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2/12/82

Alaska MX missile site is proposed

By ANNABEL LUND
Empire Staff Reporter

A geotechnical engineering firm, whose proposals for deep basing MX missiles are now being considered by Air Force and Pentagon officials, has recommended that missile sites be located in Alaska on the south sides of either the Brooks or Alaska mountain ranges.

The recommendation is part of a 23-page proposal by the company expected to undergo validation tests by the Air Force this spring.

A major advantage of locating the MX underground in the Brooks Range, according to Dr. Paul Erickson, engineer from Resource Engineering and Development, Inc. in Midvale, Utah, is the mountain range provides natural protection from Soviet attack. The Brooks Range runs east to west, allowing for a missile egress portal facing south which, Erickson said, is considered a very difficult target for Soviet missiles traveling over the North Pole.

In addition, Erickson said, the proposed Alaska sites would be in rugged mountains on very remote land far from urban centers, "which is a good selling point to the plan."

"It could take a lot less time for missiles launched in Alaska to hit targets in the U.S.S.R. than if they were sited in the Midwest," Erickson also pointed out.

The engineering firm's proposal calls for approximately 100 missiles to be based in four to five locations throughout the United States — with at least one site in Alaska — at a cost of approximately $ billion in 1981 dollars.

Resource Engineering and Development, a subsidiary of Hoskins, Western Sonderegger, Inc. civil engineering firm in Lincoln, Neb., has developed a system for providing rapid deployment of buried missiles, and will be one of the firms selected by the Air Force for validation testing this spring, Erickson said.

The Air Force is expected to award contracts by June, 1982 for design of the deep basing mode of missile deployment.

Congress has required the President to make a decision considering several different basing modes by July 1983.

The Pentagon is considering three basing plans for the MX missile:

- The "Big Bird" plan, which includes keeping missile-bearing transport planes in the air constantly.
- The silo system, similar to the basing mode of the Minute Man missile system.
- Deep-basing sites in which missiles would be buried 2,000 to 7,000 feet under the sides of rugged mountain ranges.

The Defense Subcommittee of the Senate Appropriations Committee, chaired by Alaska Sen. Ted Stevens, is investigating several proposals for MX basing modes, said an informed congressional source, who asked not to be identified.

None, however, has been granted authority yet by the Department of Defense, the source said.

In the past, he said, Utah and Colorado — not Alaska — were considered prime sites for deployment of the MX.

"When Alaska was considered orginally for MX there were a number of criteria that had to be met, and Alaska was ruled out on several counts," the aide said.

One of the disadvantages of putting the MX in Alaska, he said, was the state's extended coastline would allow Soviet submarines to deploy depressed projectory missiles targeting Alaska sites, not a problem in land-locked Utah or Colorado. Alaska's close proximity to Canada and the limited warning time in case of Soviet attack were also cited by the aide.

According to Pentagon officials, however, deep-underground basing of the MX is designed specifically to protect the warheads by burying them thousands of feet underground, so the missile complex and personnel could withstand a direct nuclear hit and survive for up to a year without exposure to radiation.

Two high-ranking Alaska military officers, Adjutant Gen. Bill Sharro and Lt. Col. Floyd McKee of the Alaska Air Command, have pointed out that Alaska was in a very strategic defense location, and Sharro told the Empire the proposal to locate the MX in the state "does merit

Continued on Page 2

MX sites...

Continued from Page 1

some very serious attention from a tactical and strategic standpoint."

State officials first became aware of proposals to locate the controversial MX in Alaska last November when a highly respected scientific journal, Avlation Week and Space Technology, reported the federal government was considering siting the missiles somewhere in the state.

Those reports were confirmed by a spokesman from the Nuclear Defense Agency and several Pentagon officials, but caught state military and governmental authorities by surprise.

Although both members of Alaska's senators delegation at first denied knowledge of the matter, Stevens later admitted to an Anchorage reporter that Alaska might be considered as a possible location for the warhead system in the future.

In a letter to Gov. Hammond Dec. 22, U.S. Secretary of Defense Caspar Weinberger said that, although no specific sites had been selected, Alaska had not been ruled out as a location for deep basing.

Concerned about the reports, state Rep. Brian Rogers, D-Fairbanks, introduced legislation in the state House opposing any plans the federal government might have for location of the MX in Alaska.

Rogers said he opposed basing the MX intercontinental ballistic missile system in Alaska because the state would then become a target for a Soviet pre-emptive attack and because nuclear explosives would be used to excavate the tunnels used for the system.

2/21/82

Anchorage Daily News

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Alaska's mountains are no place for MX

Those who should know — Rep. Don Young among them — say chances are slim that proposals to base MX missile systems in Alaska are being taken seriously by the Pentagon. Rep. Young assures us the idea has roughly "a snowball's chance in Phoenix, Ariz." of coming to fruition. Even so, if a defense engineering firm can take the notion seriously enough to investigate the Brooks and Alaska mountain ranges as possible sites, and since the Defense Department will award basing mode research contracts in June, then Pentagon planners should know clearly that Alaskans want no part of these megadeath missiles.

As Americans, many residents of this state will join the growing opposition to the nuclear threat posed by superpower indulgence in the arms race. They will ask hard questions about the price — in economic, political and moral terms — of MX missile technology, and the need for its deployment on any terms. They will demand answers — from their congressional delegation, for starters — on the justifications for the fearsome risks that go with further nuclear arms development.

As Alaskans, they will struggle long and hard against any proposal to gouge deep holes into the Brooks Range so that it may become, at best, a nuclear minefield and, at worst, a nuclear staging ground. They will insist that basing the missiles so far from major American population centers is not, in fact, a step toward security — but rather another step toward the precipice. "Out of sight, out of mind," is no prescription for comfort when dealing with such devastating arsenals of destruction.

Reports this week of plans that find remote Alaska mountains ideal sites for those arsenals are a chilling reminder that no corner of the world is safe from their intrusion. They are a reminder, too, that nuclear arms issues cannot be ignored by any citizen who would accept the burdens of participation in a modern democracy. The missiles are too close — to all of us — to leave these decisions to the "experts" in Washington (and Moscow, London, Paris, Peking, Bonn . . .) who, after all, already have extended the nuclear shadow to the farthest corners of the earth.

THE SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

RECEIVED

DEC 22 1981

DEC 29 1981

GOVERNOR'S OFFICE

Honorable Jay S. Hammond
Governor of Alaska
Juneau, Alaska 99824

Dear Governor:

Thank you for your letter regarding the proposed M-X strategic missile system. I certainly understand your concern on the reported deployment of M-X.

As a long-term option under President Reagan's ICBM Modernization Plan, deep basing is being evaluated as a survivable M-X option. Various defense agencies are beginning to assess the underground tunneling technology of the civilian industry. Presently, we are evaluating the mechanical factors which would allow us to develop an underground missile basing concept. At this time no specific sites are being evaluated.

If deep basing shows sufficient promise as an operational system which we could effectively deploy, we will begin to consider potential siting locations. Although it is quite unlikely that a missile with intercontinental range would be deployed in Alaska, the Department of Defense is obligated to review all options available for M-X deployment. Therefore, I cannot categorically tell you that Alaska will not be considered as a possible deep basing location.

The Department of Defense will definitely and properly inform you if our evaluation shows that the State of Alaska is a viable deep basing site for M-X deployment. Additionally, we would solicit and welcome your participation in the necessary planning for such a deployment.

I hope that this information is useful. Please contact us if we can be of any further assistance.

Sincerely,

Caspar W. Weinberger

December 3, 1981

COPY

The Honorable Caspar W. Weinberger
Secretary of Defense
The Pentagon
Washington, D.C. 20301

Dear Mr. Secretary:

Recently, reports have circulated in Alaska that there were plans by the U.S. Department of Defense to p ce MX missiles in tunnels in Alaska. Preliminary checks with Washington indicate that this is not being considered as a policy at the present time. We would appreciate, however, confirmation from you as to whether or not the consideration is being given at this time to placing MX missiles in Alaska.

If now, or in the future, there are plans of this nature, we would certainly anticipate that the state of Alaska would be officially notified, and be allowed some input on those determinations.

For your information, I am enclosing a recent newspaper article regarding the situation so that you will understand my desire to have some statement from you.

Sincerely,

Jay S. Hammond
Governor

Enclosure

JSH:JD:SKP:mal/1

bcc: Dem Cowles

mil Affs

DON YOUNG
CONGRESSMAN FOR ALL ALASKA

COMMITTEES:
INTERIOR AND INSULAR AFFAIRS
MERCHANT MARINE AND FISHERIES

FEB 16 1982

Congress of the United States
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Washington, D.C. 20515

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TELEPHONE 907/456-6949

February 9, 1982

Honorable Terry Stimson
Alaska State Legislature
District 7-E
Pouch V
Juneau, Alaska 99811

Dear Senator Stimson:

This is in reference to your letter of January 28th requesting answers to your questions on the MX missile. I asked my staff to do a little research on the matter. I hope that this letter serves to clear things up a bit, but I am in any event pleased to be able to be of assistance to you.

Deep-basing is one of the three proposals for basing the new MX missile. (The other two are continuous patrol aircraft, and sea-basing, either on ships or small subs.) There are several different modes of deep-basing, all in the formative stage at present. One version forsees digging deep tunnels to house the missiles, filling the tunnels with sand. The sand would serve to protect the missiles from a direct attack, and could be innundated with water to facilitate launching. Another form of deep-basing involves burrowing deep into the south sides of mesas to base the missiles, thus leaving the bulk of the mesa between the missile and the Soviet Union.

The Admin was already scrapping this idea

Super-hardened silos are Minutemen silos reinforced to withstand the incredibly high pressure associated with a direct hit by a large nuclear warhead. No one is sure how well such a silo could protect a missile. Tests with actual weapons are precluded by the Nuclear Test Ban Treaty, under which the US cannot test weapons above ground.

There are no intercontinental ballistic missiles (ICBMs) in Alaska. There may be other types of missiles, but their whereabouts and numbers are classified.

Under the provisions of the Nunn-Cohen Amendment to the Defense Appropriations Bill, the Administration will announce its final decision on MX basing in July, 1983.

The FY 82 Budget included $20 million for R & D on MX basing. The 83 figure is yet to be determined. Alaska could only conceivably be slated to receive MX missiles if the deep basing (DB) mode were chosen. If DB is eventually chosen, the choice of region for deployment will depend, among other things, upon which type of DB is chosen. Each type requires different geo-technical characteristics. If DB is chosen, a lengthy process would begin, starting with the Defense Systems Aquisition Review (DSARC). DSARC would not begin until after July, 1984 at the earliest. Then a lengthy environmental process would begin to assess the potential environmental impact of DB. The Environmental Impact Statement procedure would probably begin in 1986, with actual deployment starting in 1989 or later.

In any event, barring some change in US strategic doctrine, the strategic considerations leading the Air Force not to base ICBMs in Alaska would lead them not to deploy the MX in the state. Our policy is one of deterrence, and it is therefore not important to be able to strike first, but to be able to respond to a Soviet strike. Because response is important, it is crucial to have plenty of warning time before enemy missiles would actually impact in event of war. ICBMs are presently placed such that the Air Force would have 30 minutes warning time before enemy missiles would arrive. That gives the US time to launch from under an attack, if it so chose. In Alaska, however, there would be only 5 minutes tactical warning, not enough to launch. Furthermore, the command, control, and communications system in Alaska would be vulnerable, and any ICBMs there would be vulnerable to sea attack, which is why no coastal state contains ICBMs at present. This is not even mentioning the potential logistic and transportation problems Alaska would present as an MX basing site.

There is a connection between DB and Alaska. The connection, however, has nothing to do with deployment. It has to do with technology. The Defense Nuclear Agency has been studying Alaska tunnel mining techniques for application to DB. They are very interested in certain burrowing machines. Department of Defense sources stress that this has nothing to do with Alaska's characteristics as a potential basing site.

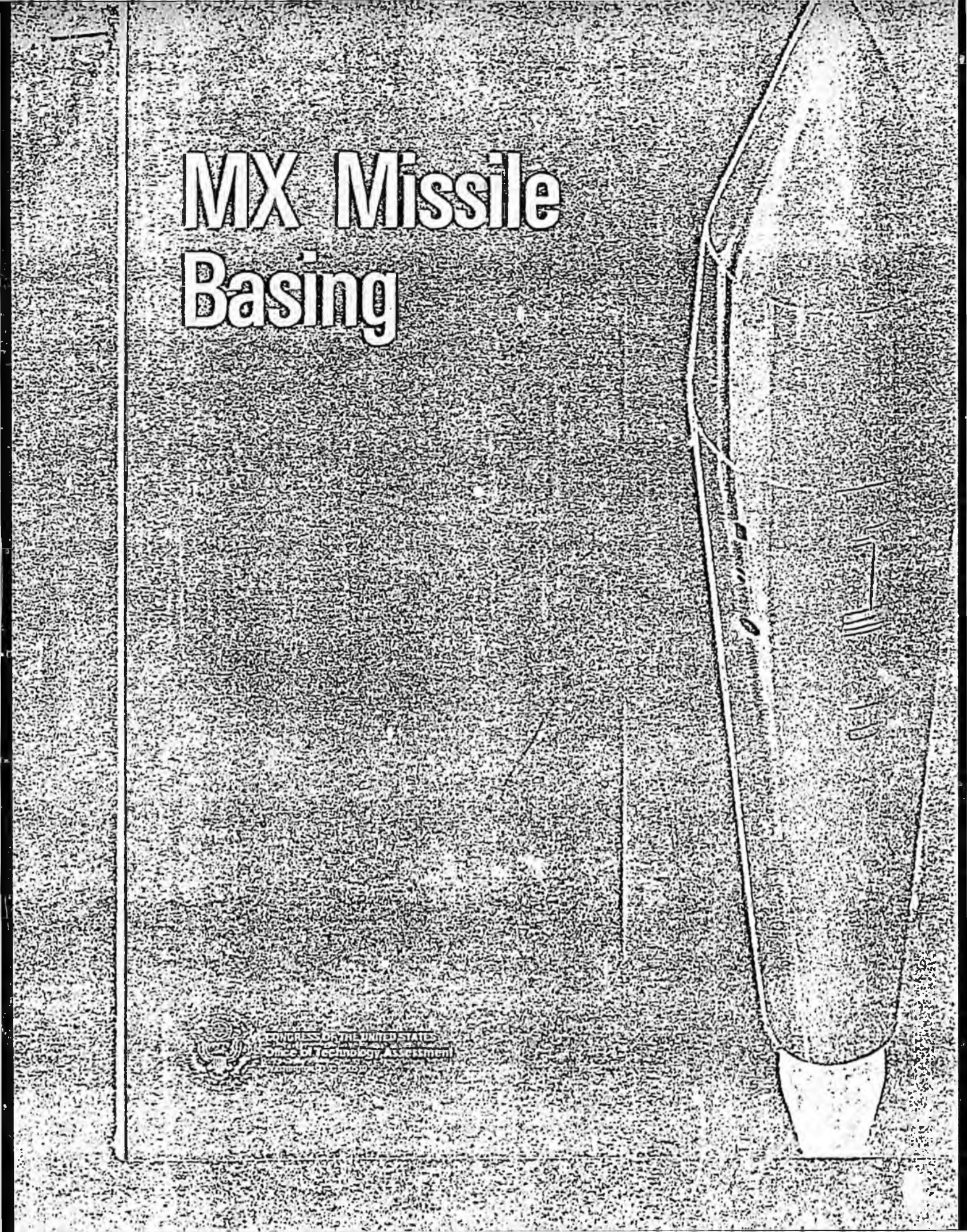
I apologize for the lengthy reply, but I hope it served to answer some of your questions. The chances of Alaska being chosen as a site for MX really seem remote. If you have any further questions or comments, please do not hesitate to write again. With best wishes,

Sincerely,

DON YOUNG
Congressman for All Alaska

DY:bw/rm

MX Missile Basing

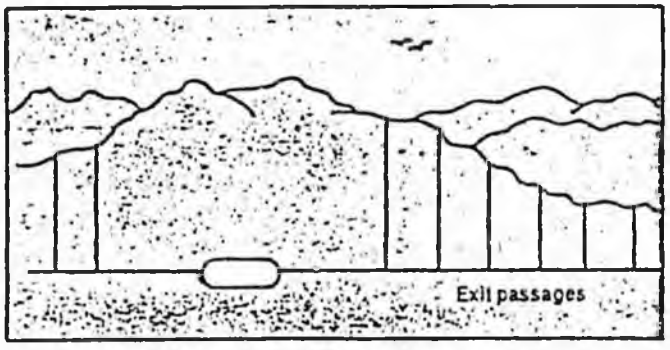


CONGRESS OF THE UNITED STATES
Office of Technology Assessment

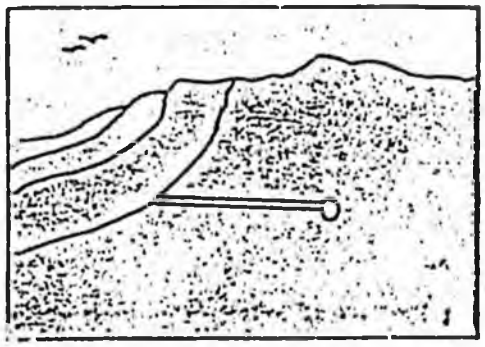
One interesting concept for missile basing is the deployment of the missile force in deep mountain tunnels buried thousands of feet under the surface, thereby providing protection for the missiles from a nuclear attack. Such a facility would be manned and would have self-contained provisions for electrical power, life-support, and missile maintenance. Upon the command to launch, tunnels would need to be bored to the surface to give the missile outside access preparatory to being launched.

The limitations of such a missile deployment derive not from the technical feasibility of its construction, but from the time constraints of a reliable missile egress for launch. A schematic for two types of missile egress is illustrated in figure 116A and B shows a number of completed vertical exit passages that are preconstructed. Missile egress through these passages could be rapid, but the exit portals could be easily attacked with nuclear weapons, which would deny then the ability to launch the missile. Even "hardened" exit portals would be vulnerable with today's missile accuracies. Moreover, attempts at constructing hidden exits would rely totally on keeping their locations secret for the entire course of deployment—a considerable risk.

Figure 116A.—Postattack Egress



116B



SOURCE: Office of Technology Assessment.

These observations have led to designs for deep underground basing without preconstructed exits (see fig. 116B). After the order to launch, large underground tunnel boring machines would clear a path to the surface from the partially completed tunnels. This method of launch would not be rapid, due to the lengthy excavation process, and could take a period of days to perhaps weeks; in the meantime work continues on devising a faster method for missile egress.

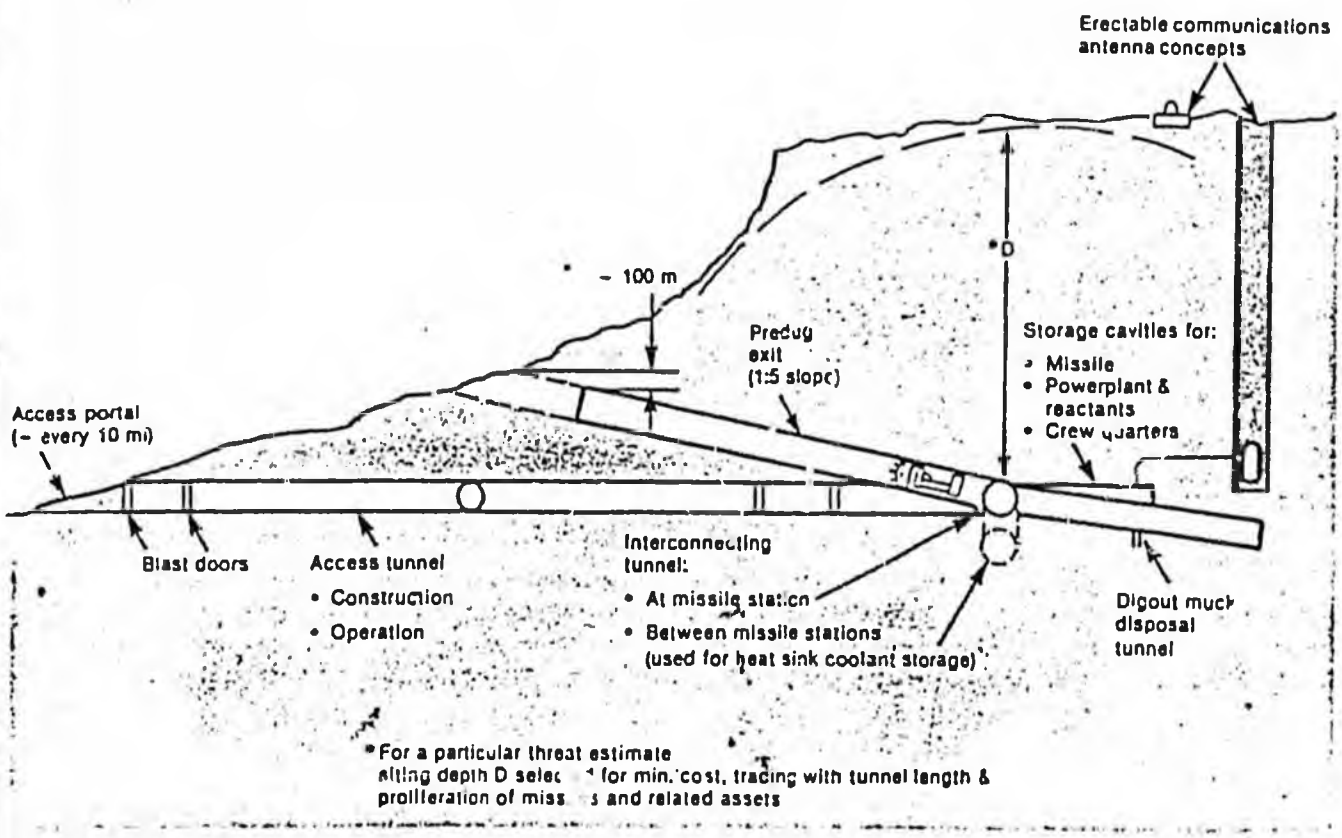
Clearly, this mode would not be suitable as a quick-response force for time-urgent missions after the initial attack—a major stated requirement for the MX missile. On the other hand, it could play a useful part in the overall strategic nuclear force as a secure reserve force. Postattack endurance might be very good, perhaps a year or longer. Furthermore, it could have a stabilizing effect and serve as a deterrent to war due to its high survivability to nuclear attack. Unlike fixed missile silos or multiple protective shelters, deep underground basing would be relatively insensitive to the increased accuracy of enemy missiles, or the fractionation of their payload. Moreover, deceptive basing of the mssiles would be unnecessary.

Although studies of deep missile basing date back many decades, it is still in a conceptual stage. Hardware specific to this type of missile basing has not been developed or tested, although many of its components, such as deep underground facilities and tunnel boring machines, have been constructed for other purposes. And, although a large data base on underground nuclear explosions has been collected over several decades, there is still a

degree of uncertainty on the coupling of explosive energy of a nuclear surface burst to the underground. This knowledge would be important in determining the minimum tunnel depth for sure survival of the missile against a large nuclear attack.

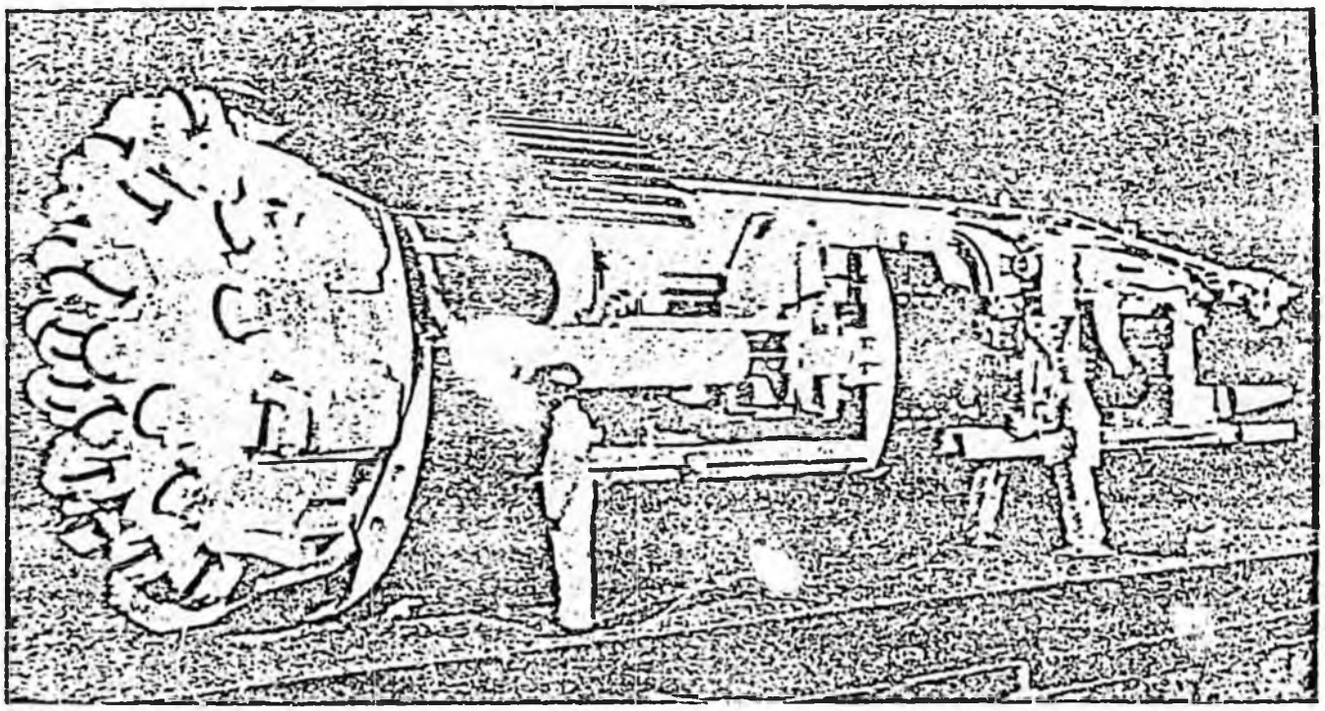
One concept for deep basing is illustrated in figure 117. This approach would utilize basing inside of a mesa, which, due to its relatively steep slope, has the advantage of providing a short tunneling length to the mesa face for missile egress. System burial would be typically several thousand feet. The exit route for the missile would be partially predug, with the remainder left to be dug by a tunnel boring machine, after receiving the command to launch. In addition, a number of horizontal access tunnels would lead to the underground complex from the outside. These access tunnels, which would be required during construction, would also provide underground access during peacetime. Blast doors in these tunnels would be needed for protection of the underground complex during an attack. Storage cavities would be provided for crew quarters, a fuel cell powerplant and its reactants, waste disposal, and tunnel boring machines. (A typical tunnel boring machine is shown in fig. 118. It is constructed and sold for tunnelling operations.) A reliable means of assuring a survivable communications link between the outside and the missile force has not yet been fully developed, although a number of possible candidate concepts do exist. One such concept involves the deployment of a large number of erectable communications antennas, as illustrated in the diagram. Assuring continuity of this link through the mesa during periods of attack is still a matter to be fully resolved, since resulting block movements inside the mesa may break underground cable links.

Figure 117.—Mesa/Tunnel Concept Section View (not to scale)



SOURCE: Office of Technology Assessment.

Figure 118.—Tunnel Boring Machine

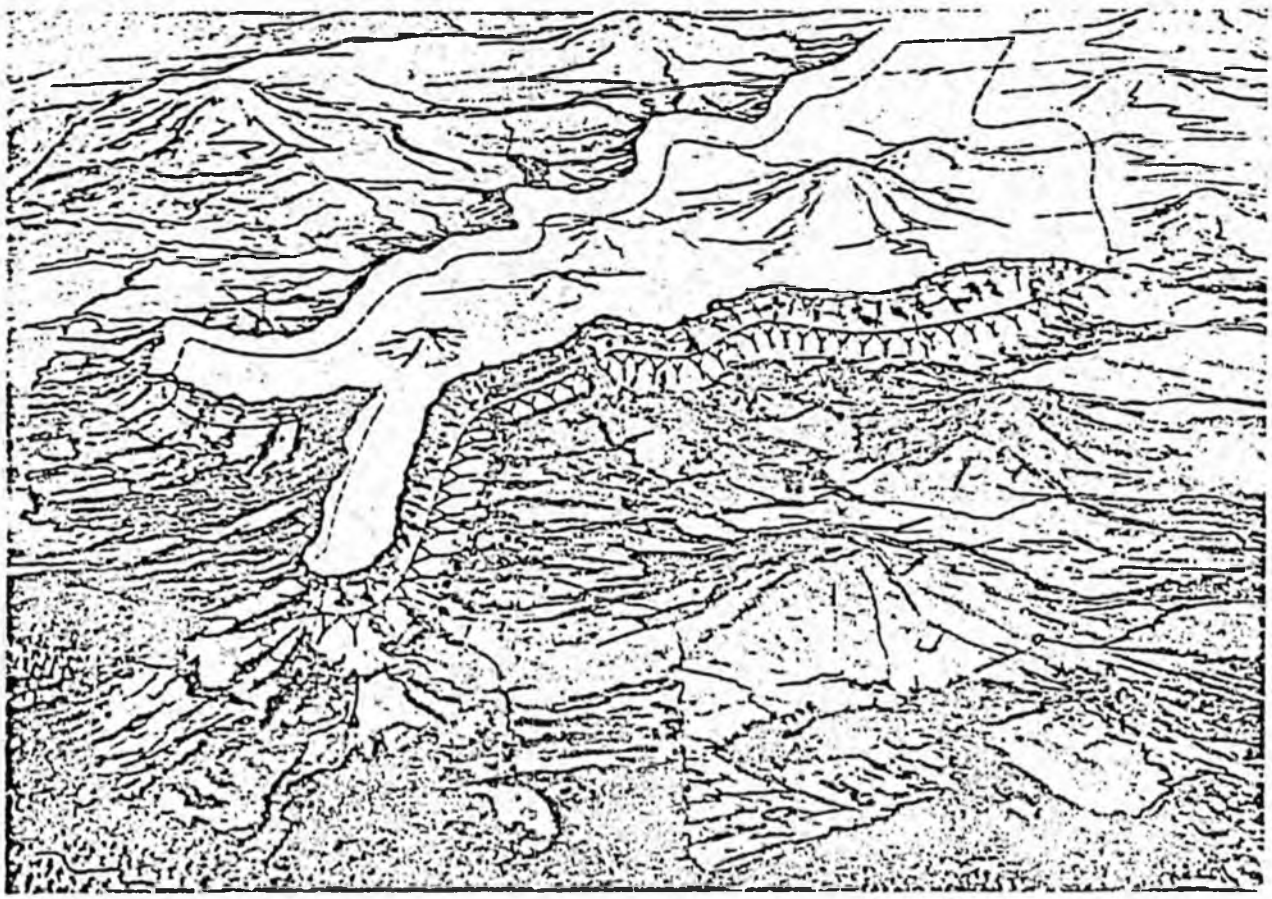


SOURCE: Robbins Co., Seattle, Wash.

An aerial view of the underground mesa-based force is shown in figure 119. The underground tunnels, shown as broken lines, form a closed complex around the mesa. An enlargement of a tunnel section is described in figure 120. The missile would be part of a launcher and transporter vehicle, as shown in figure 121, that resembles the vehicle used for buried trench basing, as discussed in chapter 2. For missile launch, after the tunnel boring machine cleared the way to the surface, the transporter-missile-launcher would move through the newly built tunnel to the surface, under its own power. This is illustrated in figure 122.

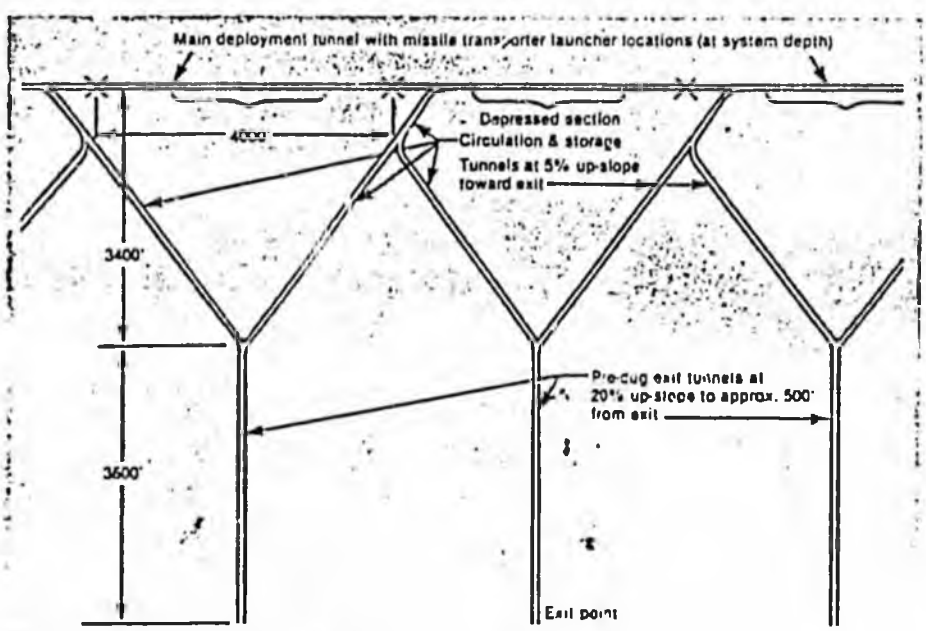
OTA has not analyzed either the environmental impacts or scheduling considerations for deep basing. A preliminary review does not indicate the likelihood of insurmountable problems, however. Estimates for system cost and construction time are highly tentative at this time. Much work on the detailed concept (particularly C³), research and development, and validation of design would be needed. Moreover, delays in construction for this basing mode could be expected, as experience in previous underground excavation projects indicates unexpected geological conditions that hamper progress. On the other hand, much excavation experience is available from many commercial and civil projects. Land area requirements are likely to be relatively small. Shown in figure 123 is a map of the United States with deployment areas of the Minuteman missile fields, the proposed MX/MPS deployment area, and two candidate basing areas for deep underground basing, one in the area of Grand Mesa, Colo., and an alternative site in southern Utah.

Figure 119.—Aerial View of Mesa-Based Force



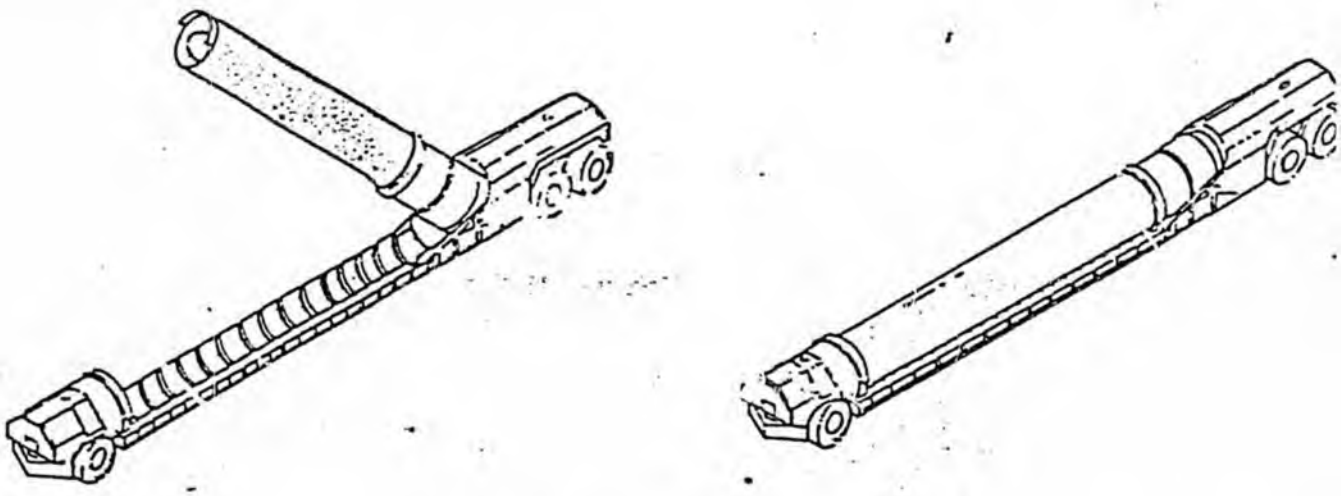
SOURCE: Office of Technology Assessment.

Figure 120.—Mesa/Tunnel Concept Plan View Schematic



SOURCE Office of Technology Assessment

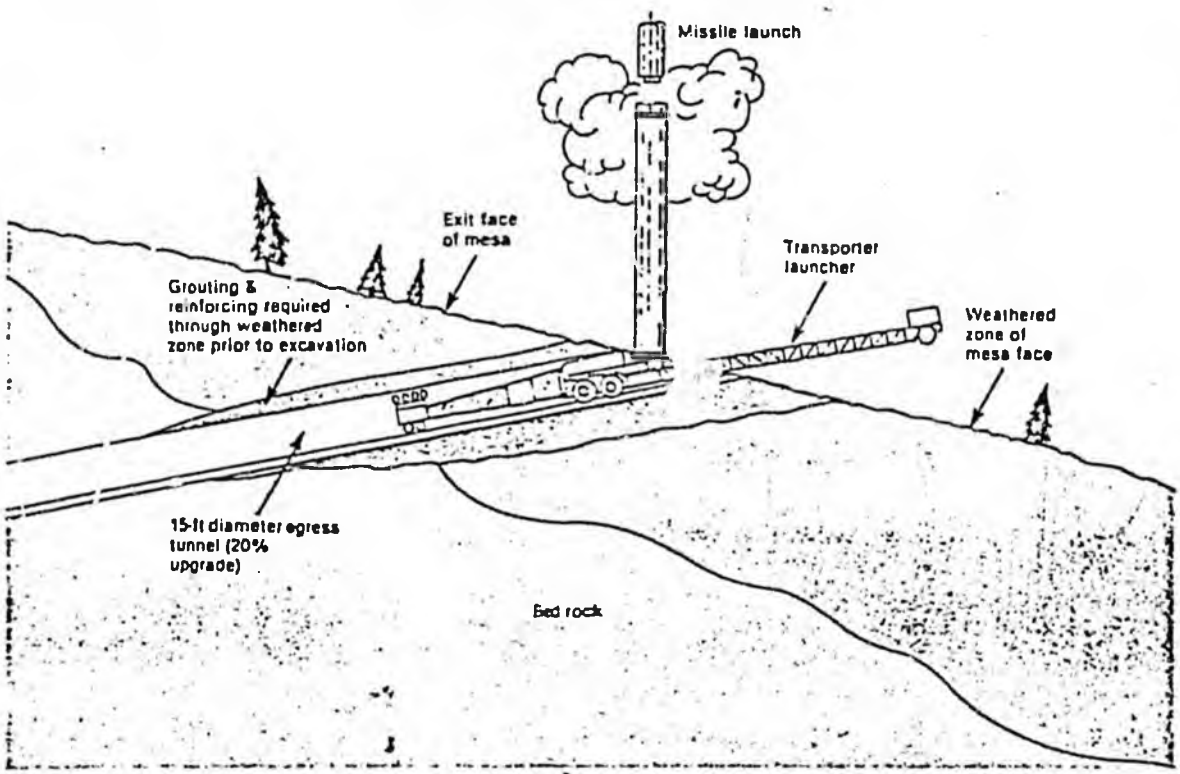
Figure 121.—Transporter Launcher



Length	35 m	(115 ft)
Width	3.5 m	(11.5 ft)
Height	3.5 m	(11.5 ft)
Weight	135,000 kg	(300,000 lb)
Drive motors (3)	350 hp each	

SOURCE: Office of Technology Assessment.

Figure 122.—Missile Launch



SOURCE: Office of Technology Assessment.

Figure 123.—Land Area Requirements

SOURCE: Office of Technology Assessment.