loaded with hydrogen bombs would have to fly in and out of many public airports. Though the possibility of accidents would be very small, the plan would generate fear and political opposition.

Second, the rising cost of fuel would have made the operation too expensive.

Third, the planes might have been vulnerable to a sudden barrage of Soviet missiles exploding bombs in the air and pinning the planes to the ground.

Besides the airborne plan, the Pentagon thought of putting the missiles on railway cars and shuttled around the nation's rail system. Against that plan, fears were raised that terrorists might steal one of the missiles and its bombs.

The Air Force also built and tested an underground trench. They planned to move MX on rails along a series of trenches that would hide the missile's location.

Using trenches would have forced the Air Force to close off far more land than with racetracks. And the tests showed that blast effects of a hydrogen bomb would be channeled down the trench, destroying MX, even if the Soviets didn't know its exact location.

Attach MX missiles to swarm of small subs

The MX missiles could be moved out to sea attached to 100 or so small submarines.

That plan is being promoted by a group of defense experts who aren't employed by government. The 100 or so subs would carry the missiles in U.S. coastal waters under a plan called the Shallow Underwater Mobile system, SUM for short.

On the back page of this section, Dr. Richard Garwin, an originator of the SUM idea, argues that it is a better plan than the land-based race track proposal.

Sea-based missiles are more difficult to attack than land-based missiles, SUM backers say.

Instead of building more big nuclear-powered subs than already planned, SUM supporters say the United States should build cheap little conventionally powered subs.

The MX missile could be put in a watertight cannister, and two or three of them could be attached outside the hull of a small sub. To fire, the cannister would detach from the hull, rise to the surface and launch the missiles.

The big subs are fast and can stay underwater for months. SUM subs would rely on their large numbers and on staying close to U.S. shores to survive.

SUM backers say that finding the small subs while they cruised underwater would be difficult. To destroy the system, the Soviets would have to find almost all of the subs at once and attack them all at once, an insuperable problem.

Sidney Drell, a physics professor at Stanford University and a defense consultant, says the racetrack relies on deception. The United States, with its open society, is not good at deception. That's the Soviet strength.

SUM backers say their idea would be cheaper than racetrack and could be ready for action sooner. The Navy strongly disagrees on both counts.

Proponents of SUM say that if Russia attacked U.S. nuclear forces, damage to Americans would be much less if the bombs exploded off the coasts.

Disperse missiles outside Utah, Nevada

Increasingly, Utah and Nevada residents are asking the Air Force to split up MX and put some of the 200 missiles outside the Great Basin.

Nevada Gov. Robert List recently told a congressional committee that he wants Nevada's share of MX reduced. "I don't care if it costs $10 billion."

As planned, List said, MX is too big for Nevada. "This project will take our land, condemn our water and confiscate our workforce."

Utah Gov. Scott M. Matheson has also urged Congress to pressure the Air Force into considering dividing MX among more locations.

Dispersing MX bases would cost more money.

Air Force Undersecretary Antonia Chayes has testified that dividing MX among three locations — two besides the Utah-Nevada site —would raise the price of the missile by $7 billion — that's in 1980 dollars. As inflation drives up the cost of MX, the cost of dispersion would rise, too.

But dispersing the missile to one additional location might not cost so much.

The main cost in dividing up MX would be that additional air bases, depots and support facilities would have to be be built for the people and equipment that would operate the missile.

The Air Force is already planning to build two bases, one in Utah and one in Nevada. Ken Olson, Utah MX coordinator, asks why one of those bases couldn't be put at another location for the missile. Then the Air Force would still build only two bases, and the costs of dispersion would be lessened.

Areas the Air Force has considered for MX include parts of Arizona, New Mexico, Texas, Wyoming, Kansas and Nebraska. The Great Basin remains the favorite prospect of the Air Force. "Any other site would be such a distant, distant second that I'm sure no matter how much we investigate, the Great Basin will still be our No. 1 choice," said Brig. Gen. Guy Hecker, special assistant for MX to the secretary of the Air Force.

Dispersion would raise some problems with controlling the missiles. One central command must be able to communicate quickly and surely with all the missiles even during an atomic attack. Scattering MX in more than one location would make that task harder.

But it still could be accomplished. Minuteman missiles are dispersed across six states, and the Air Force says they could still be effectively coordinated in an attack.

Dispersion would also offer a small strategic advantage. By exploding bombs in the air over the MX site, the Russians could pin the missiles in their silos. The pin couldn't last forever; eventually, the missiles could fire.

Scattering the missiles would make it harder to pin them down.

Residents worried about MX effects

Across the Great Basin, people are worrying about what MX might do to their towns, their work and their way of life.

"I think the Air Force is asking too much of the people of Utah and Nevada," said Max Williams, a county commissioner in Juab County, Utah. "I think they're asking us to sacrifice too much."

"MX is so big, people aren't sure they can handle it," said Frank Hulse, commissioner of Lincoln County, Nev.

"I just wish we didn't have to have those kinds of weapons," said Tom Horllacher, who owns a grocery store in Pioche, Nev.

Most worries of people who would live closest to MX can be summarized in three questions: How will MX affect the land? Will MX consume too much scarce water? How will MX affect our way of life?

MX is worrisome in part because of the enormous size of the project. It would be 2.5 times the size of the Alaska pipeline. It may be the biggest public works project in U.S. history.

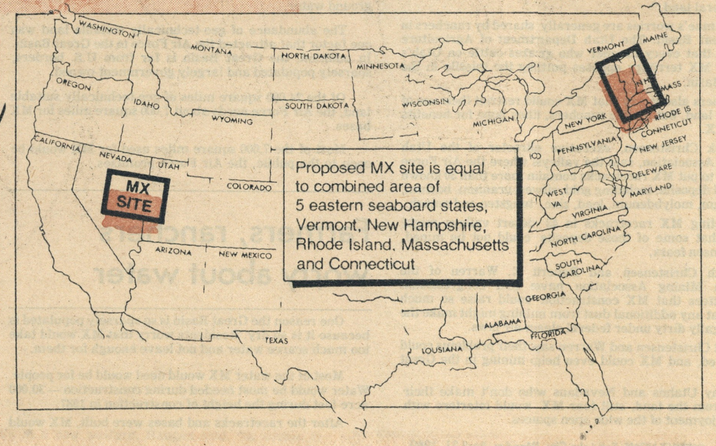
To build the project would require 12,000 miles of road, twice the amount of concrete used in Hoover dam, 1.6 million tons off steel, 86 million tons of gravel and 5.6 million tons of sand.

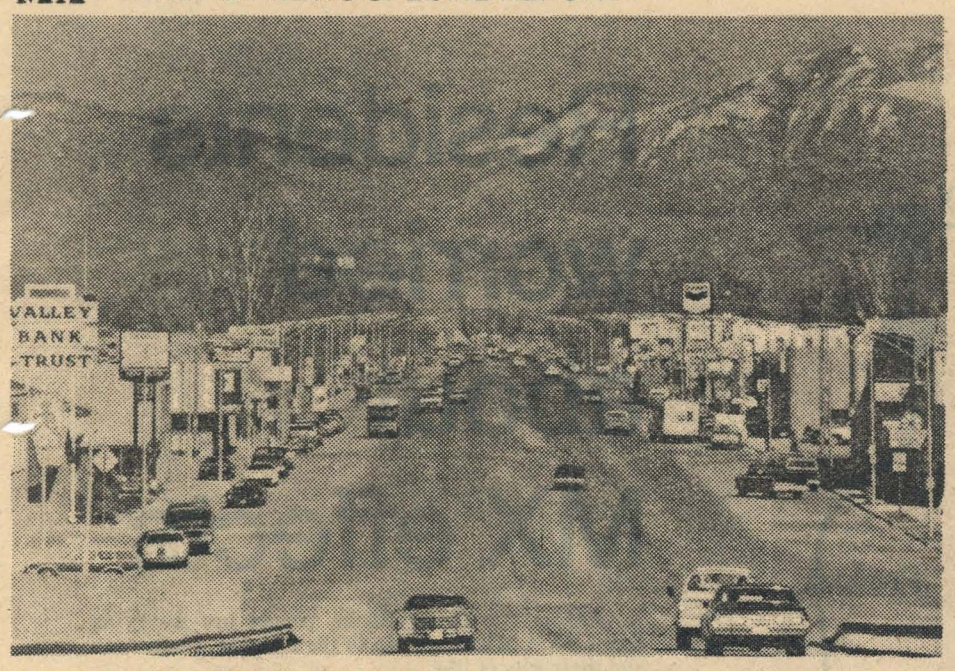
At the height of construction, MX would require about as many construction workers as the number of people who now live in the MX area.

Permanent population increase would nearly triple the number of people who now live in the sparsely populated deserts

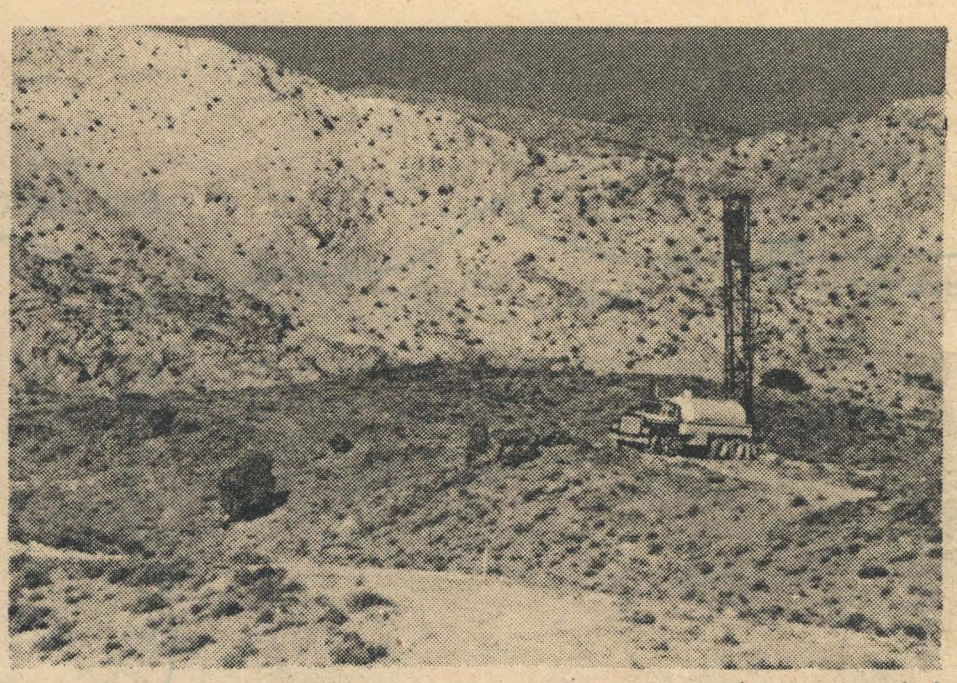
In the following pages, the Deseret News reports on fears for land and water. Two other stories describe possible effects on the desert lifestyle. One story notes the unhappy experience of western boom towns, and the other reports on the happier experience with the Minuteman missile.

Proposed MX sites stretch over large part of Nevada and Utah. Map at left shows MX missile siting in detail.





Towns like Delta face influx of construction and military workers.



Mining operations in Great Basin areas may be interrupted, even curtailed.

No one knows what the MX will bring

Residents live on isles in sea of federal land

Great Basin residents live on islands in a sea of federal land.

More than 90 percent of the 31,000-square-mile area where the Air Force intends to put MX is owned by the federal government.

Like other island-dwellers, the residents of the Great Basin use the sea around them.

The Bureau of Land Management, which administers most of the federal land, now allows local residents to use the land — for grazing, mining, hunting, gathering firewood, camping and riding jeeps and motorcycles.

Great Basin residents fear MX may restrict their use of government land.

"If they took away our grazing mights, most ranchers would go out of business," said Frank Delmue, a rancher in Lincoln County, Nev.

Delmue owns about 1,000 acres where he grazes 200 head of cattle. He grazes another 300 head on government land.

"Most of the ranches in this area have been built up around grazing on federal land," Delmue said. "You couldn't do it on an economical basis if you couldn't use the federal land."

Delmue's worries are generally shared by ranchers in the Great Basin. The Utah Department of Agriculture reports that every rancher who grazes cattle on Utah's part of MX territory opposes putting the missile in the Great Basin.

Miners also worry that MX could restrict their use of federal land, but, unlike ranchers, they hope for benefits from MX.

Jack Christensen, executive director of the Utah Mining Association, said the valleys where the Air Force intends to put MX racetracks contain more than 30 known mineral deposits, including gold, silver, uranium, barium, beryllium, molybdenum, lead, zinc, tungsten and potash.

Putting MX racetracks in 43 desert valleys might mean that some of those deposits could not be mined, Christensen fears.

Both Christensen and Robert E. Warren of the Nevada Mining Association have told congressional committees that MX construction could raise so much dust that any additional dust from mining might make the air illegally dirty under federal clean-air laws.

But Christensen and Warren say their problems could be solved, and MX could even help mining in the Great Basin.

Many Utahns and Nevadans who don't make their living from the land, still fear MX would interfere with their enjoyment of the wide open spaces.

"It's going to screw up the hunting and fishing," said Chuck Mocnik, custodian of the civic center in Tonopah, Nev.

Mocnik said he fishes on nearby Silver Creek and up Peavine Canyon. "I saw a map, and Tonopah will be completely surrounded by MX bases." He fears he won't be able to cross the racetracks to reach his favorite fishing holes.

Mocnik's fears are widely shared. "People around here are worried that the land will be closed so they can't gather pine nuts, hunt deer or cut firewood," said Frank Hulse, a commissioner of Lincoln County, Nev.

Environmentalists say the construction of MX and the people that it brings would drive game from the desert valleys. Utah Gov. Scott M. Matheson told Congress, "The Great Basin Desert is probably one of the most fragile ecosystems to be found anywhere within the continental United States. This portion of our environmental heritage will cease to exist if MX is deployed."

The Air Force insists that most fears that MX would destroy or damage or restrict the use of federal land are unfounded.

Within the boundaries of the MX project would be about 31,000 square miles of land. MX would not use more than 2 percent of any square mile of that land for roads and shelters, according to Air Force Lt. Gen. Kelly Burke.

About 7,000 square miles within the MX area are mountains or towns and couldn't be used for MX bases. That leaves 24,000 square miles of land that the Air Force says is geo-technically suitable. That means the land is not steep and at least 50 feet of topsoil cover bedrock or ground water.

The abundance of geo-technically suitable land was one factor that attracted the Air Force to the Great Basin. In addition, the Great Basin is far from U.S. borders, sparsely populated and largely government-owned.

Of the 24,000 square miles of geo-technically suitable land, the Air Force needs about 7,000 square miles for MX bases.

Most of the 7,000 square miles used for MX would be open to the public, the Air Force promises.

Farmers, ranchers worry about water

One reason the Great Basin is so sparsely populated is because it is so dry. Residents worry that MX would take too much scarce water and not leave enough for them.

Most of the water MX would need would be for people. Water would be most needed during construction — 30,000 acre-feet during the height of construction in 1987.

After the racetracks and bases were built, MX would require only enough water for those who operate the missile system, plus their families, or about 13,000 acre-feet each year, according to Air Force estimates.

Compared with other big projects, MX wouldn't need a lot of water. At the height of construction, MX would need only about two-thirds the amount of water needed in a normal year by the Intermountain Power Project, a world's largest power plant, scheduled to be built in the Mx area.

After being built, the MX would use about the same amount of water as that used by the 12 golf courses in greater Las Vegas.

"There is no other way to use water that uses only 13,000 acre-feet a year and provides 14,000 baseline jobs," Air Force Lt. Gen. Kelly Burke has said.

To reassure farmers and ranchers, the Air Force and President Carter have promised to abide by state water laws. Western water is often governed by both state and federal laws, and sometimes the two conflict.

Ranchers and farmers hold their water rights under state law that provides "first in time, first in right." In effect, the federal government has promised to take its place at the end of the line to get water for MX.

The Air Force drilled wells in six valleys in the Great Basin and found water in all six. Air Force engineers said they are confident there would be enough ground water for MX, though the cost of pumping water up through wells will be higher than prices usually paid for water in the Great Basin.

Dee Hansen, Utah's state engineer, agrees that MX water problems could be solved. State surveys confirm Air Force findings that unused ground water lies in some of the desert valleys.

Influx of cash, people would be explosive

The greatest worry of those who would live near MX is that it would ruin communities and change the way they live.

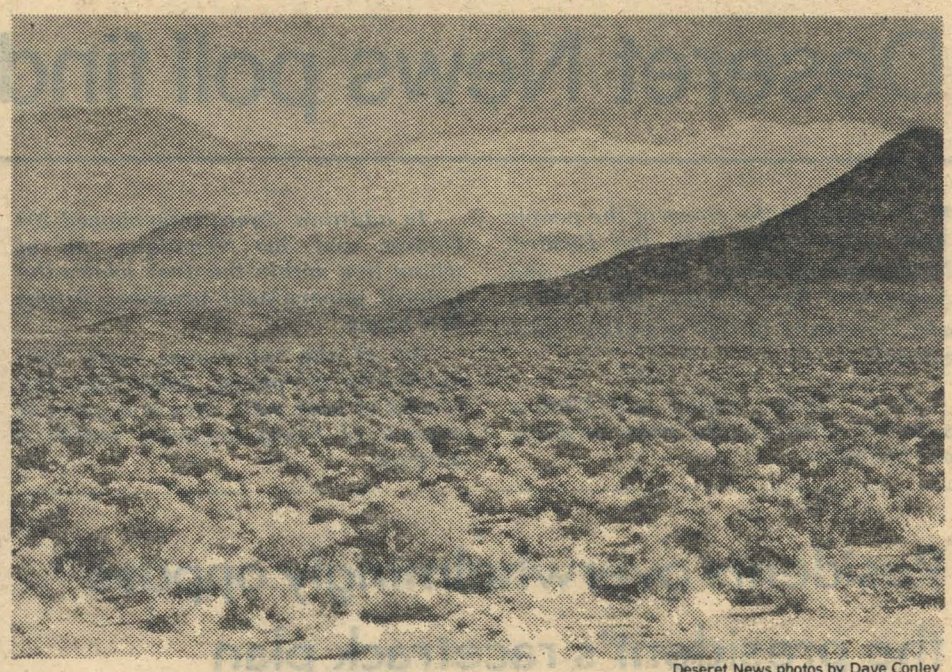
"We're mostly against MX in Beaver," said Robert Christianson, mayor of the Utah town. "It would ruin our lifestyle. That's why we live in Beaver, because we like the lifestyle."

In late 1979, the Ely Daily Record asked its readers if they wanted MX, and 83 percent of those who replied said they didn't. The main reason given was: "It will ruin our lifestyle, destroy the small-town atmosphere," according to Mark Picker, a reporter on the Daily Record.

In January, the Air Force estimated that 28,000 workers would be needed to build MX. At the height of construction, in 1986-87, 105,000 newcomers would be lured by the project to the Great Basin and its surroundings.

Recently, Air Force generals have said the original work-force estimates were too high. Air Force Lt. Gen.

Ranchers fear MX project will deny them access to grazing areas.



Deseret News photos by Dave Conley

The scenic beauty of Great Basin valleys may well be irreparably changed.

Kelly Burke said as few as 12,000 workers may be needed to construct MX.

After the racetracks and bases were completed, about 14,000 airmen and civilians would be needed to operate MX. The Air Force estimates the total permanent increase in population in the Great Basin at 55,000.

Besides new people, there would be new money.

"You'll see such a fantastic cash flow. There'll be so much money in your area in such a short time, you'll just shake your head. Overnight there'll be millions and millions of dollars change hands," said Glenn Jarstadt, mayor of Bremerton, Wash.

Bremerton is the largest town in Kitsap County, where the Navy recently built a $1 billion Trident submarine base. Based on his experience, Jarstadt predicted new wealth for the communities that become hosts to MX.

To build the shelters, roads and bases, MX would pump about $8 billion in 1980 dollars into the Great Basin.

Some towns need the jobs MX would bring. "Only about one 10 of our young people that graduates from high school can stay here and find work," said Wesley Holt, who owns Gottfredson's Department Store in Calliente, Nev.

Other young people in Lincoln County have to leave home to find work. "If we could have enough jobs so that every young person could choose to stay here or go away, this would be wonderful. This would be what we hoped for," Holt said.

Defense work brings good jobs, according to Mayor Jarstadt. "The federal government is an excellent employer. The quality of the employe who comes in with a federal job is good. It's a nice steady payroll. In fact, we have the most consistent payroll of any area in the state of Washington."

But the rapid influx of new money and people brings problems, too. Sociologists have studied the Western towns that grew explosively because of energy developments or government projects. Their findings are bleak.

"The energy boom town in the western United States is apt to be a bad place to live. It's apt to be a bad place to do business," said sociologist John S. Gilmore after he had studied Green River and Rock Springs, Wyo., two towns that boomed on coal and power plants in the early 1970s.

MX would bring boom towns, perhaps on a scale bigger than the West has seen before.

Dr. Ronald L. Little, a professor of sociology at Utah State University, has spent years studying Western boom towns. But he says, "MX is almost beyond my ability to comprehend. That's an enormous project. It will have enormous impact."

Typically, social problems have multiplied in energy boom towns. Dr. Charles Cortese, a professor of sociology at University of Denver, points to Craig, Colo.

Between November 1973 and December 1976, the population of Craig rose 80 percent, Cortese said. Crimes against property went up 222 percent; crimes against persons rose 900 percent. Drug abuse increased more than 600 percent; child abuse went up 130 percent, and family disturbances rose more than 350 percent.

Boom towns can be hard on families.

Sociologist E. Kohrs studied Gillette, Wyo., and wrote about what he called a "Gillette Syndrome."

In Gillette, Kohrs found that, during the boom years, marriages exceeded divorces by 1.8 to 1. In the area surrounding Gillette, marriages exceeded divorces by 3.3 to 1, leading to the conclusion that divorce boomed along with the town.

Mayors say air bases improve communities

Chester Reiten, mayor of Minot, N.D., remembers 20 years ago when the Air Force first talked of bringing the Minuteman missile to the plains around his town.

"At that time there were some people saying, 'Gee, we don't want that thing here. You'll have a lot of crime and a lot of drugs, and this would happen and that would happen,' " Reiten recalls.

"Well, none of those things ever really happened," Reiten said.

"These people (Air Force people) turned out to be a fine part of our community. They take part in our Community Chest and our Boy Scouts. They've been excellent citizens."

MX wouldn't be the first missile the United States has built, and Utah and Nevada wouldn't be the first states to play host to land-based missiles.

Minuteman, built in the 1960s, has been spread across Montana, North Dakota, South Dakota, Wyoming, Colorado and Nebraska for more than a decade.

Minuteman has 1,000 missiles, compared with 200 planned for MX. For each Minuteman, there is one silo, a total of 1,000. For each MX there would be 23 shelters, a total of 4,600.

The Deseret News interviewed mayors of four towns near Minuteman bases on their experiences with the Air Force and the missile.

Reiten isn't the only mayor with good words for the Air Force. All of the mayors agreed that Minuteman has been good for their communities.All of the mayors say they are glad the missiles and the air bases are situated near their towns.

"I think almost everyone is glad we've got Minuteman. We wish they would enlarge it," said Art Norman, mayor of Knob Noster, Mo. Knob Noster is the town nearest Whitehurst Air Force Base and the center of a cluster of Minuteman missiles.

"We like our relationship with the military," said Mayor Don Erickson of Cheyenne, Wyo. Around Cheyenne and nearby Warren Air Force Base are 200 Minuteman silos, Erickson said.

"When the missile silos were first put in, there was somewhat of an uproar by ranchers," Erickson said. "I have not in my term as mayor heard a complaint about Minuteman from ranching," he added.

Gene Thayer, mayor of Great Falls, Mont., said of nearby Malstrom Air Force Base, which runs 150 Minuteman silos, "They're just good neighbors. I don't have anything negative to say about them."

Farmers and ranchers who live with Minuteman silos say there have been problems, but only minor ones.

Wendall Haugen, a farmer, who lives near Ryder, N.D., said a silo is located about a mile from his house and farm buildings.

"It's in a cow pasture, Haugen said. "A couple of times, the Air Force men who go out to check on the thing left the gate open, and the cows got out."

There were also some problems with drainage. "Us farm boys tried to tell them that water flows from the southeast on that piece of ground. But they didn't believe us. They built their dikes on the other side, and the first spring the hole filled up with water and they lost the missile."

When the Air Force corrected the drainage trouble, it backed water up into a bin of Haugen's and ruined some grain he was storing. "I hear the Air Force will compensate you for damage from something like that, but I never applied for any compensation," Haugen said.

Haugen is active in local farmers organizations. "When farmers around here talk about the missile, all of them say they don't think the thing will work," Haugen said. "But that isn't our responsibility."

He said farmers complain that Air Force people have broken into homes and outbuildings. However, no airman has ever been convicted of such a crime near Ryder, Haugen noted. "I think they get criticized for a lot of things they never did," he said.

In all, Haugen said, "We get along real good. The problems over 20 years of being near Minuteman have been small."

The main benefit the mayors see from Minuteman is the money.

"Without the base, (neighboring Whitehurst Air Force Base) I don't think this town would still be here," Norman said. "It's our only thing that really keeps our economy going."

Reiten said Minot Air Force Base "adds another leg to our economy. Minot has something to fall back on during years of crop failure or drought."

Besides the money, the mayors said the Air Force people enrich a small community.

"There are a lot of military people who are educated with their master's degrees. They really add to our town," Norman said.

Erickson said the Air Force makes Cheyenne more "cosmopolitain."

Utahns and Nevadans fear MX would make them the target of a Russian nuclear attack. How does that affect people who live near Minuteman?

"I suppose some of our citizens realize that we'd be a high-priority target," Erickson said. "I suppose we've just had to learn to live with that threat the way all Americans must learn to live with the possibility of nuclear holocaust."

Thayer said residents of Great Falls believe that in a nuclear war, "destruction would be so widespread that 90 percent of us would be dead even if the base wasn't here."

Mayors say the bases bring additional crime, but the problem isn't serious.

"The caliber of the SAC (Strategic Air Command) people is such that with 5,000 Air Force people here, we don't have any more of a crime problem than if we had 5,000 ordinary citizens," said Erickson of Cheyenne.

"Anytime you have several thousand military, you have unruliness," said Norman of Knob Noster. He added that the proximity of the air base meant "a little more drinking" in Knob Noster than there would be otherwise.

Reiten said his constituents' support isn't based on the benefits and drawbacks the air base brings to Minot.

"We are patriotic people," Reiten said. "We realize you need the military if you're going to stay a free people. We want to do our share."

Deseret News poll finds strong opposition

■ *To discover the views of the people most affected by MX, the Deseret News commissioned Dan Jones and Associates to interview 800 Utahns and Nevadans in two scientific opinion polls.*

First, Jones polled 400 Utahns selected scientifically from throughout the state.

In addition, Jones interviewed 200 Utahns and 200 Nevadans, all of whom live within the area where the federal government proposes to put MX bases.

All of the interviews were conducted by telephone. Jones said the results of both polls have a 95 percent chance of being accurate within 6 percent.

Residents overwhelmingly oppose the president's racetrack plan

Residents of the area where President Carter wants to put MX racetracks overwhelmingly oppose having the big missile for a neighbor.

The first scientific poll of the MX area, which straddles the Utah-Nevada border, shows that 46.2 percent of the residents strongly oppose the president's plan. Another 19.2 percent are somewhat opposed. Only 28.4 percent of respondents said they "strongly favor" or "somewhat favor" the plan to put MX in 4,600 bunkers around 200 racetracks in the desert valleys of Utah and Nevada.

Other findings of the poll were:

— The residents of the MX area don't trust what the government tells them about MX.

— Those polled tend to believe the opinions of Utah and Nevada residents will not influence the government's decision to locate MX in Utah and Nevada.

— Despite their opposition to MX, those polled believe the United States should spend more on defense.

— The main reason residents of the MX area oppose the project is the influx of newcomers MX would lure to the sparsely populated desert valleys. The objection raised next most frequently was that MX would use up too much land and water.

— Those who see benefits from MX believe it will help the local economy, create jobs and improve the national defense.

Within the MX area, opposition to the president's plan is much stronger than it is in Utah and Nevada as a whole.

A poll taken in January for the Reno Evening Gazette and the Nevada State Journal showed that 37 percent of Nevadans opposed MX and 35 percent favored the project.

A Deseret News poll taken in Utah at the same time as the poll of the MX area showed that 60.2 percent of Utahns oppose MX, while 31.5 percent favor it.

Within the MX area, 65.4 percent of respondents oppose the project, and only 28.4 percent favor it.

Statewide, public opinion in Utah is more strongly against MX than public opinion in Nevada. But within the MX area, Nevadans are more likely to oppose the project than are Utahns.

Among Nevadans in the MX area, 68 percent said they oppose MX, and 51.5 percent said they are strongly opposed. Across the border, 63 percent of the Utahns said they oppose the missile, and 41 percent said they are strongly opposed.

Opposition to MX tends to rise with education. Half of the college graduates polled said they strongly oppose the plan to put MX in their part of the country, while only 38.6 percent of those without a high school diploma expressed strong opposition.

More than 70 percent of Protestants and Catholics oppose MX. Mormons are 63 percent opposed, and 52 percent of those with no religion oppose MX.

Dislike of MX cuts across sex, age and politics. Men and women, adults of all ages, and Republicans, Democrats and

Question: From what you know or have heard, do you favor or oppose the Air Force plan for deployment of the MX Missile Project in the desert area of Utah and Nevada?

MX AREA	Strongly favor	Somewhat favor	Somewhat oppose	Strongly oppose	No opinion
TOTAL	11.2	17.2	19.2	46.2	6.0
POLITICAL PARTY					
Republican	10.7	15.3	22.9	45.0	6.1
Democrat	13.1	15.5	18.5	47.0	6.0
Independent	9.7	23.7	15.1	46.2	5.4
Other	.0	25.0	.0	50.0	25.0
EDUCATION					
Less H.S.	15.8	15.8	21.1	38.6	8.8
High school	8.7	19.3	20.7	46.0	5.3
Some Col./Bus.	11.9	15.7	18.7	47.8	6.0
College Grad.	12.1	17.2	15.5	50.0	5.2
RELIGION					
Catholic	18.2	2.3	18.2	52.3	9.1
Protestant	4.3	13.0	14.5	59.4	8.7
LDS	10.0	21.4	21.8	41.9	4.8
Other	14.8	18.5	29.6	33.3	3.7
None	24.1	17.2	3.4	48.3	6.9
AREA					
Southern Utah	11.0	22.0	22.0	41.0	4.0
Nevada	11.5	12.5	16.5	51.5	8.0

Opposition throughout Utah strong and growing

Question: From what you know or have heard, do you favor or oppose the Air Force plan for deployment of the MX Missile Project in the desert area of Utah and Nevada?

	Strongly favor	Somewhat favor	Somewhat oppose	Strongly oppose	No opinion
TOTAL	9.0	22.5	30.0	30.2	8.3
POLITICAL PARTY					
Republican	7.5	21.1	37.4	27.2	6.8
Democrat	17.3	27.6	17.3	27.6	10.2
Independent	5.6	19.7	31.0	36.6	7.0
Other	.0	25.0	50.0	.0	25.0
EDUCATION					
Less H.S.	14.3	17.9	32.1	21.4	14.3
High School	10.6	27.9	23.1	26.9	11.5
Some Col./Bus.	8.5	24.6	31.7	28.9	6.3
College Grad.	7.4	17.2	33.6	36.1	5.7
RELIGION					
Catholic	21.7	39.1	4.3	13.0	21.7
Protestant	5.7	22.9	25.7	40.0	5.7
LDS	8.3	23.3	34.0	27.4	6.9
Other	20.0	10.0	20.0	40.0	10.0
None	5.7	11.4	22.9	48.6	11.4
AREA					
Cache/Box Eld.	3.6	21.4	53.6	17.9	3.6
Weber	24.4	20.0	20.0	17.8	17.8
Davis	2.5	22.5	32.5	37.5	5.0
Salt Lake	8.2	21.6	25.1	37.4	7.6
Utah	5.6	33.3	35.2	22.2	3.7
So. Utah 1st	12.9	16.1	32.3	16.1	22.6
So. Utah 2nd	6.5	19.4	35.5	38.7	.0

■ *This chart and story show results from a poll of 400 Utahns scientifically selected from throughout the state.*

Throughout Utah, opposition to MX is strong and growing, according to a Deseret News poll.

More than 60 percent of a statewide sample of 400 Utahns said they were against the plan to put MX missiles in the desert area of Utah and Nevada.

The statewide poll was taken by Dan Jones and Associates in March at the same time as a separate poll of residents of the MX area.

The MX area poll was the first scientific sampling of opinion of that population. But earlier polls have been taken of statewide public opinion in Utah. Together with the Deseret News poll, they show a dramatic shift against the missile project.

In October 1979, when President Carter announced the plan, a Salt Lake Tribune poll showed 69 percent of Utahns were "not personally bothered" by the plan. By February 1980, a KSL-TV poll by Wasatch Opinion Research showed 55 percent of Utahns opposed MX.

The Deseret News poll shows public opinion in Utah continues to swing even further against the plan.

Statewide dislike of MX in Utah is not so strong as dislike in the region of Utah and Nevada where the project would be built. Utahns statewide are slightly less likely to oppose MX, and only about two-thirds as likely to oppose the project strongly as the residents of the MX area.

Though Utahns oppose MX, they are not opposed to national defense. The Deseret News poll showed that 72.5 percent of Utahns believe defense spending should be increased. Only 16 percent of Utahns want defense spending cut.

Utahns favor restoring registration for the draft by a majority of nearly 80 percent, the Deseret News poll showed.

Like residents of the MX area, Utahns are skeptical about government statements concerning MX. Of those polled, 43 percent said they distrusted government statements, 46.7 percent said they trusted what government said "somewhat." Only 5.7 percent place "A great deal" of trust in what government tells them about MX.

More than half of the Utahns polled statewide thought their opinions probably wouldn't matter when the government makes the final decision on the MX missile.

Nonetheless, Utahns in general are more likely to believe their opinions count than are the residents of the MX area, where over 70 percent of the sample thought the opinions of Utahns and Nevadans would not influence the final decision on MX.

Question: In your opinion, what would be the positive aspects of an MX Missile Project in the desert area of Utah and Nevada?

MX AREA	Economy	Jobs	Population growth	Security/ defense	Good area/ space	No advantages	Others	Don't know
TOTAL	14.2	14.0	3.8	14.0	5.2	40.7	.3	7.7
SEX								
Male	18.0	10.8	1.5	18.0	8.2	38.7	.5	4.1
Female	10.7	17.0	5.8	10.2	2.4	42.7	.0	11.2
AGE								
18-34	23.6	11.8	8.7	12.6	3.9	37.0	.0	2.4
35-49	9.4	17.9	1.9	15.1	8.5	35.8	.9	10.4
50+	10.2	13.2	1.2	14.4	4.2	46.7	.0	10.2
POLITICAL PARTY								
Republican	22.1	13.0	3.8	13.7	6.9	31.3	.8	8.4
Democrat	8.3	13.7	4.2	12.5	6.5	47.0	.0	7.7
Independent	14.0	17.2	2.2	15.1	1.1	43.0	.0	7.5
Other	.0	.0	.0	50.0	.0	50.0	.0	.0
EDUCATION								
Less H.S.	7.0	14.0	3.5	12.3	1.8	40.4	.0	21.1
High school	8.0	18.0	3.3	12.7	4.0	46.0	.0	8.0
Some Col./Bus.	24.6	10.4	4.5	12.7	6.7	37.3	.0	3.7
College Grad.	13.8	12.1	3.4	22.4	8.6	34.5	1.7	3.4
RELIGION								
Catholic	18.2	9.1	6.8	9.1	.0	54.5	.0	2.3
Protestant	18.8	4.3	2.9	10.1	4.3	50.7	.0	8.7
LDS	11.8	18.8	3.1	15.7	7.0	34.5	.4	8.7
Other	3.7	14.8	3.7	18.5	.0	48.1	.0	11.1
None	27.6	6.9	6.9	13.8	6.9	34.5	.0	3.4
AREA								
Southern Utah	13.0	17.0	3.0	19.5	7.0	32.0	.5	8.0
Nevada	15.5	11.0	4.5	8.5	3.5	49.5	.0	7.5

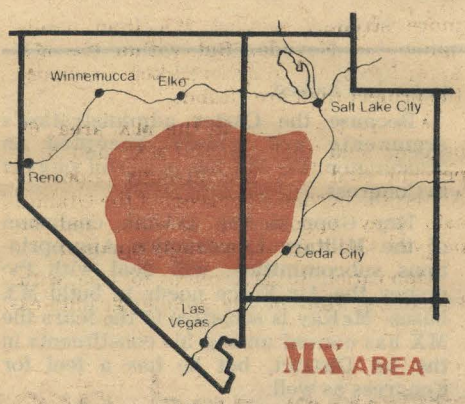
Question: In your opinion, what would be the negative aspects of an MX Missile Project in the desert area of Utah and Nevada?

MX AREA	Military target	Influx of people	Harm environment	Danger to people	Expensive	Use up water/ land	Gov't involvement	Poor system	other	None/ don't know
TOTAL	9.5	31.0	11.2	4.0	2.0	19.5	1.3	6.7	.8	14.0
SEX										
Male	9.3	33.0	9.8	2.1	3.1	19.6	1.5	10.3	.5	10.8
Female	9.7	29.1	12.6	5.8	1.0	19.4	1.0	3.4	1.0	17.0
AGE										
18-34	13.4	27.6	11.0	7.1	.0	24.4	2.4	3.1	1.6	9.4
35-49	9.4	36.8	11.3	.9	1.9	12.3	.9	10.4	.9	15.1
50+	6.6	29.9	11.4	3.6	20.4	.6	7.2	.0	16.8	
POLITICAL PARTY										
Republican	8.4	38.9	12.2	3.1	1.5	13.0	2.8	6.1	1.5	13.0
Democrat	8.3	25.6	7.7	4.8	2.4	27.4	1.2	7.1	.6	14.9
Independent	11.8	31.2	16.1	3.2	2.2	14.0	.0	6.5	.0	15.1
Other	50.0	25.0	.0	.0	.0	.0	.0	25.0	.0	.0
EDUCATION										
Less H.S.	8.8	17.5	10.5	1.8	1.8	22.8	1.8	7.0	1.8	26.3
High school	9.3	26.7	7.3	4.7	2.7	22.0	.0	7.3	.7	19.3
Some Col./Bus.	9.7	33.6	13.4	6.0	.7	18.7	2.2	6.0	.7	9.0
College grad.	10.3	50.0	17.2	.0	3.4	12.1	1.7	5.2	.0	.0
RELIGION										
Catholic	11.4	25.0	4.5	2.3	2.3	36.4	.0	9.0	.0	9.1
Protestant	5.8	24.6	14.5	2.9	.0	34.8	.0	7.2	.0	10.1
LDS	11.4	35.8	12.2	4.4	2.6	10.5	1.3	5.2	1.3	15.3
Other	3.7	25.9	3.7	3.7	3.7	18.5	3.7	11.1	.0	25.9
None	6.9	24.1	13.8	3.4	.0	31.0	3.4	6.9	.0	10.3
AREA										
Southern Utah	12.5	36.0	12.5	6.5	2.5	8.0	1.5	4.5	1.0	15.0
Nevada	6.5	26.0	10.0	1.5	1.5	31.0	1.0	9.0	.5	13.0

independents all oppose MX in roughly equal proportions.

The people who live in the MX area are not opposed to a strong defense. Increased defense spending is favored by 72.9 percent of the respondents to the poll. Only 11.5 percent favor a reduction in defense spending. More spending for defense drew strong support from all sub-groups polled.

Residents of the MX area oppose the project because they believe it would affect them, their livelihoods and their communities for the worse.



Question: Do you believe that the opinions of Utah/Nevada residents toward the development of the MX Missile System in Utah/Nevada will have an impact on whether the project is developed here?

MX AREA	Definitely will	Probably will	Probably will not	Definitely will not	Don't know
TOTAL	5.5	20.5	31.0	39.5	3.5
AREA					
Southern Utah	6.5	26.0	31.0	34.5	2.0
Nevada	4.5	15.0	31.0	44.5	5.0

48.5 pct. strongly distrust what the government says about MX

Residents of the MX area don't believe what the government tells them about MX, and they don't believe their opinions about the project will have much influence on government decisions.

A Deseret News poll shows that 48.5 percent of the residents in the MX area distrust what the government tells them about MX.

Another 42.2 percent said they trust government statements "somewhat." Only 7 percent place "a great deal" of trust in what government says about MX.

Analysis showed that 60 percent of those who trust the government strongly favor MX. In contrast, 67 percent of those who distrust the government strongly oppose MX.

That means that more than two-thirds of those who strongly oppose MX come from the 48 percent who distrust what the government tells them about the project. And about one-third of those who strongly favor MX come from the 7 percent who trust government.

Interviews outside the poll showed that bad experiences with government account for some of the distrust.

"We've had some trouble with government agencies around here," said Ray Neighbors, county manager of Nye County, Nev. "We don't always trust what the government tells us."

Dave Hamilton, Nye County planner, said the Air Force promised residents of Tonopah they could fish and hunt on the nearby Tonopah Test Range. But later, the Air Force fenced off the range, Hamilton said.

Pollsters said the people who distrust government seem to believe government withholds facts rather than tells lies. "Government has given us a little of the truth" or "They've told one-fourth of the truth" were typical comments, pollsters said.

Nevadans were more than 10 percent more likely to distrust government than were Utahns. But Nevadans were also more likely to say they had a great deal of trust in government statements. Utahns were more likely to say they trusted government "somewhat."

Not only do those polled distrust government, they do not believe government will respond to their views. The poll shows that 39.5 percent of residents of the MX area believe the opinions of Utahns and Nevadans "definitely will not" influence the government's decision to build MX in Utah and Nevada.

Another 31 percent think the opinions of Utahns and Nevadans "probably will not" affect the decision to put MX in Utah and Nevada.

Those who think the opinions of Utahns and Nevadans "probably will" influence the decision numbered 20.5 percent. Only 5.5 percent think the opinions of Utahns and Nevadans "definitely will" have an effect.

Question: From what you have heard or read, how much do you trust what the government tells you about the effectiveness and risks of the MX Missile Project?

MX AREA	Trust a great deal	Somewhat trust	Distrust	No opinion
TOTAL	7.0	42.2	48.5	2.2
AGE				
18-34	5.5	44.9	48.8	.8
35-49	4.7	50.0	42.5	2.8
50+	9.6	35.3	52.1	3.0
POLITICAL PARTY				
Republican	6.9	48.1	43.5	1.5
Democrat	8.3	38.7	50.6	2.4
Independent	5.4	41.9	49.5	3.2
Other	.0	50.0	50.0	.0
EDUCATION				
Less H.S.	10.5	31.6	50.9	7.0
High school	6.0	44.7	47.3	2.0
Some Col./Bus.	7.5	43.3	48.5	.7
College Grad.	5.2	43.1	50.0	1.7
RELIGION				
Catholic	6.8	27.3	73.6	2.3
Protestant	8.7	37.7	53.6	.0
LDS	5.7	48.0	43.2	3.1
Other	11.1	37.0	51.9	.0
None	10.3	34.5	51.7	3.4
AREA				
Southern Utah	3.5	52.0	42.0	2.5
Nevada	10.5	32.5	55.0	2.0

Govs. Scott Matheson of Utah and Robert List of Nevada want $1 million in federal funds to help study the impact MX will have on the 2 states.

There's a missile in Utah's future

By Gordon Eliot White
Deseret News Washington Bureau

WASHINGTON — There is a nuclear missile in the future for Utah and Nevada.

It will probably not be called MX. It may not have bases shaped like racetracks. There may not be 200 of them built in the two states.

But unless the Soviet Union plows up its own strategic weapons and plants daisies in the holes, the United States will almost certainly build a new land-based missile system during the next decade. Utah and Nevada are two places some of those weapons will go.

That conclusion was reached after more than two dozen interviews with congressmen, generals, governors, senators and staff members of the committees that, in large measure, will make the decisions on the next generation of nuclear weapons.

A new missile will be built because there is a general belief in Washington that the Soviet Union can destroy this country's existing Titan and Minuteman weapons.

The Trident and Polaris submarine missiles, and the nuclear weapons aboard the B-52 bomber fleet, are either too inaccurate or too potentially vulnerable to ensure the United States of destroying the Russian missile bases in the event of war.

Two threads ran consistently through all of this reporter's interviews and discussions, as well as through the public hearings on MX in recent weeks.

One was the belief that the Soviet Union is close to becoming powerful enough that its leaders could, under some circumstances, think they could win a nuclear war.

The other is the realization that the Russians are building up conventional forces that far exceed their self-defense needs.

Add in the Soviet willingness to risk invading a neighbor — Afghanistan — and there is real fear in Washington.

Some of the alarm over Russian abilities and intentions could be scare talk by the Pentagon. Without access to classified material and knowledge about its sources, it is all but impossible to know what the Soviets really can do. But the wide range of people who accept the basic facts of the Carter administration's gloomy strategic outlook tends to give it credence.

Sen. Edward M. Kennedy, D-Mass., for example, while reluctant to go ahead full-speed on MX, does not challenge the need for a new land-based missile. The other presidential challengers, who have been briefed on the Russian threat, are unwilling to make an issue of it.

The basic belief that the Russians have improved the accuracy of their nuclear weapons seems unassailable. Monitoring of Soviet missile tests indicates that they are approaching the accuracy the United States has achieved in recent years — accuracy good enough to make near-direct hits on all the present fixed U.S. missile silos.

Since this country has a national policy of accepting a Soviet first strike and only then firing retaliatory weapons, U.S. leaders must be sure enough American missiles can survive a Russian attack to do unacceptable damage to the Soviet Union.

In that case, a rational Soviet government would be deterred from starting a nuclear World War III. (The United States does not have a launch-on-warning policy, Defense Secretary Harold Brown said in recent hearings, because he does not want to allow a computer to start World War III).

Because the Russians will soon be able to hit all the fixed U.S. missiles, the Carter administration has proposed the United States build movable land-based weapons that cannot be targeted because they can be rapidly shifted about. That mobility is the MX missile's key feature, as well as the one most upsetting to many Utah and Nevada residents.

The MX missile itself would be larger than the Minuteman, with better accuracy and several minor technological improvements. However, it is its ability to scuttle out of a nuclear bull's-eye that is vital.

The new missiles will be based in Utah and Nevada because the two states have a lot of federally owned desert land with very few people. It would be easier to build bases there, and if war came, an attack on the Utah-Nevada desert would cause fewer casualties than almost anyplace the Pentagon has looked.

Because the Carter administration's arguments are widely accepted in Washington, the MX has powerful support in Congress.

Rep. Gunn McKay, D-Utah, chairman of the Military Construction Appropriations subcommittee, will deal with the money the Air Force needs to build MX bases. McKay is sensitive to the fears the MX has caused among his constituents in the 1st District, but he has a feel for Congress as well.

"I think that if we stonewalled MX in the appropriations committee, the House might force it on us on the floor," McKay said in an interview.

McKay said his readings of the House have found a shift to pro-defense attitudes among many members in light of the Iranian and Afghanistan crises. That attitude was displayed in McKay's subcommittee by Rep. Robert C. McEwen, R-N.Y., who lectured Utah Gov. Scott M. Matheson on March 26 on the "very serious problem of national security in the face of the Soviet threat."

McEwen, who said what many other members feel, told Matheson, "All of us must do our part to protect this country from foreign attack," and he made it clear he thought Utah's part was to be a base for some of the MX force.

The same attitude prevailed in the House Budget Committee when it voted out a budget resolution late in March. Liberal members, who wanted simply to cut Pentagon spending, moved to trim $465 million in 1981 budget authority, but were defeated by a 15-10 vote.

Later in that committee's markup, Rep. Tim Wirth, D-Colo., noted that Utah Republican Sens. Jake Garn and Orrin Hatch, both strong defense men, were having second thoughts about MX. Using the Utahns as a wedge, Wirth fought for language in the budget resolution opposing the racetrack basing mode, a motion that failed.

Finally, Wirth and Rep. Paul Simon, D-Ill., were able to write in a weak provision asking the House to take a careful look at the basing mode. That relatively meaningless move squeaked by on a 13-12 vote.

In the Senate, hawkish opinions are also running strongly although this reporter believes the Senate is slightly more likely to slow down MX development than the House.

In the Senate Budget Committee a wrangle in early April, just before the Easter recess, led to the adoption of an amendment by Sen. Ernest Hollings, D-S.C., to the budget resolution recommending transfer of $400 million from MX deployment to development of a new version of the B-1 manned supersonic bomber.

As with the House budget amendment, Hollings' motion is meaningless. It is not binding on the Senate and will not even appear in the committee's report.

In an interview, Garn said he personally supports building an MX-type weapon for strategic reasons, and he believes one will be built, but not in the form now recommended by the administration.

The racetrack base, Garn said, "is probably dead."

Cost is one factor. The present estimated price tag is $56 billion, adjusted for inflation. About $1 billion to $3 billion can be saved by building an alternative type of base. Garn would like to see — and said he thinks people will see — a system of fixed silos built for the MX. Missiles could be trucked from one to the other in a "shell game" to kekep the Soviets guessing. The road network required would still be major, but, he said, less intrusive than the closed-loop racetrack system.

Split deployment, Garn said, is a real possibility for reducing the number of missiles located in Utah and Nevada. Present plans by the Air Force call for 35 percent of a 200-missile force to go into Utah. Garn said he thinks that might be trimmed to 25 percent or less.

Split basing, with the weapons scattered more widely throughout the West, would cost more, but would reduce the social and economic impact on any one community.

Another possibility in place of the massive racetrack bases might be to build anti-ballistic-missile protection for MX missiles.

The United States and Russia gave up ABM defenses in 1972 by treaty, but in the aftermath of failure of a Strategic Arms Limitation Treaty, ABMs might be reconsidered. The United States has kept research on an ABM going, and some officials think a much cheaper, more effective ABM might now be built.

The key to using an ABM to protect the MX is that anti-missile defenses are good against warheads aimed at a small, tough target, although they are poor against a large soft target such as a city. It would be relatively easy and economical to defend an MX silo, one hardened to withstand an almost direct nuclear hit. The United States would only have to defend the hole with the missile in it. The Russians would have to knock out all of the holes in a multiple-launch-site base.

Any number of alternatives to the specific racetrack MX basing are possible this spring, because the MX is a system in flux. Technically, it exists only on paper. Its designation is "missile experimental" and it does not yet have even a formal name.

The House and Senate Armed Services Committees have voted more money for defense in general than President Carter has requested.

The appropriations committees in the two houses have only begun hearings on the MX. Decisions on a basing mode will be hammered out over the next three months, perhaps longer.

McKay suggested that final decisions don't have to be made even this year.

Racetrack basing system out of step, expert says

■ *Dr. Richard L. Garwin, a physicist, is one of America's leading defense analysts. He has published scores of papers and served on advisory committees to the Pentagon.*

Garwin is a researcher for IBM and a professor of public policy at the Kennedy School of Government at Harvard University.

By Dr. Richard L. Garwin

Three decades of experience in industry and defense matters, persuade me that the racetrack basing for MX will never be deployed.

Its vast cost would be a burden on our overall defense program, but the main problem is that the racetrack, or any multiple protective shelter system, will not solve the problem for which it has been proposed — ICBM vulnerability. The racetrack is out of step with technology and with the need.

Even a rapid deployment of 4,600 shelters, beginning in 1986 does not confer invulnerability until most of the shelters are built (1989 or thereabouts) and then only if Soviet re-entry vehicles are limited in number according to the SALT II limits, which indeed expire in 1985.

But the Soviet Union can totally, legally (without violating the spirit or the letter of SALT II) build a vast number of RVs and adaptors and be ready to deploy them in 1985 on their current generation of missiles.

Although the United States could afford to build 20,000 shelters if necessary, at a cost of $2 million each (140 billion), to counter 20,000 accurate, reliable Soviet warheads, it would not be clear to the United States that the Soviets were preparing 10,000 or 20,000 (or 50,000) additional RVs for deployment on their missiles.

Thus, the racetrack basing mode of the MX would have to be projected with a vast number of shelters in order to counter the possibility that the Soviets could expand their numbers of warheads.

Even with present technology, the Soviets could afford enough warheads to attack 4,600 shelters or 10,000 shelters if there would be a great political and military advantage to making MX vulnerable in its racetrack.

Missiles twice as accurate as those which have been demonstrated would have the same probability of kill against shelters with warheads of yield only one eighth the present RV yield. Thus the existing missile force, improved in accuracy, could carry and dedicate to attack on MX 20,000 RVs, where now one might imagine that 4,000 RVs could be so dedicated.

Soviet ICBM or SLBM (submarine-launched ballistic missile) guidance systems fitted with receiver/computers to accept signals from navigation satellites (or ground beacons in the Soviet Union) will know their position to 30 feet during the missile guidance, leading to ultimate accuracies in the range of 300 feet rather than the 600 feet cited as currently demonstrated Soviet ICBM accuracy.

With this potential accuracy, five warheads can be carried on a missile for each one now carried, and I maintain that any multiple protective shelter system deployed by the U.S. will within two years be regarded as vulnerable — just like the Minuteman silos now.

The same technology of NAVSTAR (a satellites based guidance system) guidance to the missiles themselves has led us to propose an alternative to the racetrack — the Shallow Undersea Mobile system (SUM) which would consist of 200 MX encapsulated missiles, carried horizontally outside the pressure hull of a fleet of small submarines operating within a few hundred miles of the coasts of the United States.

The submarines would be powered by fuel cells and would have a crew complement of 12 and a tour of duty of two weeks. Two MX missiles could probably be deployed on a single submarine weighing, altogether, less than 1,000 tons; 4 to a submarine weighing less than 1,500 tons (including missiles).

Communication to the submarines would be by radio signals received by an expendable buoy — a new one ejected every two hours or so — floating awash at the sea surface and connected by a fine insulated wire or fiber optic lead to the submarine patrolling freely below and paying out line from a spool on the submarine. Normal VLF (very low frequency) primary and backup communications, and UHF (ultra-high frequency) from satellites could be received in this way.

Authentication in the missile itself of the encrypted radio signal received from the national command authority would ensure that missiles could not be fired by the submarine crew nor by anyone mimicking the signal from the president.

As is the case with the racetrack, one would have a prompt, accurate ICBM force, but the SUM force would be invulnerable to improved accuracy and fractionation of the Soviet re-entry vehicles since it would survive by concealment and not by the proliferation of numbers of shelters.

The submarines would patrol for the most part at shallow depths in deep water where they would be totally unaffected by the "surf zone" effect, which is a problem for ports and for vehicles above the continental shelf.

To compete even with an optimistic view of the racetrack MX, the SUM system need not be available before 1989. MX missiles, guidance and communications could be developed and produced by 1986; small submarines with a crew of 16 exist now, and these could be adapted for the SUM role, or a new design produced by that time.

Unfortunately, the exact cost of the submarine manufacture, operation and basing is not known because no significant studies have been reported by the government.

I predict that a well-designed system of this type will be less than half the cost of the racetrack-MX and will be less vulnerable. Furthermore, any vulnerabilities which emerge will be easier to redress.

The racetrack is not the answer to the demand for a survivable, prompt means of attack on Soviet nuclear forces; SUM is.

MX forces politicians to juggle U.S., area interests

By LaVarr Webb
Deseret News political editor
and **Gordon Eliot White**
Deseret News Washington Bureau

The MX places Nevada and Utah politicians in some sticky positions.

They must juggle the wishes of their constitutents with the needs of national defense — and that isn't easy to do, since a Deseret News poll shows that a majority of Utahns and Nevadans don't want the missile in their areas.

For U.S. presidential candidates, the MX is not such a sticky political issue, but the candidates still hold differing views on the matter.

The Deseret News contacted 19 Utah and Nevada politicians and all five major presidential candidates to determine how they stand on the missile, its basing mode and its proposed location.

Every politician contacted supported a new generation U.S. missile such as the MX. Presidential candidates and congressmen have had some classified briefings on the need for the missile. All seemed uneasy about a Soviet buildup of tactical arms that exceeds any possible defensive need.

Many of the top politicians fear that the Russians may soon believe they could win a third world war.

Of the five major presidential contenders, only President Carter is specifically backing the racetrack MX base. He appears firmly committed to putting 4,600 MX shelters on racetrack-like roadways in Utah and Nevada.

Carter has said that the design of the basing mode was dictated largely by military considerations and that SALT II influenced the design only in detail.

The man who holds the lead in the race for the GOP nomination, Gov. Ronald Reagan, indicated that he is worried about the Soviet threat, but is not convinced that racetrack bases are this country's best strategic bet.

Jimmy Carter

Edward Kennedy

Ronald Reagan

He agrees that the missile must be mobile, but says the racetrack mode is too expensive and complex. "We should scrap the racetrack and look for alternatives," Reagan says.

Sen. Edward M. Kennedy, D-Mass., opposes not only the racetrack, but what he calls "the administration's haste in making siting decisions."

"There is no question," Kennedy says, "that we need to keep our triad strategic deterrent, but I believe there are less costly, more efficient methods of doing that than the racetrack MX."

Rep. John Anderson, R-Ill., said he opposes the racetrack bases as inefficient and a waste of money. A cheaper, more secure way of achieving the nuclear capability would be to deploy the missile on small submarines, he said.

Ambassador George Bush said he wants the MX deployed as quickly as possible to "defend against the growth in Soviet power."

The proposed missile system poses a more complicated issue for Utah and Nevada politicians. They support the need for the missile, but most would prefer it to be based elsewhere.

When asked how they would stand if they were forced to choose between having the MX in Utah and Nevada in the racetrack mode or no missile at all, most squirm and say they can't answer that because all the facts are not yet in.

A few said they would support the system in Utah and Nevada if no alternatives existed.

Following are summaries of viewpoints presented:

Sens. Jake Garn, R-Utah, and Paul Laxalt, R-Nev., hold key positions in the Senate Appropriations Committee to influence the MX development, and they hold similar views on the missile.

Garn was one of the early supporters of the missile system and he and Laxalt continue to believe it is critical to the nation's defense. But both have expressed grave reservations about the basing mode and are seeking alternatives and both think the system should be spread into several locations, not concentrated in the two states.

Sens. Howard Cannon, D-Nev., and Orrin Hatch, R-Utah, haven't been in the forefront of the issue as have Garn and Laxalt. Interviews with their aides indicated that both seem somewhat resigned to the fact that MX is coming and both plan to work hard to mitigate its impact.

Hatch feels that great growth will come to the proposed MX area even without the missile, and the missile system might take some of the "boom and bust" out of the growth cycle.

Dan Berman, a senatorial candidate opposing Garn, is opposed to any racetrack system anywhere. He supports the need for the missile, but would never support it in Utah and Nevada on the racetrack even if the Air Force determines no good alternatives exist.

Utah Gov. Scott M. Matheson and Nevada Gov. Robert List also hold similar views on MX. They have asked the Air Force to "go back to the drawing board" and study split deployment and other alternatives to placing the whole project in Utah and Nevada.

List has said that if no other alternative exists, then he would have to support the missile in the two states.

Matheson isn't ready to say how he would stand in that event.

Rep. Gunn McKay, D-Utah, also holds a key position in Congress with regard to MX; he is chairman of the House military construction appropriations subcommittee. He thinks enough time still exists to work out alternatives to the basing mode, but feels the decision on the location must be made soon.

Rep. Dan Marriott, R-Utah, said the racetrack is probably the best approach possible, but he favors split deployment.

Rep. Jim Santini, D-Nevada, favors splitting deployment among four states. The Air Force hasn't answered all his questions so he doesn't know how he would stand if no alternative to Utah-Nevada is found.

COMMENT

Crucial decision: Pentagon needs to prove MX case

The growing national debate over the MX missile project focuses on one of the most crucial public policy decisions of this generation — no less a decision than whether or not this is the best way to ensure the survival of the nation.

All Americans face that overriding question. But Utahns face others as well: Is this system so much better than all alternatives that it justifies profound social and economic disruption, irreversible damage to vast areas of Utah and Nevada, and the designation of this area and its people as the major target for Soviet missiles?

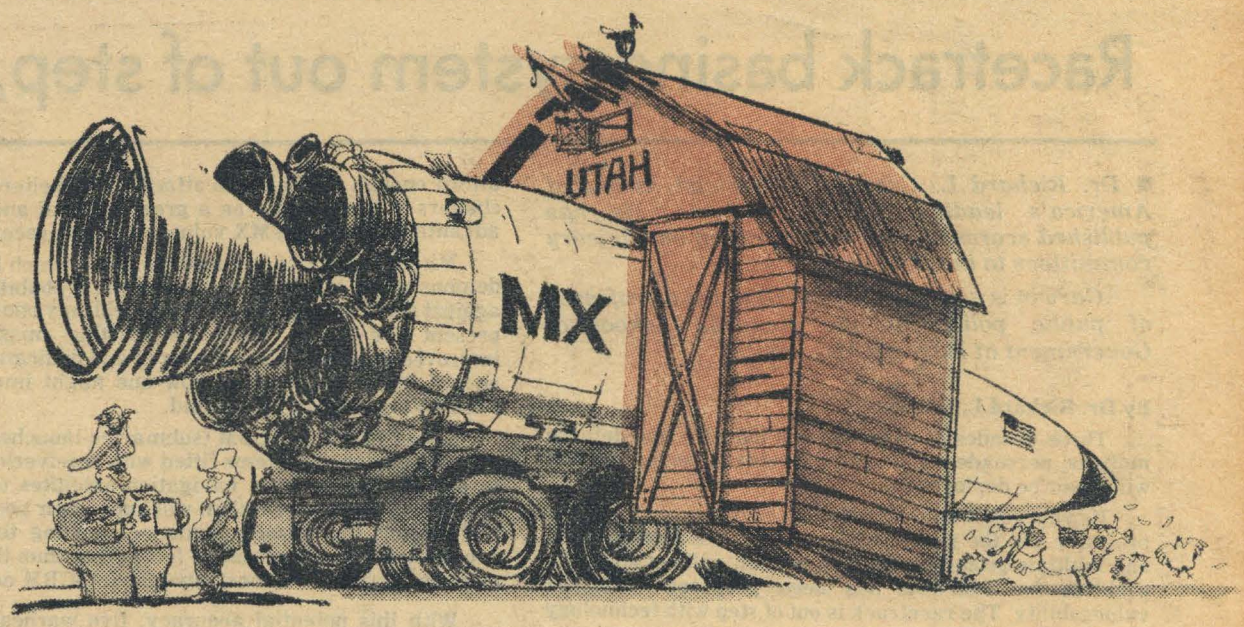
Let the Deseret News position on these issues be made immediately clear: IF it can be unmistakably demonstrated that the MX racetrack system is essential to national defense, that there are no viable alternatives; IF it is proven that the system must be concentrated solely in Utah and Nevada, that no other sites are workable; and IF every feasible safeguard is taken to minimize the economic, social, and ecological impact on this area — then, and only then, citizens of the Great Basin have no alternative, as loyal Americans, but to accept it.

But the Pentagon has not met those conditions. It has not even come close. In fact, the more the generals in their public meetings and news conferences have tried to sell the system to Utahns, the more doubt and opposition have grown.

When the racetrack system was first proposed for the Utah-Nevada desert, there was widespread approval here. It would mean jobs, Utahns reasoned, and it was necessary for national defense.

That attitude has changed drastically as more has been learned about the implications. The latest Deseret News poll in western Utah and eastern Nevada shows 65 percent opposition, with more than 46 percent strongly opposed. Opposition prevails throughout Utah, but is strongest in the actual construction area where economic benefits would supposedly be greatest.

Nationally, too, opposition is growing. Strong anti-MX editorials have appeared recently in several of the country's leading newspapers. Congress is becoming more critical.



"You'll love it. Sign here."

Why this growing opposition? The reasons are not hard to find.

First, the Defense Department has given no evidence to back up its assertion that this is the best and only system, that there are no viable alternatives. The Air Force claims it has studied some 35 other options and rejected them all. But it doesn't list what they were, when and how they were studied and why they were rejected. It gives no data, no particulars of its studies. It asks that its decision be accepted on faith.

That won't do. Faith in the military runs pretty thin in an area whose cancer-stricken citizens remember the bland assurances that fallout from open-air nuclear testing was nothing to worry about, and learned only later how knowledge of its deadliness was covered up. Faith runs thin among people who witnessed 6,000 sheep killed by nerve gas in that same Utah desert and listened in frustrated disbelief to the military's denials for years until culpability was finally admitted.

At this point people simply do not believe the Pentagon's claim it has adequately studied all alternatives. It appears that only a cursory look has been or is being given to other locations and other means of deploying the missiles. The Air Force must prove — actually prove — its claims to the contrary.

Second, opposition is growing because of basic questions about the system itself. Seemingly competent testimony is heard that it is too complex, too cumbersome to be relied on under attack conditions. That the rationale for building MX was to survive the strongest attack the Russians could mount under the missile limitations of SALT II, and that this rationale is invalid now that SALT II is dead. That by the time the system is operational in 1989, Russian technology will surely have found a way to detect the missile location. One fact is indisputable: MX cannot be deployed until 1989 at the very earliest, while the Russians will achieve capacity to overwhelm our Minuteman system (and this is the reason given for building the MX) in 1982. In short, the whole concept may be a horribly expensive Maginot Line.

The third reason is the conviction of some that other improvements in our present triad of defense can achieve enough counter-strike capacity to deter any Soviet missile attack. This would involve improving the Minuteman system, increasing the accuracy and numbers of Trident submarines and missiles, and bringing the airborne cruise missile on line. This course would cost only a fraction of the projected cost of MX.

Finally, in the Utah-Nevada area at least, there is growing bitterness over the Pentagon's apparent refusal to give serious thought to dispersing MX among different sites, as Minuteman has been scattered across six states. Additional sites could certainly be found in Texas, Wyoming, Arizona, New Mexico and perhaps other states.

Dispersal would increase costs to the taxpayers, to be sure, but it would greatly reduce the effects of MX on the land and communities of the Great Basin, and it would soften the feeling of people here that they have been chosen to bear the brunt of sacrifice.

In a democratic nation, defense policy cannot be well-founded on the resentment and hostility of those citizens most directly affected by the policy. Defense officials from the White House on down must ponder the wisdom of forcing MX on an unwilling citizenry.

Minuteman force will soon be vulnerable to N-attack

By Harold S. Brown
U.S. Secretary of Defense

The most disturbing feature of the continuing Soviet strategic buildup is that our Minuteman ICBM force, based in hardened silos, will soon lose its ability to survive a nuclear attack.

This is a result of the improving accuracy of Soviet fourth-generation ICBMs.

Soviet missiles will soon have the accuracy to threaten any fixed target and will carry enough warheads to target two on each Minuteman silo, with more than 4,000 left over for use against other targets.

The question is: "How do we respond?"

There have been suggestions that we simply abandon our ICBM force and rely on the other two components of the strategic triad: the submarine-launched ballistic missiles and the air-breathing bomber-Cruise missile force.

However, any action of that sort would send a dangerously misleading signal to the Soviets. More important, it would greatly simplify their targeting problem.

The strategic triad has served us well for two decades. It gives us a much-needed hedge against two potential risks. The first is that technical difficulties would temporarily disable one of the triad components. The second is that a technological breakthrough or force buildup by the Soviets could threaten the survivability of one of the triad components.

We are now in the second of these situations with respect to our Minuteman ICBM force. The other legs of the triad will buy time for us to restore the survivability of our ICBM force. If we do not restore it, however, we can expect the Soviets to concentrate their efforts on similarly degrading the missile submarine force and the bomber Cruise missile force.

Detailed studies were conducted on an exhaustive list of missile-basing systems. Some were rejected because they lacked the desired military potential, some because they were too expensive and some because they were not technically feasible.

The MX concept of multiple protective structures (MPS) emerged as the one which has the necessary military characteristics yet can be built at a reasonable cost. This MPS system confronts the Soviets with an adverse exchange ratio, that is, in attacking they would always have to expend more missiles and warheads than they could expect to destroy. It is an added element of deterrence.

Now, why have we chosen to concentrate the MX force in the Great Basin area of Nevada and Utah? The answer is that a combination of natural factors and military considerations leads us persuasively to this decision.

Among the natural factors is the area's ground water, which is below the depth of proposed shelters, so that we do not have to do construction work in the water table.

Bedrock is also below shelter depth and that will minimize construction costs. Terrain is quite level and the power units required for the missile transporters can be kept within reason.

An ICBM system should obviously be located away from the nation's borders. Further, to reduce the danger of no-warning attack from missile-firing submarines, the system should be away from the nation's coastlines.

It also makes good military sense to limit the deployment areas of the system, as we are proposing. Wider dispersal would not seriously complicate Soviet targeting. It would, however, require more support facilities and more manpower and would thus be more expensive.

In sum, we have concluded that the proposed MX system is the best way to ensure a survivable ICBM force, even in the face of a greatly increased level of Soviet forces.

In that connection, our studies have shown that other proposed deployment schemes are subject to greater vulnerabilities. In coastal submarines, for example, or implanted in large lakes, they would be vulnerable to the tidal wave effects of underwater nuclear explosions.

Further, our MX system meets these five critical criteria for a new ICBM noted by President Carter when he announced the MX decision:

First, MX contributes to the survivability of our strategic forces.

Second, it can be verified by the Soviets, just as we would insist on verifiability in any mobile ICBM system they might deploy.

Third, it minimizes the adverse effects on the environment.

Fourth, life cycle costs over the years will be reasonable and supportable, no more than for the Minuteman system.

And fifth, it is consistent with existing SALT agreements and with our goal of negotiating significant reductions in strategic weapons.

■ *Arguments against MX are presented by Dr. Richard L. Garwin on page 15.*