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OSD
5 U.S.C. § 552 (b)(6)

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Senate Armed Services,
SCte on R&D
Subj: MX
Wit: Dr. Wm. Perry, USD for R&E
UnderSecAF Antonia Chayes (Additional witnesses are Seymour Zeiberg, OUSD/RE
GEN Lew Allen, USAF, CoS Sidney Drell, DepDir Stanford Linear acc by
Time: 0805 - 1215 C.Stanford, CA.)
Pages: 1 - 136

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Senate Armed Services Cmte R&D Subcmtee	MX Missile System 30 April 1980	PAGES ____ THRU ____ HEARING: CLOSED/OPEN CLOSED CLASSIFICATION

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U.S. SENATE ARMED SERVICES COMMITTEE

RESEARCH & DEVELOPMENT SUBCOMMITTEE

MX MISSILE SYSTEM

THIS IS A COVER SHEET

[redacted]

ASSISTANT SECRETARY OF DEFENSE (PUBLIC AFFAIRS)

30 APRIL 1980

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U.S. SENATE ARMED SERVICES COMMITTEE
RESEARCH & DEVELOPMENT SUBCOMMITTEE
MX MISSILE SYSTEM — 30 APRIL 1980

MISSING INSERTS:

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3 OF 3

Stenographic Transcript Of

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HEARINGS

80-79

Before The

Subcommittee on Research and Development

of the

COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

MX MISSLE SYSTEM

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CONTENTS

MX MISSILE SYSTEM

- - -

WEDNESDAY, APRIL 30, 1980

- - -

United States Senate,

Subcommittee on Research & Development of the Committee on Armed Services,

Washington, D.C.

The subcommittee met at 8:05 a.m., pursuant to notice, in room 212, Russell Senate Office Building, Senator John C. Culver (Chairman of the subcommittee) presiding.

Present: Senators Culver, Stennis (chairman of the full committee), Cannon, Byrd, Jr., Nunn, Levin, Goldwater, Warner and Jepsen.

Present also: Senator Hatch.

Staff Present: Francis J. Sullivan, Staff Director; Rhett B. Dawson, Counsel; Brenda Hudson, Clerical Assistant; Ronald F. Lehman, Prof. Staff Member; E. George Riedel, Prof. Staff Member; James C. Smith, Prof. Staff Member; John T. Ticer, Chief Clerk.

Also present: Frank Ganney, Asst. to Senator Jackson; Frank Krebs, Asst. to Senator Cannon; Charles Stevenson, Asst. to Senator Culver; Greg Pallas, Asst. to Senator Exon; Peter Lenon, Asst. to Senator Levin; Christopher Lehman, Asst. to Senator Warner; David Sullivan, Asst. to Senator Humphrey; Arnold Punaro,

Asst. to Senator Nunn; John Haddow, Asst. to Senator Hatch.

Senator Culver. The committee will come to order.

This is the second hearing held this year by the R&D Subcommittee on the MX program. At our last hearing on March 12 we were told that the Administration was reviewing the basing plans for the MX looking towards making some refinements to the plan proposed by the President last September. We were promised the results of that review by the end of April and indeed we have received those results in a letter from Secretary Brown, dated April 29, 1980.

I think each of the members has a copy of that correspondence before him this morning. A major part of this hearing will be devoted to examining the changes proposed in Secretary Brown's letter.

This year's decision on the basing mode for the MX is a critical decision. If we delay making a commitment to a specific basing plan beyond July of this year, we either delay the IOC of the system or we start paying substantial funds to move more than one basing option towards a 1986 IOC. As I understand the situation we have very little slack in the schedule so that any additional basing options that we wish to pursue will have to be developed at roughly the same rate as the primary basing mode or else they will not meet the IOC of 1986.

If that is correct, and we will want to pursue it in the hearing, then we do not have the option of keeping several basing

modes alive for just a few million as we have done in past years.

We have also heard some discussion about split basing, that is, part in Nevada and Utah and part in other areas of the country. We need to understand the impact of this concept including possible ~~sights~~ sites for split basing, the added cost to the system, and the operational implications of split basing.

Another concern is the timing of submission of the Environmental Impact Statement, the request for withdrawal of land from the Federal land bank and the commitment of $560 million for basing in FY 1981 before those actions are completed.

Our Department of Defense witnesses are: Dr. William J. Perry, Deputy Under Secretary of Defense for Research and Engineering; Ms. Antonia Handler Chayes, Under Secretary of the Air Force; and General Lew Allen, Jr., Chief of Staff, United States Air Force.

In addition to the Department of Defense witnesses we have Dr. Sidney Drell from Stanford University. As most of you know, Dr. ~~Drell~~ Drell is associated with a concept called SUM (Shallow Underwater Missile). This concept has received some attention and I thought it would be useful for the Committee to hear from him and have an opportunity to question him. We will hear first from the Department of Defense witnesses and have an opportunity to question them before we hear from Dr. Drell.

Senator Goldwater, do you wish to make an opening statement?

Senator Goldwater. I don't have a formal statement, Mr.

~~TOP SECRET~~

Chairman. I think the problem we face is that when we started talking ~~XM~~ MX, I guess three or more years ago, it was a new missile to carry on from the Minuteman. That is what it was until the President decided, ~~all~~ IN all due respect, to try to placate some of the members of this committee who wanted to spend more money on defense, to do it through the so-called MX system. That is when we developed different approaches to launching.

One was tested in my state of Arizona, a ~~variable~~ TRENCH system. Then came the so-called race track system. I don't think that the MX per se was in any trouble at all. I think it would have gone through without any argument. The argument that you ~~gentlemen~~ GENTLEMEN may face is the basing mode. I don't mind telling you that you face a little trouble with me because I would much rather spend the extra billions of dollars on aircraft and ships than I would to figure out a complicated system and hide ~~it~~ IT off in the deserts of the West.

Not that we object to the placing of it but I just can't see that much more money for one system to carry merely a nice looking advanced Minuteman. That is my position. I remain to be convinced.

Senator Culver. Mr. Chairman.

Chairman Stennis. Thank you.

I am delighted to be here. I appreciate what your subcommittee is doing.

Senator Culver. Dr. Perry, you may proceed.

STATEMENT OF DR. WILLIAM J. PERRY, DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

Dr. Perry. Thank you, Senator Culver.

~~I have discussed with this committee on several previous occasions ...~~

~~Senator Culver. Excuse me. Could you use the microphone.~~

~~Mr. Perry: Certainly.~~

~~I say~~ I have discussed with this committee on previous occasions the requirements for the MX system. I won't go into those in detail this morning. I will just recapitulate very briefly the main lines of our rationale. It begins with our assessment that the Minuteman, as it is now based in silos, will become vulnerable to a surprise attack by about [1982.] This arises because of a combination of two circumstances. First of all, the Soviets, during the 1970s, made multiple reentry vehicle systems out of their ICBMs. That is, they MIRVd their ICBMs, thereby going from [1500] missiles with [1500] warheads to [1500] missiles with about [6,000] warheads. ~~and~~ by [1982] they will have that many warheads deployed.

JS 3.3(b)(2)

The evolution of that is still in process.

Secondly, [in ~~1977,~~ December 1977, they began testing a new

[redacted]

[redacted]

Therefore, we conclude from this that a fixed-point basing of the Minuteman or any other ICBM is not survivable. There is no way that we can harden the shelter in which the Minuteman is located to protect it from an attack of that lethality and that accuracy. More generally then, we reach the conclusion that fixed-point basing is an inadequate way of protecting an ICBM. For nearly 20 years the silos have provided the protection for ICBMs but that day is over. They will not be capable of providing that protection in the future.

That is the driving force which leads us not so much to design a new missile, although that is desirable in itself, but rather to find a way of basing that missile which can protect it from a surprise attack and give it effectively the same protection that the silos have given the Minuteman system ever since the early 1960s.

We have discussed with this committee a number of alternative solutions to that problem. One that is often mentioned is to simply put our ICBM force in a launch on warning mode, on the basis of our radars and infra-red warning system warning us of an attack coming from the Soviet Union, it is proposed we should launch our ICBMs before that attack arrives, thereby

making the hardness of the shelter system a moot point.

I have argued to this committee a number of times that I think that would be a very unwise, ~~a~~ very dangerous course for the United States, indeed for the whole world. The problem is two-fold. First of all, the dynamics of the situation, of the ICBM flight time and the way the warning systems operate, would allow the President and the National Command ~~Authority~~ AUTHORITIES on the order of about [redacted] to make that decision. When you consider the gravity of the decision that ~~he is~~ THEY ARE making, that is a very small amount of time. JS 3.3(b)(4),(8)

Secondly, and perhaps even more importantly, if the Soviet Union were to launch an attack against our missile systems, it is without question, I believe, that they would launch ~~an attack against the warning systems,~~ A synchronized attack against the warning systems. Whether that ~~was~~ WOULD BE an attack with missiles, ~~whether it was~~ an act of sabotage, ~~whether it was~~ OR jamming, we ~~could~~ CAN not predict, but they would surely attack the warning system at the same time that they attacked the missile system. JS 3.3(b)(4),(8)

Therefore, the [redacted] which we imagine the President might h[redacted]ould not be [redacted] in which he would be confronted with data about where missiles were and when they would land in the United States and how many there were. Those [redacted] would be a period of time in which it would be reported to him that our warning system was malfunctioning in some way. On the basis of that information ~~his decision as to~~ HE WOULD HAVE TO DECIDE whether to

launch an attack OR NOT.

We believe that would be a very dangerous course and that the only way of avoiding that course is to provide our ICBMs with a sufficiently survivable basing system that the President would have the option of being able to ride out the attack as he has today.

We have also discussed with this committee the alternative of essentially ~~abandoning~~ ABANDONING our ICBMs, giving up our land BASED missiles and basing all of our ballistic missiles in submarines. Indeed, during the 1980s we will be, to a great extent, leaning on our submarine missile forces. During that period of time we have good confidence that that dependence will be well placed. That is, that the submarines will in ~~fact~~ FACT be invulnerable from attack.

What we have to contend with, ~~though~~ if we make the decision to put all our missiles into submarines, is that eventually the submarines too may become vulnerable to attack. During the 1990s we may find the submarines facing the same kind of vulnerability concerns that we now feel with our land based missiles and silos.

The decision ~~then~~ which we would make this year to place ~~our~~ THE dependence of ~~the~~ OUR strategic ~~deterrence~~ DETERRENT in submarine forces is in effect gambling that between now and the 1990s the Soviets will not be able to develop an adequate anti-submarine warfare system to enable them to detect ~~an~~ AND attack ~~from~~ our submarines at sea. That is a very significant decision for the United States

to make. It is a decision which ~~is~~ involves trying to project technology ~~19~~ 15 to 20 years in the future in an area which is fraught with uncertainties.

I have told the committee before, and I repeat now, that I think that would be a very unwise decision, notwithstanding my view that the submarines are a crucial part of our strategic forces and I believe will remain a part of them for the indefinite future.

If we then conclude that we need a land based missile system in our strategic forces, the question may be raised, indeed has often been raised, why do we have to go to such a complex and expensive basing system? Isn't there something simpler and less expensive that we could devise? I have stated before that there is no fixed-point system that can survive an attack of the nature that the Soviets can now achieve on the United States.

That is the single most important point which drives our system design. The simplicity of going to a single fixed-point base for each ICBM is simply no longer available to us. We are driven by the quantity and by the accuracy of the Soviet ICBMs to find some sort of mobile basing system. ~~We have looked and~~ I have reported to the committee on the studies we did in the air mobile, achieving the mobility in our ICBMs by putting them in an airplane, ~~and~~ we concluded that that approach was even more complex and even more expensive than the land mobile system which we now c l the MX.

The problem basically has to do with the size of the attack which the Soviets are capable of launching. Our present strategic airplanes, with the kind of hardnesses now built into them, have a vulnerability area of abou[redacted] ~~and therefore~~ for the size attack we are projecting, [redacted] warheads, we see that [redacted] warheads times [redacted] per warhead can attack an area of [redacted] which is to say that [redacted]

JS 3.3(b)(2),(4),(8)

[redacted]

~~Airplane missiles~~ AIRPLANES which are located near the coast would be subjected to a different kind of attack, namely an attack from submarine missiles which have a much shorter flight time. ~~and~~ therefore ~~they~~ AIRPLANES could be attacked at or near their bases.

For those ~~reasons~~ REASONS we concluded that the air mobile system, by the time you design an airplane hard enough to minimize the effect of that problem, ended up being more complex and more expensive than land basing.

We also looked at road mobile systems, missiles which were on transporters and moved around on roads. We concluded if we put these on the public highway system there was an unacceptable ~~liable~~ danger of an accident ~~occuring,~~ OCCURRING, an accident involving not only a nuclear warhead but the highly ~~volatile~~ INFLAMMABLE fuel, ~~highly volatile~~ IN THE rocket, ~~which propels the warhead. And~~ if we would take

this road mobile system and contain it, for example, on military reservations, allowing it only to move within the military reservations thereby avoiding the problems of having it move on the public highway system, ~~that~~ THEN that system now, because of the ~~contained~~ CONSTRAINED area, ~~became~~ BECOMES subject to a barrage attack.

The only way to deal with the problem of the barrage attack was to provide a high level of hardening around the missile at the time the attack came, ~~and~~ that meant putting it in some sort of hardened shelter which takes us full circle. It takes us back to a Minuteman-type silo or shelter of some sort.

But we had to add an additional complication which is providing enough shelters that the Soviets could not attack all of the shelters that we built. That then led us into the system known as multiple protective shelters where we envisioned several thousand shelters, several hundred missiles, and ~~basing the missiles,~~ moving the missiles around in such a way that the Soviets would never know at any one time which missile was in which shelter.

That was the logic then which took us to the multiple protective shelter system as a way of basing our ICBMs, ~~and~~ it was fundamentally responding to this extremely difficult problem; facing a threat in which the ATTACKING ICBM was very accurate SO THAT a single warhead can destroy a single shelter and where we were contending with thousands of warheads.

In our base-line threat, ~~our~~ THE minimum threat that we are

designing against, we are envisioning ABOUT 6,000 ICBM warheads. In various excursions of this threat we are considering what would happen if there were no SALT treaty. For example, we have to contemplate the threat rising ~~from~~ TO 14,000 ICBM warheads. So we are trying to design a system which can survive an attack from 6,000 to as many as 14,000 ICBM warheads, each of which is accurately delivered and each of which has a yield of perhaps up to [redacted] I submit to you that that is an extremely difficult problem. JS 3.3(b)(8)

The question then is why is this basing system so complex? The fundamental answer to that is because the problem that we are confronting is so enormous.

~~Now~~ having said that, let me disclaim to a certain extent one aspect of complexity in this system. There is nothing technically difficult about the MX system relative to ICBMs that we have built in the past AND relative to missiles that we are building today. It consists basically of a missile, ~~of~~ a transporter-erector-launcher, ~~of~~ a shelter system, and a road network. Let me mention each of these very briefly.

The missile is a straightforward evolution of the Minuteman missile or, for that matter, the Trident I, ~~so-called~~ OR C-4 missile. It uses the same rocket technology as the C-4 which is now being deployed in the submarine forces and it is about twice the size of either the C-4 or the Minuteman. We see no technical risk associated with building this missile.

The transporter-erector-launcher is a big machine but it is at the same level of complexity as the big earthmoving equipment which is standard in the construction industry today. ~~and~~ there are a number of machines that have been built that size, of that complexity, and we intend to go to companies that build those kinds of earthmoving equipments for the design of this particular transporter-erector-launcher. So it is a big impressive vehicle to stand beside but it presents no technical challenge, no technical risk.

The third item in the system is the shelters. The shelters are fundamentally concrete garages. They are, in fact, simpler than the silos which we designed and built for the Minuteman system in the early ~~60's~~ 1960s. The fundamental difference between Minuteman and the MX system is that instead of the Minuteman having a thousand shelters for a thousand missiles we are proposing 4,600 shelters for 200 missiles. So there is a difference in scale but not in complexity.

Finally there is a road system connecting these shelters. ~~and~~ I think American technology is up to the challenge of building aggregate roads that ~~ties~~ Tie these shelters together. There are lots of miles of roads, something probably in excess of 8,000 miles of gravel roads involved. But to say that this is complex is really misunderstanding the nature of the system.

So if ~~you~~ we look at the system in its aggregate we find it sometimes difficult to explain, not because the system is difficul

and complex but because of the way the system would operate. The way it would achieve its security, its secrecy of location, is complicated and difficult to explain but the system is not technically complex.

Now, I have a few charts. Let me go through the design evolution of the system and describe the particular form of missile, transporter-erector-launcher, shelter, and roads that we are proposing to build. 14A

SLIDE PRESENTATION

SLIDE 1

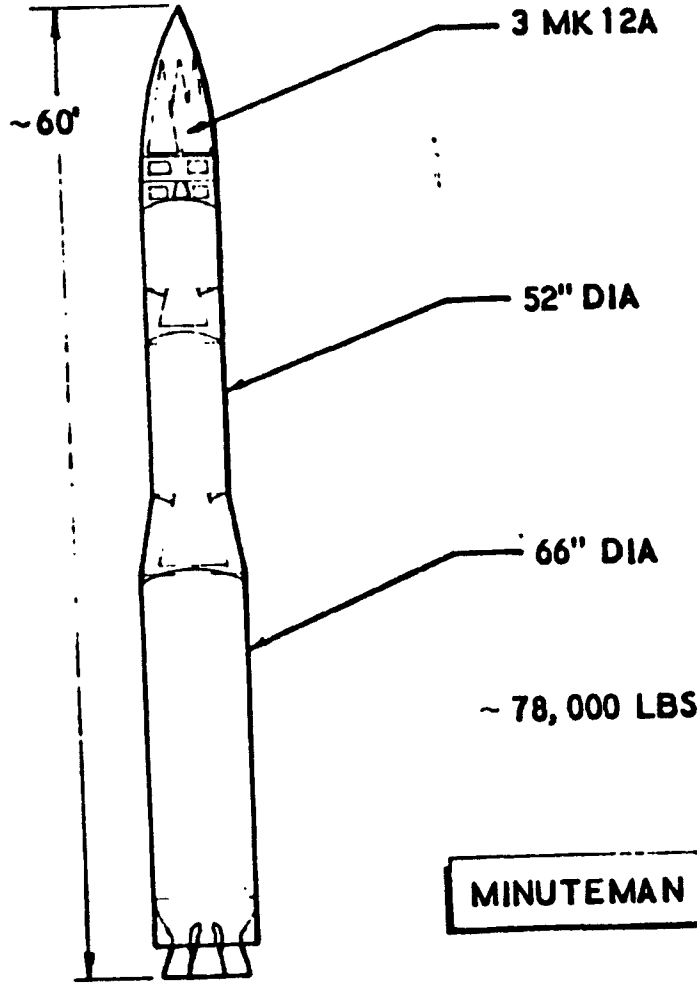
Dr. Perry, I won't dwell on this chart. It is one that you have seen before. This simply compares the Minuteman and the MX missiles. It underscores the point that this is an evolution from the system we have built before. A better comparison would be with the Trident I (C-4) ~~or the C-4~~ missile because the Trident is somewhat larger than Minuteman and it uses the advanced solid rocket fuel technology which we propose to use.

I was out at the rocket ~~manufacturers, rocket~~ developer's company and was interested to see the ~~Trident with the~~ C-4 rocket side by side with the new MX ~~X24~~ rocket that was being developed. It was very comparable technology. 14B

SLIDE 2

This represents three different kinds of transporter and shelters that we have looked at during the full-scale engineering development phase of this program. This is the vertical shelter, ~~and~~ here is a picture of the design of the transporter and how it would lower the missile in the cannister into the shelter. This is what we call

Missile Comparisons



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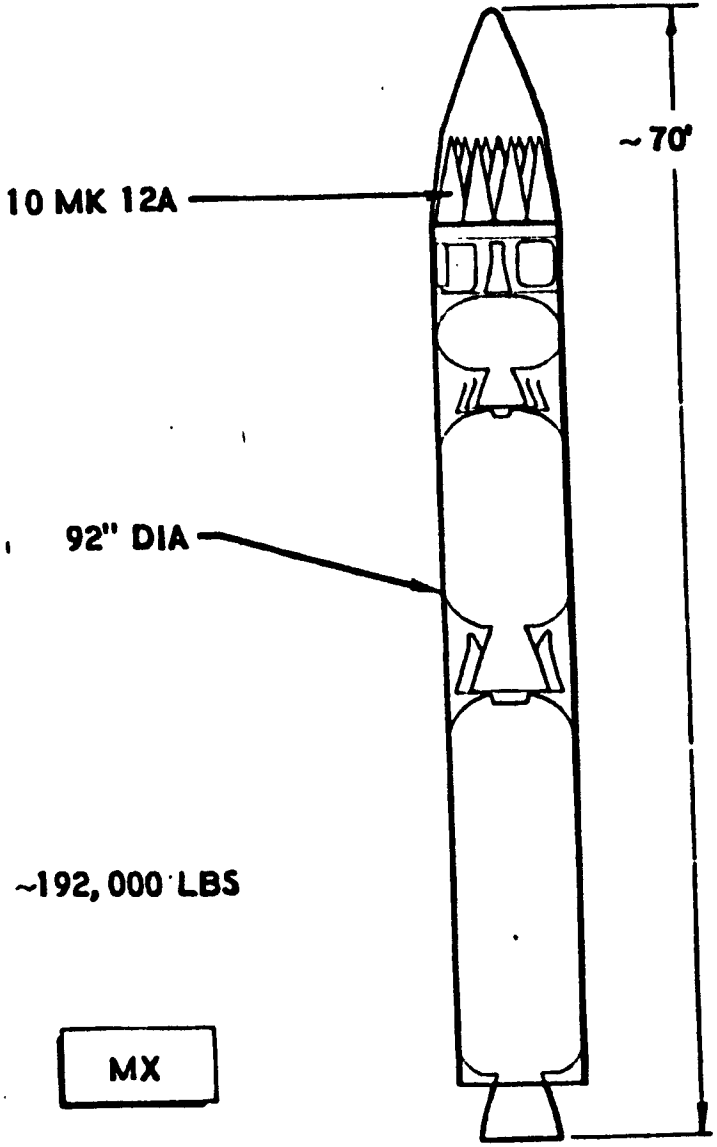
MINUTEMAN III



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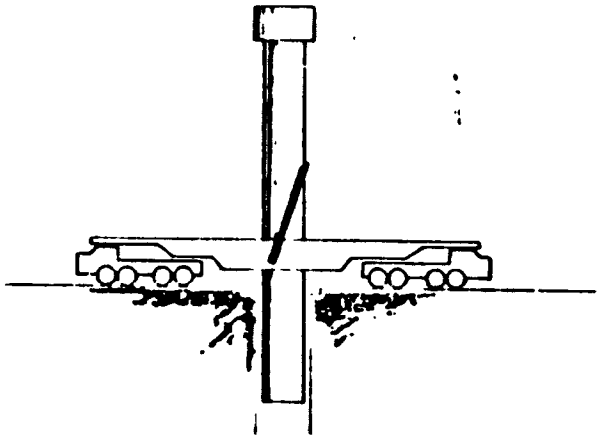
MX

14A

MPS DESIGN ALTERNATIVES

VERTICAL SHELTER



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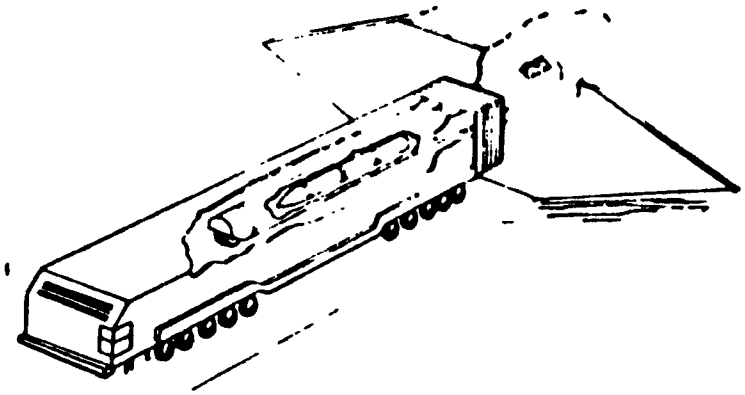

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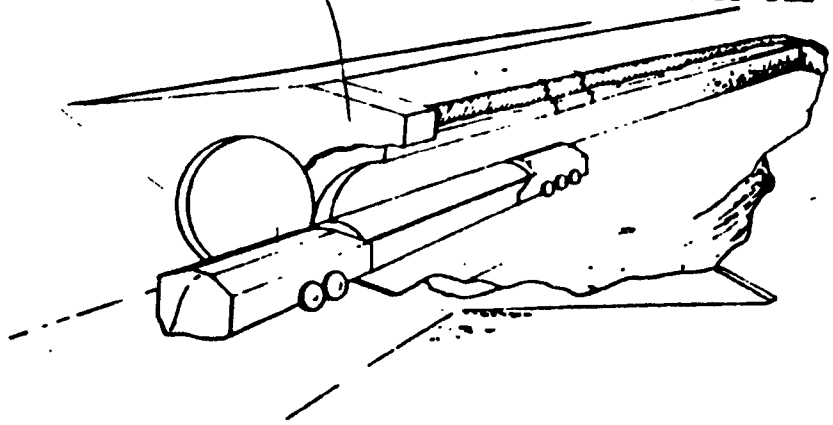

the integral ~~shell~~ TEL which has the missile and the erector-launcher integral to the transporter so that the entire system moves into this horizontal shelter. That is contrasted with this shelter in which only the missle and launcher goes into the shelter and the transporter then drives away.

We have been examining in the last six months a type of system, you might say, in which we maintain a horizontal shelter but, unlike this base-line work on the shelter system, we detach the missile and launcher and only move ~~in~~ IT into the shelter and then drive the transporter away, much as we propose to do with the vertical shelter.

The ~~advantage~~ ADVANTAGES of this system are that the transporter-erector-launcher is simpler in design, that a ~~shell~~ SHIELD is not required to protect the security of whether or not you have a missile located here, and finally the shelter itself is simpler and smaller. Basically we have been examining this change to the horizontal shelter system because we believe that the ~~system,~~ resulting ~~syste,~~ SYSTEM would be considerably cheaper.

15A

This shows that difference in a little more detail. The base-line system, the missile, the launcher, the transporter are all one vehicle and the entire vehicle is put in the horizontal shelter.

15B

By comparison, this design variation has the missile and launcher as a detachable unit. It is carried on a transporter, moved up to the horizontal shelter, and then only the missile launcher goes into the shelter, ~~and~~ the transporter then drives away.

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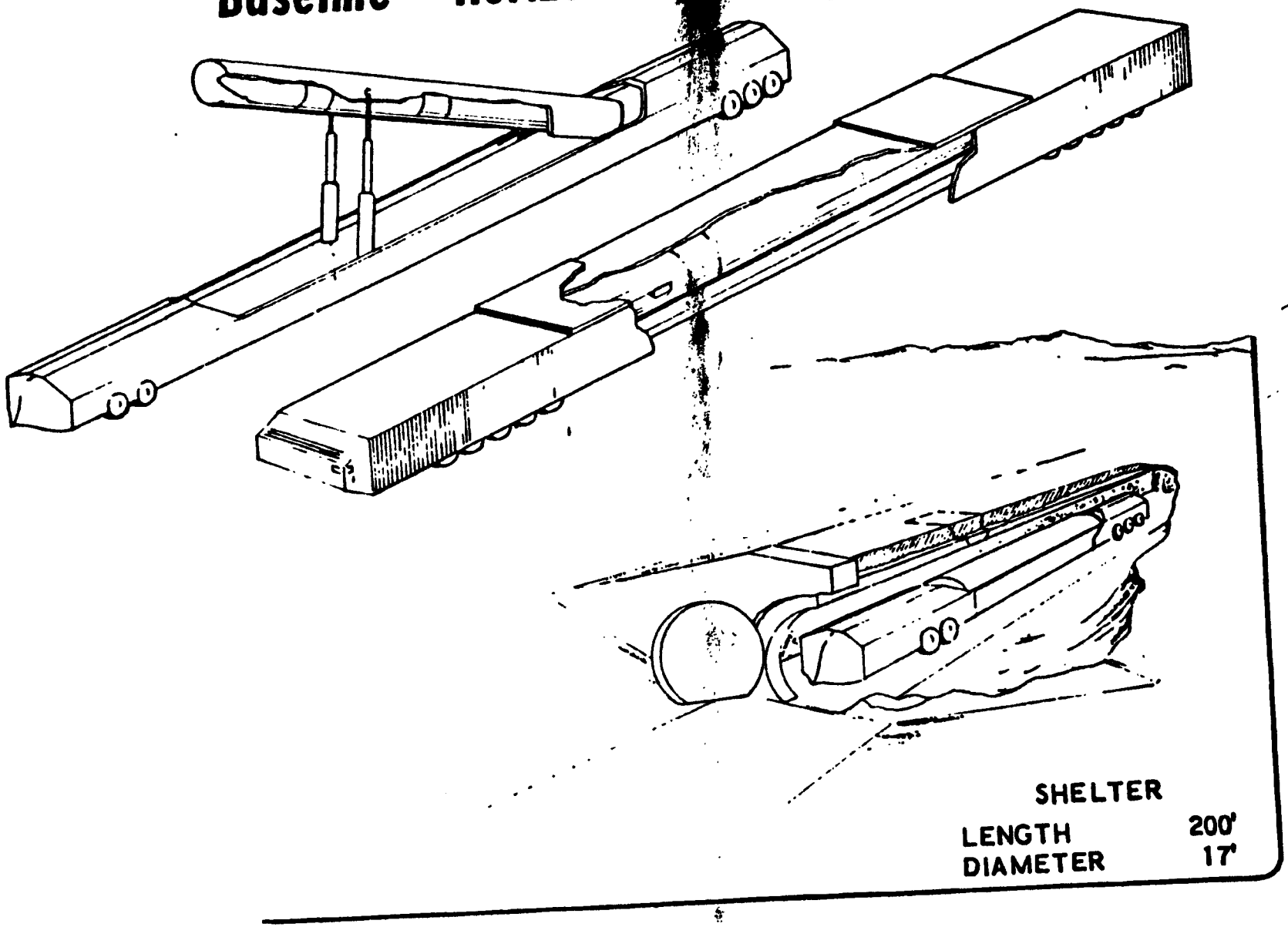
Baseline - Horizontal [redacted]PS System



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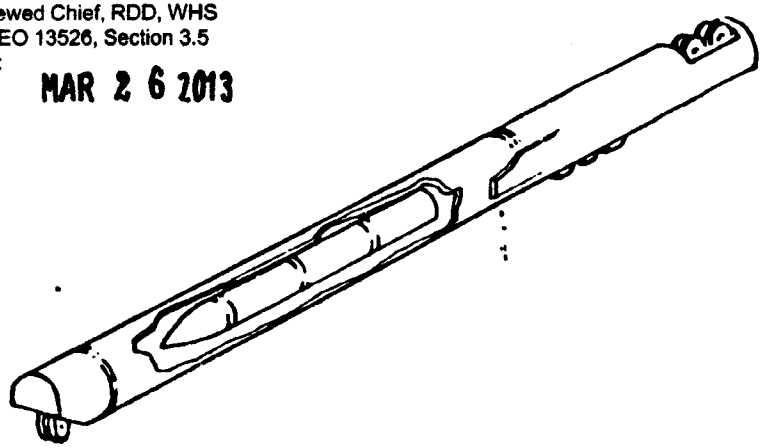
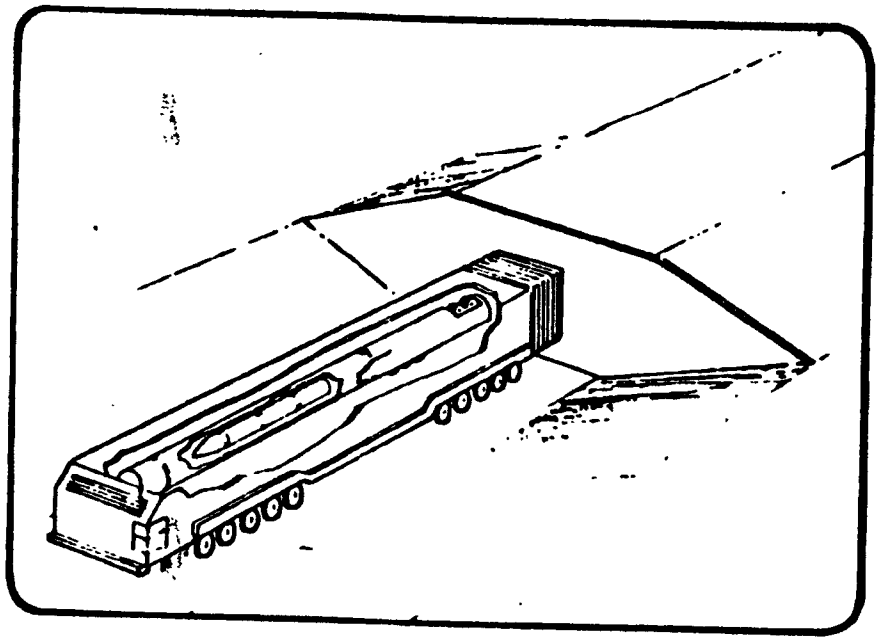
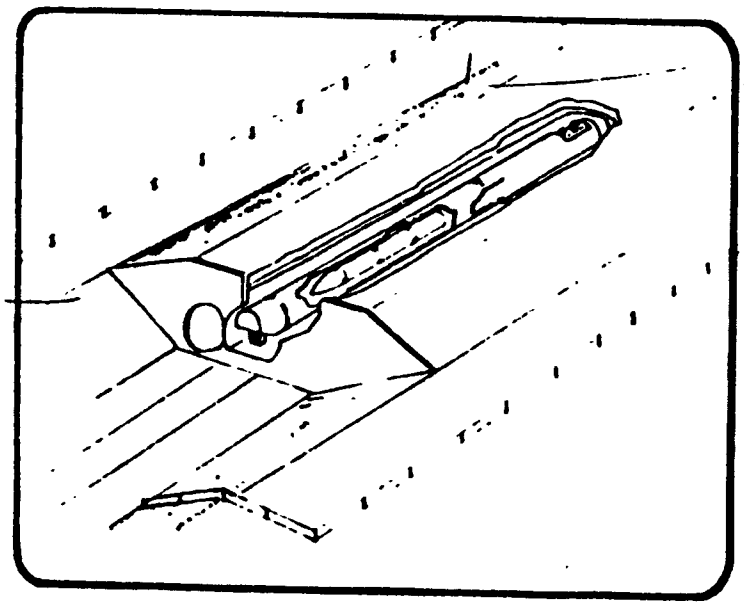
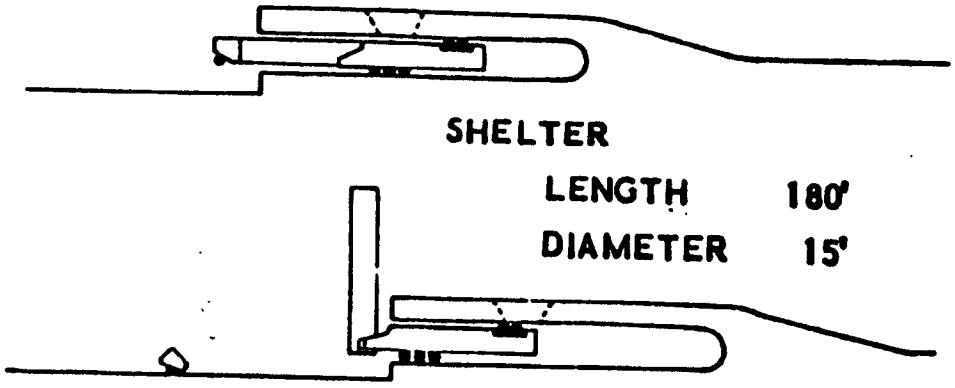
Horizontal MPS System - Design Evolution









This missile would be launched by pushing it out through the shelter, ~~and then with~~ a cantilever arm ~~raising~~ the missile vertically for a vertical launch.

That is in contrast to the earlier design where we had envisioned the missile breaking through the top of the shelter.

Senator Warner. Dr. Perry, may I interrupt? I want to chat with the Chairman for a minute.

~~Mr.~~ Dr. Perry. Surely.

Senator Culver. Would you proceed, Dr. Perry.

~~Mr.~~ Dr. Perry. I would like to report to you that the engineering studies which we have been doing the last six months and which we promised to report to you on and which we will make technical comparisons of these three ---

Senator Culver. Excuse me. Would that cantilever be attached to the rear, the base of the missile launcher itself that you have already inserted or would that be positioned on the exterior of the shelter?

~~Mr.~~ Dr. Perry. I am sorry.

Senator Culver. I can't conceptualize how one should back it out. Then I gather you put it in a firing launch position.

~~Mr.~~ Dr. Perry. Imagine my arm is the transporter-erector-launcher. I move the first half of it from here to my elbow out and then I just raise it up like that, the same way I am raising my arm, the same kind of linkage, about half stays inside the shelter. The wheels indicate where the pressure points are.

It is a fairly minor technical detail but the reason for instituting that change instead of going through the roof is that we found that we could ~~ge~~ GET considerable weight saving in the transporter-erector-launcher by doing that and the weight saving led to a reduction in THE requirement for horsepower and size. Basically it is a cost reduction MODIFICATION.

We have looked at these technical features, as I have said, for the last six months or so. We have been looking at the whole design much longer than that but in particular WE have been comparing these three different technical approaches. We have come to the following conclusion.

First of all, we reaffirmed our belief that the multiple protective shelter is the preferred basing mode for the MX.

Secondly, we have reaffirmed our view that a horizontal shelter is ~~to be~~ preferred over a vertical shelter. Briefly the reason for that is that it is possible to move the missile out of one horizontal shelter into another horizontal shelter in a matter of minutes, particularly less than ICBM flight time, and WE have not found any way of doing that with the vertical shelter. The most optimistic view we would have of taking the missile from one vertical shelter and putting it in another is that it would take longer than an ICBM flight time.

Therefore, with the horizontal shelter if for any reason we lose the security of ~~the~~ THE location of the missiles, we have the option of rapid reconfiguring, whereas with the vertical

shelter that option does not exist. Therefore, we believe we can have more confidence in the survivability of the horizontal system than we can in the vertical system. That is the major ~~facer~~ FACTOR that drives us toward the horizontal system.

The first conclusion is reaffirming a multiple protective shelter, the second is reaffirming the horizontal shelter. The third conclusion, however, ~~was that~~ REFERS TO the design evolution that I have described here, which involves decoupling the transporter from the erector-launcher and sliding only the missile and launcher into the shelter instead of driving the entire vehicle in. The conclusion we came to was two-fold. First of all, it is technically feasible and leads to ~~a~~ AN operationally desirable configuration, ~~and,~~ second, it is substantially cheaper. We estimate that the reduction in cost is probably going to be on the order of $2 billion if we take into account all of the changes that are implied by this design decision, SUCH AS different cost in the transporter-erector-launcher, removing altogether the requirement for building what we call the visibility shield, and the smaller and simpler shelters resulting from that. The aggregation of those simplicities in the system will involve a reduction in cost approaching $2 billion.

For that reason, then, we have concluded that this design ~~evolution, design~~ change in ~~a~~ THE horizontal system is a preferred one and ~~a~~ I HAVE recommended ~~procedure in the system~~ PROCEEDING with this version of the horizontal shelter system rather than the base line

which I showed you ~~earlier~~ EARLIER.

I would like to comment briefly on the difference in operational deployment among these three systems.

First of all, ALL three designs would operate as multiple protective shelters. That is, ~~99.9~~ 99 percent of the time the missiles would be in shelters and security would be obtained by the belief that the Soviets would not know which ~~shelter~~ SHELTERS the missiles were in. Therefore we would have to take steps to maintain that security. In all systems, the way that would be done is that when we deposited the missile in the shelter, whichever one of the designs, that would be done in such a way that an observer could not tell whether the missile had gone into the shelter or not. That is, the transporter, when it was moving the missile, would go to each one of the 23 shelters. It would simulate putting the missile in 22 of them but in fact would put it into only one. The observer could not tell which of the shelters the missile went in.

That is the basic security system. The difference in the systems is what we could do if we believed that our security was compromised and, particularly, what options we might have if the system were to come under attack or was under attack.

In the case of the vertical shelter system basically there is nothing we could do at that stage. It would take us perhaps a day, OR MORE to reconfigure the entire system and move missiles from one shelter to another. In the case of the base-line system in which

~~system in which~~ the missile was sitting on the transporter in the shelter it would be possible to move each missile from its shelter to any other shelter in less than a half hour. In this system the operational flexibility is different from that and it is as follows:

A certain percentage of these missiles would be kept on the transporter and stored with the transporter in the garage which was the shelter for the transporter. For those missiles it would be possible to move fast and quickly from the garage to any one of the shelters, ~~just as the original base line system would be fast~~. So, which one of them had dash capability depended on which missile you kept in the garage.

In effect it was a concept similar to the B-52s where a certain percentage of them were kept on ~~strike~~ alert. That might be 30, 40 or 50 percent depending on the ~~state of tension~~ in the world. In addition to that if you had any reason to believe that the system was in danger, for example, if you detected many submarines moving close to the shore of the United States, you might elect to put all the missiles on transporters, leaving them either in the garages or between them on the roads. That would be the maximum alert form of the system. It would be what you would do or it would be an option open to you if the country were to go into an alert.

Senator Nunn. Would you mind repeating that. What is the maximum alert system? I did not quite understand.

Dr.
~~Mr.~~ Perry. Basically, if the danger to the system, for example, were perceived to be from a submarine attack, with many submarines in close to the shores of the United States, and if we believed that the system security was compromised, a worse case threat, in that case you would put a high percentage of these missiles on alert. That means moving them on the transporters so that they could be poised to dash to a different shelter if needed.

If, in a high alert, you believe the security of the ~~systems~~ system was maintained you would probably leave them where they were in the shelters. That is just an option depending on the state of crisis in the world.

In all cases, you have the option of maintaining security just by leaving them in the shelters. In the case of the two systems with horizontal shelters you have an additional possibility of moving them on warning.

I want to stress one point here. I don't envision these systems being moved except occasionally, every few months, ~~because~~ the image that we would ~~be having~~ move these systems continually moving around the road is not correct. Nearly all the time these systems would simply be sitting in the shelters. What we are describing is an option to move them quickly if a combination of the circumstances in the world plus the concern about having security broken existed. In that case you would have the option of being able to move. 21A

This map represents in blue the valleys which have been located

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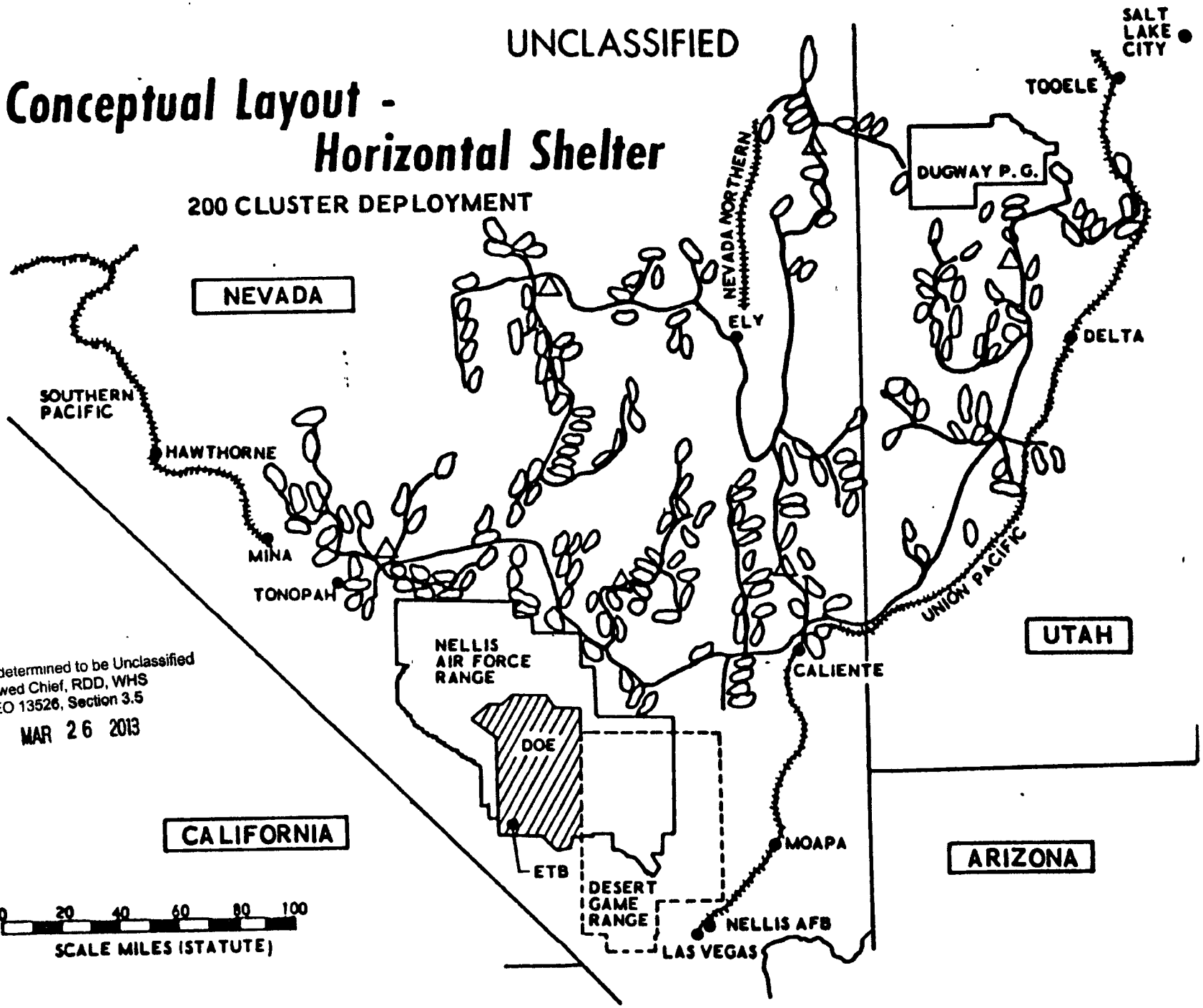
Conceptual Layout - Horizontal Shelter

200 CLUSTER DEPLOYMENT



UNCLASSIFIED

2/A

in Nevada and Utah which are suitable for the deployment of the system geotechnically. I mean they have the right absence of hills, ~~and~~ the right kind of subsurface ~~soil~~ soils, not too much bedrock, and not too high a water table. These are the places where technically it would be possible to base these missiles, ~~geotechnically.~~

I would like to take one of these valleys and look at it in somewhat more detail to show you how the missiles would actually be based in one of them. ← 22A

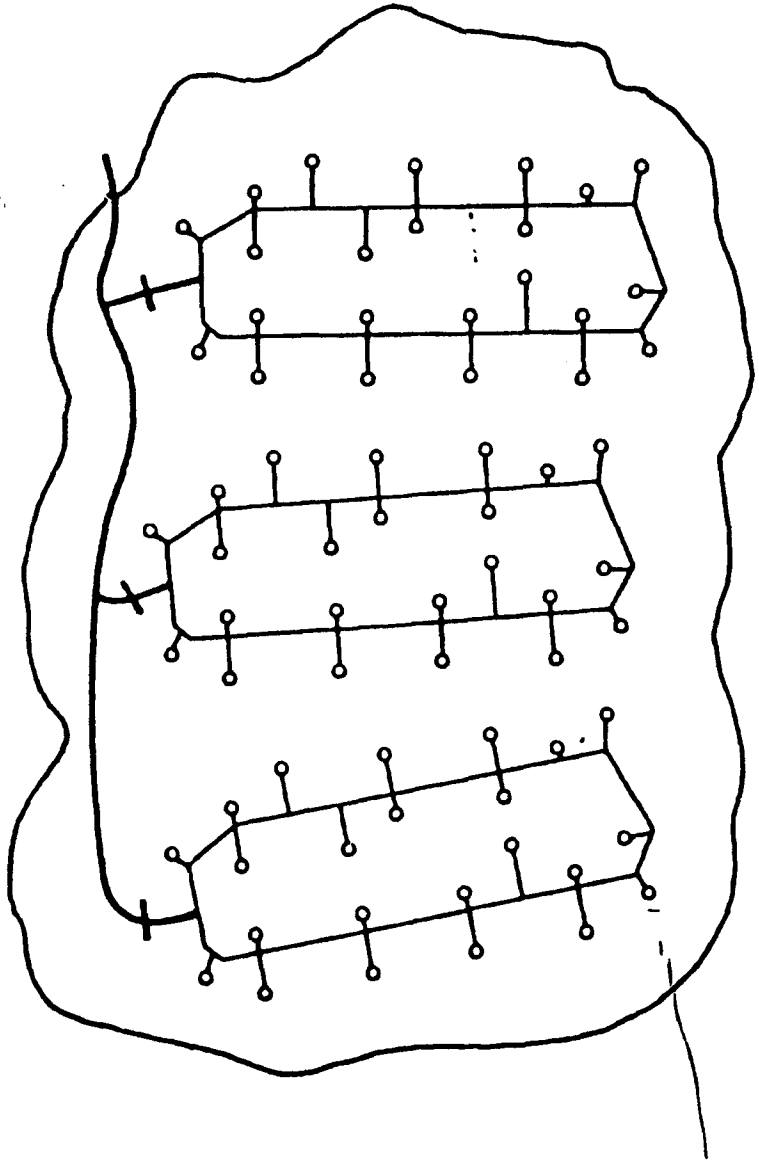
This line around here you might imagine is a contour line. As you go beyond that contour line we start to go up to elevations which are too steep to make basing the missile practicable. I am depicting here two different ways in which the missiles could be based in one of those valleys.

In this approach the 23 shelters would be located on a loop. If you want to move the missile from one shelter to any other shelter on the loop, that facilitates rapid movement because it makes them as close together as you could possible make them. I show you how you might get three different loops configured in this one valley.

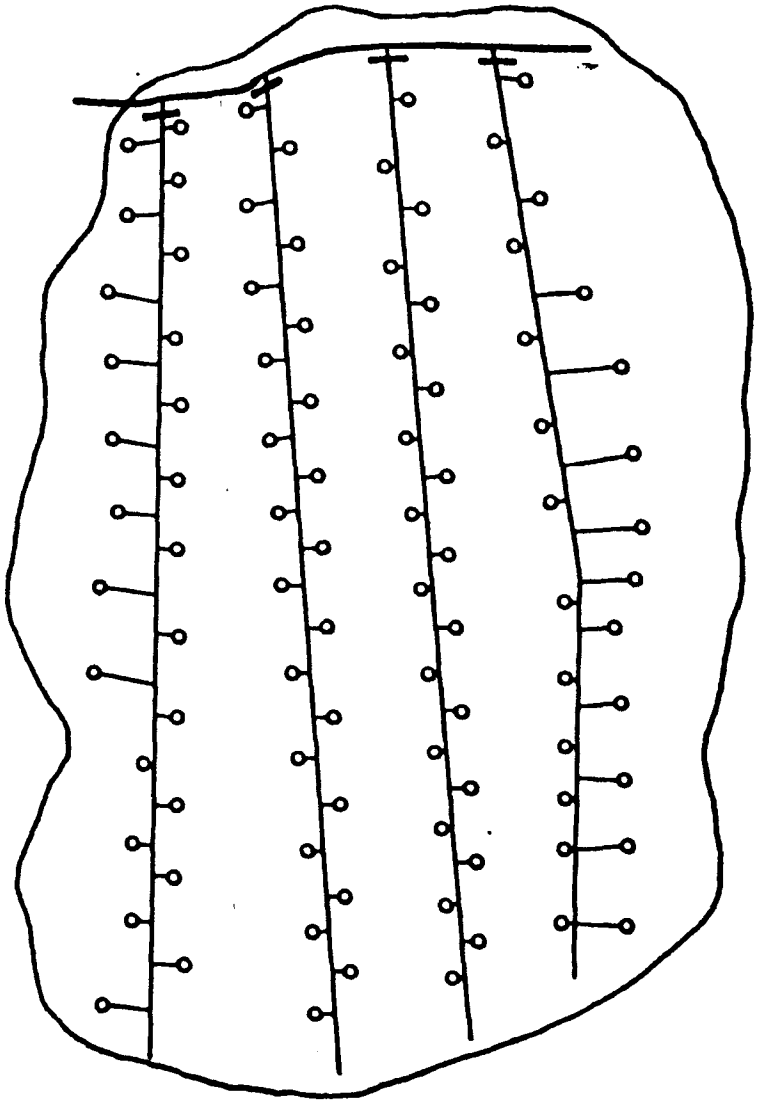
In the case of the base-line horizontal shelter system, the one we want to be able to dash from one shelter to any other shelter, this is the preferred basing mode because it minimizes the distance from any shelter in the loop to any other shelter in the loop. For either the vertical shelter system or the horizontal shelter

MX ROAD LAYOUTS

LOOP



LINE



2369-0

system that has a detachable transporter you could base them either in loops or you could base them in lines. I have depicted them in this chart by straight lines but it is by no means necessary for the lines to be straight.

Basically what we would like to do is design them corresponding to the contours of the valley. I have shown a hypothetical layout here where the 23 shelters are arranged in a straight line and I have depicted getting four different systems in this valley.

In the horizontal system in which the missile was not on its transporter the transporter would be stored in a shelter in the center, so when the missile was on it it could go either to the left or to the right and still have minimum time to get into the shelter.

I have talked about the missile, the transporter-erector-launcher, ~~about~~ the shelters, and ~~about~~ the roads. As a summary statement about the roads what I would like to emphasize is that what I have shown you here are hypothetical layouts. What we ~~would like to do~~ ARE DOING NOW is ~~give~~ THAT our civil engineers ~~the authority to go into a given valley~~ ARE TAKING CONTOUR MAPS OF VALLEYS and ~~lay~~ LAYING these lines out or ~~lay~~ LAYING these loops out, as the case may be, in whatever way ~~that~~ allows the most efficient deployment of the system and in such a way as to minimize the impact on the people who will be using that area.

I want to make one other point and that has to do with the question of how this system would respond to a buildup in Soviet ICBMs larger than projected for the Soviet forces at ~~the~~ THIS time.

I have depicted on this chart three alternative buildups. The solid line represents the buildup of Soviet ICBM forces carried in the National Intelligence Estimates under the condition of a SALT treaty, ~~under~~ AND the assumption of a moderate Soviet response. ~~what~~ THIS is known as THE moderate SALT threat.

[[That is the base-line threat against which we have designed our system.]] The ~~dash~~ DASHED line is still SALT constrained but it assumes that the ~~Soviets~~ SOVIETS do everything they can to maximize the number of ICBM reentry vehicles still compatible with SALT. Basically it assumes that they take their ~~930 MIRVd~~ 820 MIRVED ICBMs which they are allowed under SALT and [[~~to~~ go TO a ten reentry vehicle system for each one. That means they abandon the SS-17 and 19 missiles. They build ~~830~~ 820 SS-18 MISSILES or they build a new ~~missiles~~ MISSILE which has ten warheads.]]

So that leads to a buildup that you see here, substantially bigger than the ~~SALT~~ moderate SALT threat but still constrained by SALT to something in excess of [8,000] warheads.

[[I point out that if they do this under SALT they abandon the potential of making a single reentry vehicle ICBM. So it is not at all clear which of these two courses they would ~~choose~~ CHOOSE.]]

Then we have depicted ~~on~~ here one other ~~and~~ CASE. this is ~~the~~ AN NIE estimate of what the Soviets might do in the absence of the SALT treaty. This is the so-called moderate no-SALT threat. You can imagine higher buildups than this. This is the one which the NIE carries as THE moderate no-SALT threat. Notice the buildup occurs

~~TOP SECRET~~

1979 NIE PROJECTION OF SOVIET FORCES (U)

JS 3.3(b)(8)

[redacted]

~~TOP SECRET~~

24A

even back here in 1981. It shows a rapid rise beginning in 1983 and 1984, and this one buildup to more than 14,000 reentry vehicles.

I emphasize again, these are just ICBM reentry vehicles. Roughly I am looking at the disparity between a 6,000 reentry vehicle threat and a 14,000 reentry vehicle threat by 1989 which is the date by which the MX will reach full deployment.

Senator Nunn. Why the assumption on just ICBMs? Is that because of the hard target kill capability?

Mr. Perry. Yes, because during this period, during the period of the 80's we do not believe that the Soviets are going to get substantial hard target kill capability with large numbers of warheads in their submarine or bomber forces. I would not project that further. During the 80's that is the projection.

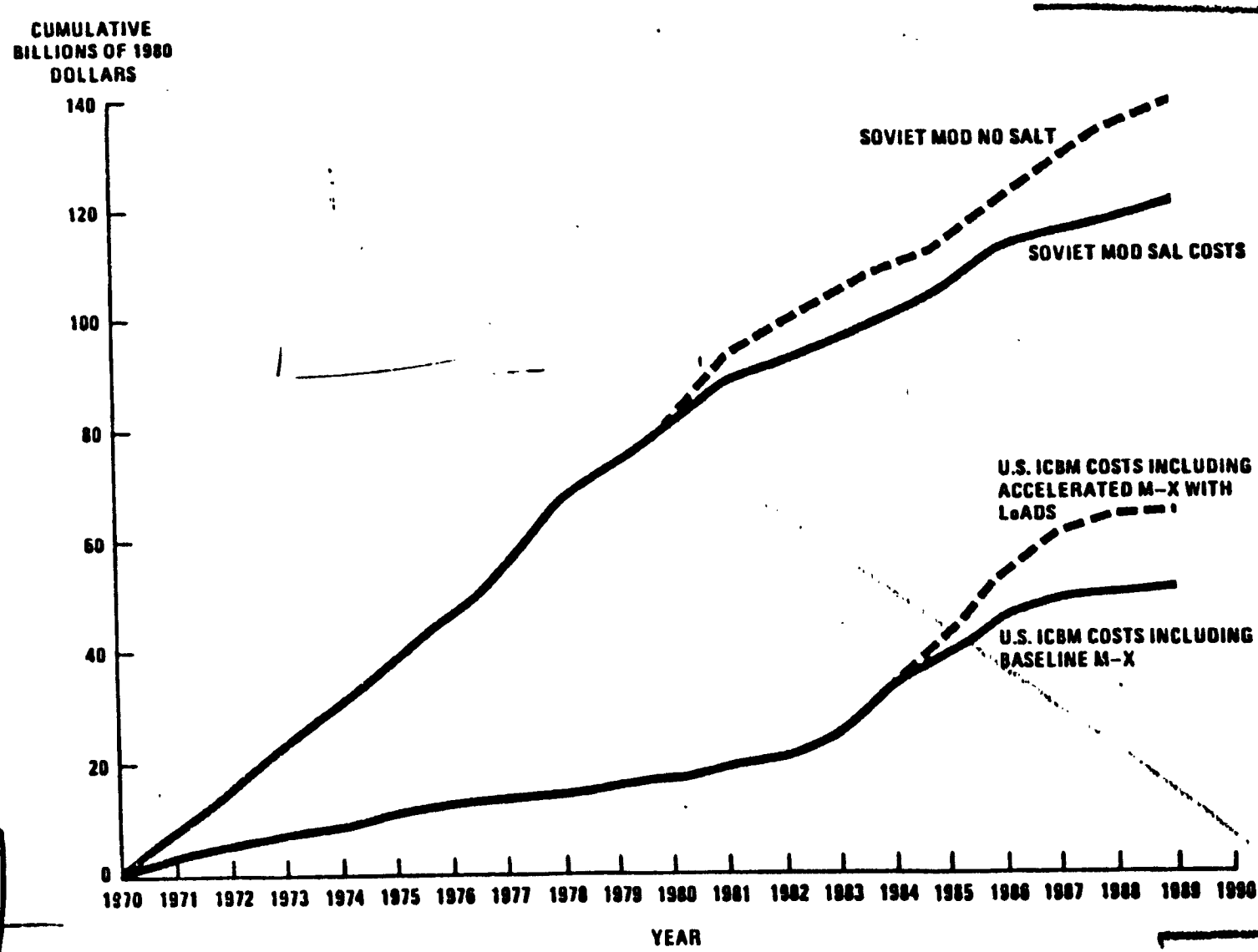
Obviously what we would prefer to do is with this lower threa but I would show you how we would respond to either of those threats. I will take the lowest threat and highest threat, the SALT moderate threat and the no-SALT 6,000 and 14,000 and show you how the MX responds to each of those threats.

SLIDE 25A

This simply depicts our best estimates of what the ICBM programs cost from 1970 to 1990, and this top line represents the cost to Soviet forces, this is cost to the Soviet Union for the forces which you saw deployed on that previous chart. That shows a cost from 1970 to 1980 of about $80 billion. They have been investing in ICBMs, during the decade of the 70's about $8 billion

~~SECRET~~

A COST COMPARISON OF SOVIET AND U.S. ICBM DEPLOYMENTS (U)



~~SECRET~~

25A

a year to get ~~that~~ THE force, ~~deployed,~~ which is concerning us at this time, DEPLOYED.

During that same period of time our investment in ICBMs is something less than $20 billion. ~~Now~~ you see the projection of the MX buildup occuring here and that ~~takes~~ occurs over a 20 year period, from 1970 to 1990, it takes our total investment in ~~ICBMs~~ ICBMs up to something less than $50 billion or ~~about~~ LESS THAN $3 billion a year.

I have also projected ~~on~~ here a dotted line which shows what we would have to do if we were responding to a non-SALT constrained buildup. The buildup in the moderate SALT case is ~~the~~ 6,000 RVs and this is the buildup if they decide to continue building their ICBM force. This line goes with this line, constrained both in the U.S. and the Soviet Union, and this dotted line represents our response to a continuing buildup of the ICBMs.

USE 9 → 26A

Now let me show you what those responses are. I am going to take a minute to explain this curve because I think it is important to understand the question of how our forces relate to Soviet forces in the event of an attack. I would like to point out that what I am showing here on the top line, the vertical line here, is the U.S. ICBM reentry vehicles. This point on the curve represents something in excess of 3500 reentry vehicles in the U.S. ICBM force by the time the MX system is deployed.

~~I have shown up here~~ this assumes two hundred MX missiles, which is 2,000 reentry vehicles, plus a Minuteman force AND TITAN ~~and Titans~~

TOP SECRET

JS 3.3(b)(2),(4)

[redacted]

TOP SECRET

In aggregate those amount to something in excess of 3,500 reentry vehicles. That is what we are planning to ~~bring~~ HAVE in our ICBM force during this period under ~~constrained~~ CONSTRAINTS. SALT.

On the bottom line I have represented the number of Soviet ICBM ~~reentry~~ REENTRY vehicles. Here we have the 6,000 I showed you on the earlier curve, so WE HAVE 6,000 Soviet reentry vehicles and a little more than 3500 U.S. reentry vehicles.

Now I imagined that the Soviets attack the U.S. ICBM force. Two things happen when they attack the forces. Their own ICBMs decrease because they are expending them, they are firing THEM at us. Our ICBMs decrease because they are being destroyed by an attack. This is what we call a drawdown curve. It ~~is~~ DEPICTS drawing down the Soviet ICBM force by their firing them and drawing down the U.S. ICBM force by destroying them. What you see in the first half of this curve is an attack on the Minuteman III.

[redacted]

JS 3.3(b)(2),(4)

Finally we imagine their attacking the MX system. They have to expend 23 reentry vehicles to destroy one MX which has ten reentry vehicles. We see the curve coming up like this. What is happening then is in the first part of this engagement they are

improving their strategic situation and in the last half of this engagement the more missiles they fire the closer they come to this line, that is, the less advantageous THEIR POSITION. We have sized the MX SYSTEM so that THEY essentially ~~they~~ expend their entire ICBM force in order to bring our force down to zero. If they were to do that, what we would end up with is that each side would essentially have eliminated their ICBM force in which case the Soviets, now having made this attack, would have their submarine forces and their airplane forces against our submarine forces and our airplane forces, an ~~obvious~~ OBVIOUSLY disadvantageous position for them.

This would deter them from attack because they are worse off after the attack than they are before the attack.

Senator Culver. Excuse me, Dr. Perry. This is a live quorum and there will be a cloture vote at 9:15. Whatever the committee's pleasure is, shall we go over now?

Dr. Perry, why don't you go ahead.

~~Mr.~~ DR. Perry. I am not going to go over the other line. This just imagines the United States turning the situation around and using its MX missiles to attack Soviet missiles, ~~and~~ briefly the bottom line of that is that that is not an attractive proposition for the U.S. because we essentially use up our force and reach a point of diminishing returns. JS 3.3(b)(2),(4)

[redacted]

28A

Now I am jumping over to the case ~~now~~ where the Soviets have

TOP SECRET

JS 3.3(b)(2),(4)

[redacted]

TOP SECRET

28A

built 14,000 ICBM reentry vehicles. I am raising the question, how in the world could we respond to that? I have taken a hypothetical, and I think an undesirable way of responding to the threat, where we simply double our MX deployment.

We build twice as many shelters as we are envisioning and put more missiles in. Without ~~gling~~ going over the numbers in detail on this, this curve simply illustrates that if they were to go to 14,000 reentry vehicles and if we were to more than double the missiles in the system we end up with a curve somewhat similar to what we had before. Theoretically we could respond to that kind of threat by increasing the scale of deployment of the MX system. I wanted to emphasize that because of the point that was made that an MX system would not be able to respond to greatly increased levels of Soviet threat. ~~they~~ The system would be able to.

It requires, as I say, doubling the ~~systems~~ system at greatly increased cost. This has now gone from $33 billion to $57 billion. It is obviously an undesirable course of action but it is one course of action that is open to us if we cannot somehow persuade the Soviets not to go to 14,000 ICBM reentry ~~force~~ vehicles.

Senator Nunn. What you are saying is that without SALT II MX is still ~~viable~~ viable and it will just cost a bit more money.

~~Mr.~~ Dr. Perry. It will cost a bit more money. I would be even more specific than that. If we can, by any means, persuade the Soviets not to build up to 14,000 RVs, then we can get by with a

smaller MX deployment. SALT would be one way to do that and it would be a way to codify it and put it down in treaty form. I think it would be clear though that the MX system itself provides an incentive not to do that. That is, if the MX system can clearly respond, if it is doing enough to respond to that threat, then I think it, itself, provides the disincentive.

Senator Nunn. What is the incremental cost to them? Our incremental cost goes from 33 to 57 absent Soviet restraints for one reason or another. That is $24 billion extra, is that right?

Dr. Perry. Yes.

Senator Nunn. What is the difference on those two lines for the Soviets?

Dr. Perry. If we go back to that earlier curve, we would see that those two lines are about parallel which means that the incremental cost is about the same for this presumed response to the buildup. Notice what we are doing is building a very expensive MX multiple protective system to respond to the Soviets just putting one missiles in a single silo.

I would point out that that is not a very good strategy for them. They put this enormous investment in single silo missiles and those single silo missiles are highly vulnerable to an attack by our MX system. It is highly questionable that they would do that. I did want to show you what the arithmetic is.

I also want to show you one alternative approach which I think is substantially more attractive than this.

Senator Nunn. I don't know what the U.S. attack line shows there. JS 3.3(b)(2),(4)

Dr. ~~Mr.~~ Perry. ~~Let me go back to the previous slide.~~ This shows that you have the MX missile attacking the Soviet ICBMs, one on one. [redacted] You can draw that force down from [redacted] but it is really not practical to draw it down beyond that. So what it says basically is that we can take out this huge quantity of forces they have but we cannot truly have a first strike capability because whatever we do in that line they still end up with [redacted] C.S.P.T. reentry vehicles, AS WELL AS THEIR SUBMARINE AND BOMBER FORCES, which has to be considered a very substantial retaliation threat to the U.S.

This represents what I would call a stable situation. Neither side can gain from a first strike attack. Therefore neither side has the incentive for first strike attack.

I don't know of any other way of analytically or objectively answering the question as to whether MX can be defended against a Soviet ~~an~~ ICBM ~~Soviet~~ attack and whether an MX stimulates an attack by being first strike provocative. If this first curve is correct it answers both of those questions. This curve says MX can be

defended against a Soviet ~~an~~ ICBM ~~Soviet~~ attack even if they go to 14,000 RV's. This curve says that even with a greatly expanded MX system we do not truly have ~~truly~~ a first strike capability. Whatever we do the Soviets still end up with [redacted] ICBM RVs. That is what in the jargon of the technology is called stability.

Neither side has incentive for attack. JS 3.3(b)(2),(4)

Senator Nunn. To get them down to zero how many would we have to expend? All of ours?

~~Mr.~~ Dr. Perry. We can't get them down to zero with this presumed force. I think the answer to the question, Senator Nunn, is that we would have to make a different assumption ~~by~~ for our forces and ~~by~~ the way they are attacked. With the size forces that are deployed here that cannot be achieved.

Senator Nunn. Is that just for the MX attack, not counting the Minuteman or ~~anything~~ else?

~~Mr.~~ Dr. Perry. ~~If~~ it is an MX attack, the Minuteman ~~neither~~ force has neither enough warheads ~~or~~ nor enough accuracy to contribute significantly to that attack.

Senator Nunn. Who has the closest to a first strike capability, the U.S. or the Soviet Union?

~~Mr.~~ Dr. Perry. Under this assumed deployment? [redacted] That is, in the sense that this assumes that they would have [redacted] left if we struck and we would have [redacted] left if they did. It is not an attractive proposition for either side. JS 3.3(b)(2),(4)

In fact, let me modify my answer, ~~not just looking at ICBMs~~. If you take the submarine missiles into account then [redacted]

[redacted] JS 3.3(b)(2),(4)

Chairman Stennis. You say if we take what into account?

~~Mr.~~ Dr. Perry. Submarine missiles, if we assume we can ~~obtain~~ retain our advantage in submarine missiles. 33A

Let me show you one more curve. This curve is the same thing I have been showing you but now I have different assumptions. Here I do not expand the number of shelters. I keep the 4600 shelters which were in the original deployment. I double the number of MX missiles and I put in an ABM system to defend the MX. The way an ABM system ~~would~~ would work in MX is different from the way it would work for the Minuteman. I testified numerous times that I do not believe that an ~~ABM~~ system is either a viable defense for the U.S. or viable defense for Minuteman. The MX is a different situation. The reason for that is because with the ability of an ABM system, with the number of reentry vehicles and number of decoys, you can saturate your defenses. Here the situation is quite different.

For each of your missiles you have 23 shelters that they must attack. Your ABM system knows which shelter has the missile in it. The ABM only has to defend one of those shelters. So you have this tremendous leverage of defense over offense. It completely turns the tables on the offense. So, I believe

[redacted]

that an ABM system is viable in the defense of our multiple protective shelters where I do not believe it is viable in defending Minuteman shelters.

Senator Nunn. Dr. Perry, if we are at a convenient stopping point, we have a vote on. I imagine Senator Warner and Senator Culver are coming back in ten minutes.

We will take a 10 or 15 minute recess.

(A brief recess was taken.)

Senator Culver. Dr. Perry, would you be good enough to complete your presentation?

Dr. Perry. I had concluded my presentation. I had ended up with the last CHART ~~cart~~ which ~~must~~ showed the drawdown ~~having about the same results as when we~~ [doubled the MX deployment,] by leaving the MX deployment in the same number of shelters but by adding an ABM system to protect the MX, [HAVING ABOUT THE SAME RESULTS AS WHEN WE DOUBLED THE MX DEPLOYMENT.]

In either of those cases, one can get an adequate defense of an MX system against a greatly increased Soviet threat. The cost of doing that is much greater and, therefore, we need to find some way of discouraging the Soviets from making that increase in threat.

It again points out the importance of getting back to the SALT II Treaty. The fact that we ~~can't~~ CAN defend the MX system against that threat does not mean that it is a desirable course of action either for our country or their country. It is enormously more expensive and, therefore, is something to be avoided.

I think, Senator Culver, that I am open to questions.

Senator Culver. Thank you, Dr. Perry.

General Allen, if you would be good enough at this time ~~to go~~ To give your presentation, please, we will withhold the questions until you have finished.

STATEMENT OF GENERAL LEW ALLEN, JR., USAF, CHIEF OF STAFF, UNITED STATES AIR FORCE

General Allen. Mr. Chairman, ~~I only thought,~~ with your permission, I would like to make a very few opening comments, simply for the purpose of putting on the record some of the views of the Air Force at this time.

I think the views that I would express are neither new, nor surprising to you, but I would like to state them, briefly.

Senator Culver. You can submit anything for the record that you wish to, particularly if this is nothing new. We are struggling around here with the new things, without having to cope with the old, too.

General Allen. As you are aware, for the past several years the Joint Chiefs of Staff have ~~struggled~~ examined very ~~hard with~~ closely the existing and projected state of the U.S.-Soviet strategic nuclear balance. We have been concerned about a number of aspects of that and, most particularly, the trends for the future, as we try to project that balance out some years from now.

One aspect of particular concern is growing vulnerability of our land-based ICBMs. ~~Those~~ These missiles are being placed at risk by the Soviet deployment of large numbers of very accurate ICBM-carried weapons. ← we have done analyses ~~to address~~ in examining this balance, using a variety of static and dynamic measures. Some of these vary.

You have recently heard the Commander in Chief of the Strategi Air Command brief you, giving one particular approach to ~~that,~~ this

ANALYSIS ~~analysing that balance,~~ and it indicates particularly unfavorable trends which we must address.

All of these studies have agreed that the United States must undertake a vigorous strategic modernization effort. ~~and~~ Unless we do ~~that,~~ THIS, the Soviets do, in fact, threaten to deny us our essentia strategic deterrent and to shift the balance in their favor, in a way that could be extremely significant.

As a result, despite our recognition of other very pressing DEFENSE demands, such as the need to continue the modernization of our general purpose forces, ~~and~~ to improve ~~the~~ THEIR near-term readiness and sustainability ~~of our conventional forces,~~ and to address the very serious problems that we have with regard to personnel recruitment and retention, we have assigned the highest priority to our strategic force improvement programs.

These programs include, in ~~hopefully~~ a balanced way, the development and deployment of substantial numbers of air-launched cruise missiles on our B-52s, the Trident I SLBM on the Poseidon AND Trident submarines, and of the MX ICBM in a survivable basing configuration.

Since the Soviet invasion of Afghanistan and the continuing crisis in Iran, all of us have been compelled to readdress our program priorities. We have found it necessary to place increased emphasis on improving our near-term readiness and ON increasing our capability to project and to sustain forces promptly and effectively over long distances.

Those reassessments have resulted in PROGRAM amendments and supplementals which have been submitted to the Congress, but despite the necessities for these readjustments, the JCS remain convinced that whatever the eventual ~~date~~ FATE of SALT II, we have to proceed expeditious with these major modernization programs in the strategic nuclear area, ~~and~~ we must retain the versatile and well-hedged deterrent capability of OUR STRATEGIC ~~the~~ triad.

The Air Force ~~and I are~~ IS fully convinced that the deployment of the MX in a horizontal, multiple protective structure basing configuration, just described to you by Dr. Perry, is the best means to restore the survivability of our ICBM force. We HAVE reached this conclusion after extensive study of a wide variety of candidate basing modes CONDUCTED over several years, including our recent detailed analyses of alternative MPS basing schemes during the past seven months of full-scale engineering development.

It was a little over a year ago that the Air Force recommended deployment of the MX missile in a multiple protective structure basing mode, using vertical rather than horizontal shelters, ~~and~~ we believed at that time THAT vertical MPS represented the lowest cost, practical solution to the vulnerability issue.

Subsequently, there were valid questions raised as to whether we would have adequate confidence over the time period envisioned in relying solely on successful concealment as a means of providing survivability for the several decades lifetime required of an MX system.

As a result, we have over the past year worked very diligent with Dr. Perry's office to develop a system that retains the advantages of concealment while adding a second survivability dimension of enhanced mobility. ~~and~~ The evolution which you have seen over the last year ~~as~~ is a result of that attention.

The horizontal MPS system with the detachable erector-launcher will provide the features that we consider to be essential in a configuration which we consider to be practical and effective.

~~Now,~~ In the recent months we have also discussed and examined ~~a great deal~~ carefully the interrelationship between MX in an MPS mode and SALT. Throughout its development, ~~it is true that~~ the MX/MPS system has had expressly designed into it a means that will provide an effective and survivable ICBM capability consistent with our long-term objectives, either within or ~~without the~~ outside a strategic arms limitation environment.

We have put in special design features which are appropriate for the full-scale development phase and consistent in its compatibility with the ~~respective~~ SALT II Treaty. These ~~do~~ include ~~now~~ a highly visible, controlled missile assembly and introduction process verifiable confinement of the missiles within shelter clusters, and removable viewing ports on the horizontal shelters that allow adequate verification by national technical means.

Despite the current deferral of SALT II ratification, our long term interests in achieving limits on strategic arms remain. Thus we are convinced that these verification-related features should be

maintained through the development phase, and this can be done without a great deal of additive cost.

The MX/MPS system has additional arms control potential. It is my personal belief that it assists in the process of obtaining a situation wherein arms control can be pursued more ~~effectively~~ EFFECTIVELY than ~~it has been~~ in the past. That is largely because, I think, as Dr. Perry's curves have shown, ~~it~~ THE SYSTEM leads the Soviets to move to more stable configurations than they might otherwise, and it provides a way of assuring survivability without having to increase the striking power of the system through the decoupling of THE NUMBER OF shelters and THE NUMBER OF missiles.

Therefore, I continue to believe that the system and its features that relate to SALT are advantageous.

Now, there is a question which has to do with the finite size of the number of ~~deployment~~ DEPLOYED shelters and whether or not that provides a constraint which, in the absence of SALT, makes the system an undesirable one to deploy.

I believe that not to be the case. The baseline configuration has been sized against the likely Soviet strategic force posture within the ~~balance~~ BOUNDS of SALT II, although that prediction, in fact, did not come up to the ~~bounds~~ of ~~SALT II~~ POTENTIAL SOVIET CAPABILITIES within the period of the SALT II Treaty. Nevertheless, from the outset we have known that we ~~had to~~ MUST have the resiliency in the system to ensure that it ~~was~~ IS a wise course of action for the United States, with or without SALT.

Dr. Perry has addressed ~~that~~ THIS POINT and I would only like to say that

~~TOP SECRET~~

I concur with his analysis of the situation.

It is important to ~~reccognize~~ RECOGNIZE, as was observed by one of the questions that was asked ~~on~~ ABOUT Dr. Perry's graph DEPICTING RELATIVE ICBM DRAWDOWNS that one must not address only the one leg of the triad in addressing U.S. responses and Soviet reactions. In fact, the Soviets have chosen a configuration of their strategic forces which is unbalanced in favor of ICBMs, and that leads to an undesirable situation.

It is my ~~believe~~ BELIEF that the MX deployment will, in fact, lead the Soviets to reevaluate their force structure and WILL HAVE THE ~~has a~~ desirable effect of leading them to select more survivable force structures which are more amenable to arms control if we can resume that process.

However, in the worst case and ~~proably~~ PROBABLY an unlikely kind of configuration, where the Soviets proceed to increase their number OF RVs to ~~the maximum~~ MUCH HIGHER LEVELS, which they have the capability of doing, it is still necessary that we address the deployment of MX to ensure that it is not a dead-end situation. It is my belief that it is not.

There are additional things IN RESPONSE TO SOVIET THREAT EXPANSIONS that we can do in the way of CONSTRUCTING additional shelters, additional missiles, additional deployment areas, and in a step which would clearly be a further abandonment of the SALT process, deployment of a low-altitude, threat-specific ABM system.

~~Those~~ THESE options WOULD, of course, ~~would~~ increase the cost OF THE SYSTEM, but they do assure us that we are not ~~entering~~ EMBARKING on a course which will not ~~be able~~ ALLOW US to respond if the Soviets take ~~these~~ THE large build-up options

which are available to them.

~~Now,~~ the threat to our Minuteman ICBMs and thus to the nation security is real and serious. Over the years that we have examined our future, we have not found easy solutions. We continue to believe that the strength of the triad should not be abandoned in the face of the Soviet threat. In fact, it is the strength of the triad that gives us confidence ~~during~~ IN this decade -- A DECADE in which there will be SOME disadvantages to the U.S.

Regaining the survivability of our ICBM force is our foremost objective, and ~~we~~ I share the conviction of the President, the National Security Council, the Secretary of Defense, AND the Joint Chiefs of Staff, ~~and myself as an individual,~~ that we ~~have to~~ MUST continue to assign the highest priority in the Air Force program to the fielding of the MX in a survivable MPS basing configuration.

Thank you.

Senator Culver. Senator Cannon, I thought we might hear from Ms. Chayes, and then we can have questions across the board.

Ms. Chayes, will you proceed?

~~TOP SECRET~~

STATEMENT OF THE HONORABLE ANTONIA HANDLER CHAYES,

UNDER SECRETARY OF THE AIR FORCE

Ms. Chayes. I think I will be very brief, so most of the tim can be devoted to questions.

I would like to simply state that the environmental impact work that we are doing is probably the most comprehensive and complex that has yet been undertaken, certainly by the military.

I know that there is a fair amount of doubt that the Air Force ~~could~~ CAN complete all of the work adequately in the time we have been allotted. I would like to say, unequivocally, that we can. We can complete a legally adequate and in every way ~~safe~~ SUFFICIENT environmental impact statement meeting all of the NEPA requirements and ~~in addition~~ all those ADDITIONAL requirements ~~that are~~ imposed by the Bureau of Land Management, ~~which are on top of the NEPA requirements~~ in the time that is necessary.

I say that with confidence now, where we would not have had that confidence four months ago, because it was THEN STILL uncertain how much information we would need.

We have ENJOYED good ~~experience~~ RESULTS in the Air Force. We have completed two statements already for MX and a number of other statements for more complex and perhaps nearly as controversial systems, such as Pave Paws. We have faced legal challenges in the past in the Air Force and we have prevailed, because ~~I think~~ we have done our work well.

I think what is astonishing to many of the ~~civilian~~ leaders in

~~TOP SECRET~~

the Department of Defense and in the military, ~~as well~~ is the amoun of time, ~~and~~ attention and community involvement that is required by this system. We regard that as ~~kind of~~ an additional challenge ~~and~~ one that we think in the end will be FOUND TO HAVE BEEN extremely beneficial both to the operation of the system and to the states in which the syst is likely to be deployed.

~~I think,~~ THE PRESENT MX DEPLOYMENT SCHEDULE CAN BE MET overall, we conclude that if Congress proceeds with the steps that are required, which are full authorization and appropriation this year and ~~the following~~ IN SUBSEQUENT years thereafter. If the EIS ~~event results~~ DECISIONS BASED ON RESULT in ~~a~~ THE first choice being the areas of Nevada and Utah, which would require land withdrawal, and if the relevant Interior committees with jurisdiction OVER THAT LAND WITHDRAWAL PROCESS ~~go through~~ in an orderly, if not expedited way, we ~~only really~~ have ONLY A SINGLE ~~one~~ session of Congress in which ~~that could be accomplished.~~ TO ACCOMPLISH THAT STEP. It can be done, of course. ~~Ordinarily,~~ GENERALLY, WITHDRAWAL IN OTHER cases that we have experienced ~~have~~ HAS taken somewhat longer THAN A SINGLE SESSION, BUT THIS WAS not because the issues ~~are~~ WERE controversial, but RATHER because ~~they~~ have been of relatively low priority ~~of~~ TO those committees. THE CASES

So we would require SOMEWHAT FULLER the attention of those committees whose interest is not ordinarily military matters to go through the land withdrawal process under the FEDERAL Land POLICY AND Management Act. ~~Then~~ GIVEN THAT, I do not see any OTHER obstacle to meeting the initial operating capability, IOC, of ~~1986.~~ 1986. We certainly don't foresee any technical problems.

As Dr. Perry has indicated, in terms of complexity, the system is not technologically MUCH MORE complex ~~over~~ THAN what has been done before.

~~Beyond that,~~ OVERALL I would say that the land requirements and all th

~~TOP SECRET~~

OTHER requirements of this system have been played up in the press and elsewhere as being of enormous magnitude. It is--and I don't want to underestimate it--a very ~~extended~~ EXPENSIVE system. Nevertheless, when put into perspective, it is not an enormous system. The land requirements, ~~which I think is something which has been discussed,~~ really ~~amounts~~ AMOUNT to 25 square nautical miles for the shelters, and about 81 ~~sm~~ NAUTICAL MILES for roadways and, SINCE that LATTER ACREAGE will not be ~~land~~ withdrawn, that withdrawn from other uses amounts to about 2/100ths of 1 percent of the total land area contained in Nevada and Utah.

What it amounts to, if you want to put it in grazing terms, is about 25 head of cattle or sheep for whom the ANIMAL UNIT MONTH, OR AUMs, ~~those units~~, would be unavailable. That is without TAKING ACCOUNT OF THE compensatory measures, ~~and we have compensatory measures~~ that COULD ~~can~~ be TAKEN. ~~accomplished~~.

The amount of water, which has been another issue in the press, should also be viewed ~~from a~~ IN perspective. During the construction, the water needs in any one valley would be 2,500 acre-feet. These are the ONE-TIME construction needs for the system, THEY ~~which~~ go away after the system is built. ~~That~~ TWENTY-FIVE HUNDRED ACRE-FEET is equal to the annual needs of the town of Cedar City, Utah.

When in operation, the MX SYSTEM'S water requirements are the normal requirements of a support base and a surrounding community. ~~There~~ we contemplate that we would require about 6,000 acre feet of water FOR EACH BASE, That is about 77 percent of that used each year in Carson City, Nevada.

Similarly, we can make comparisons for construction material.

~~TOP SECRET~~

MX construction will use, for example, only four-tenths of one percent of the entire annual cement production of the United States. I could go on with other ~~field~~ percentages and so on but the picture that I want to get across is that, while large, MX is not an unmanageable system. Sound planning on the part of the Department of Defense, and state and local governments will allow the introduction of the system ~~I think~~ with minimal adverse impact and with a potential for many positive impacts yielding ~~with~~ some real benefits.

We are committed to meeting our part of the responsibility for this planning. We have already, in the 1980 budget, obtained funds from Congress to help the states involved create structures for planning for the impact. We will undertake to assure mitigative measures. For example, we are already looking at innovative construction methods that would tend to reduce the boom-cost effect to the extent possible, ~~and~~ I know that the states will do their part, ~~and~~ we have worked out a way in which they have close involvement.

They will be, for example, working with the planners at the Strategic Air Command in considering ~~terms of the~~ possible location for the main operating bases. ~~base.~~ We are working very closely with the ~~systems~~ system planners so that ~~we know~~ as ~~the~~ minor adjustments are made in the design we will know and have available for analysis what the environmental and socio-economic impacts will be.

In summary, I think that our environmental and land withdrawal program is sound. I think it is responsive to the overall system

schedule and I believe that in no way does it create obstacles that ~~because of these impacts~~ SHOULD CAUSE one ~~should~~ TO question the system ON THOSE GROUNDS.

I am prepared to answer any questions and go specifically into what we know and, if we don't know, what we are studying and expect to have ~~answer~~ ANSWERS for.

Thank you.

Senator Culver. Thank you very much, Ms. Chayes.

I would like the staff to advise us as we follow the ten minute rule to make sure everybody gets fair treatment.

Dr. Perry, I have an unrelated question at the outset that I would appreciate your opinion on. That is what your judgment is on the proposal by General Ellis to convert 155 F-111s to the FB-111? JS 3.3(b)(4)

~~Mr.~~ Dr. Perry. Senator Culver, I have considerable problems with that proposal for several reasons. The most fundamental reason ~~of which~~ is that the FB-111 A/C, I believe, will have essen-

[redacted]

The best data that I have in terms of the availability of the FB-111 A/C suggests it could be available as a strategic bomber in its modified form beginning probably ABOUT 1985, achieving full operational capability by about 1987. That is just the time that the Soviets strategic air defense, the new generation, will be reaching its full deployment.

[I do not believe that system will have a significant]

~~TOP SECRET~~

[redacted]

JS 3.3(b)(4)

It has ~~disadvantage~~ DISADVANTAGES, relative to the B-52, of short range and low payload.

All in all I think it is a very unattractive proposal. The cost of the program in ~~fiscal 80~~ YEAR 1980 dollars ~~will~~ WOULD probably be approaching $8 billion and that is not in then year dollars, it is in this year dollars. So it is a very expensive proposal providing us with a very uncertain capability.

Senator Culver. General Allen, do you agree with Dr. Perry?

General Allen. I would have ~~some~~ A slightly different perspective on it. If I may, let me answer your question in a somewhat different way, ~~if I may.~~

It is my job of course to try to put together an Air Force program that will be compatible with budgetary guidance, ~~and~~ the President's desires and the Congress's desires. In doing that, as I have ~~tried to say~~ SAID in my opening statement, the matter of the strategic nuclear balance has been the number one ISSUE, ~~matter,~~ the

one in which I believe we ~~had~~ HAVE to dedicate our highest priority and highest attention.

Again, ~~as I tried to say before in addressing that~~ I HAVE concluded, and the Air Force institutionally has concluded, that the MX is the number one priority in correcting the present strategic concerns and the ALCM and the B-52 program represent a similar top priority program.

Now one would still wish to do more. That is, one wishes that these programs WOULD HAVE MORE EFFECT ON ~~affected~~ the near term balance ~~better~~ than the do. ~~So~~ there are ~~then~~ questions with regard to the support of near term actions of which the FB-111 B/C is the specific proposal which SAC has made to us. My CONCLUSION ~~desire~~ has been that as I address the needs of the Air Force to fulfill its role in the Department of Defense, I ~~find~~ HAVE FOUND other things that need funding at higher priority than the FB-111 B/C.

OTHER HIGHER PRIORITY CONCERNS

Those include matters of conventional forces, their projection and their sustainability in combat. That was true before Afghanistan but it is EVEN more true now. I have had to readdress and reexamine ~~those~~ THESE matters and I am convinced that priority MUST BE ASSIGNED TO IMPROVEMENT OF OUR CONVENTIONAL FORCES IN THESE AREAS. ~~is required.~~ I still believe MX and ALCM have to be our top priorities, but from there I have to ~~go to~~ SUPPORT improvements that are vitally needed in THE READINESS, SUSTAINABILITY AND projection of conventional forces.

Now we have tried to ask the question if the budget were increased where would the FB-111 B/C fit? In the JCS we have tried to put that in the perspective of large ranges of programs that

might serve to reduce the risk IN OUR MILITARY POSTURE VIS-A-VIS ~~between the United States and~~ the Soviet Union. It was our conclusion ~~then~~ that the FB-111 A/C was a desirable program but at a level of budget funding which was really fairly substantially higher than that which has been proposed by either the Administration or the Congress.

So, I have not been able to support within the Air Force program at present levels of budget the FB-111 A/C CONVERSION. I do not believe it is appropriate to readjust priorities within the program we have submitted to fund it and if additional funds are required it is not AMONG the first priority item to fund.

Senator Culver. Would you say that given the current state of the art with regard to AWACS and the F-15 look down-shoot down capability that it is ~~a~~ reasonable ~~one~~ to anticipate a comparable sophistication of Soviet air defense capability in the late 1980s and secondly ~~weapon operationally performing~~, do these two systems in our own inventory have the capability now to detect and shoot down aircraft of the radar cross section size of the FB-111?

General Allen. The answer to the first question is that it is difficult to forecast how WELL the Soviets will succeed in DEVELOPING A COMPARABLE LOOK-DOWN, SHOOT-DOWN CAPABILITY. ~~that~~. The intelligence is very clear that they are working very hard on it. It would seem to me that it is imprudent to assume other than they will reach the ~~success~~ CAPABILITY that we have now before the decade is out. So I have to say yes, it is reasonable that they will achieve that capability.

With regard to the second question, ~~I have a little bit more difficulty and here is where~~ I may have a slightly different perspective than Dr. Perry. We do not have such A STRATEGIC AIR DEFENSE capability in our own Air Force. The reasons ~~have~~ have to do with numbers of aircraft and deployment decisions which we make in how to deploy those aircraft.

~~So,~~ a technical capability in AWACS and F-15 is not in itself what is required to defeat an attack of cruise missiles.

In the case of the Soviets then the issue is not so much will they have that technical equipment but what sort of TOTAL air defense system THEY WILL MOUNT and how best can we penetrate it.

Senator Culver. Currently the AWACS and F-15 in operations against conventional threat scenarios in the European theater I assume would have the responsibility and capability to detect and knock down fighter aircraft, tactical fighter aircraft, would they not?

JS 3.3(b)(4)

General Allen. That is correct.

Senator Culver. Therefore in terms of our capabilities currently [redacted] size?

General Allen. Yes, sir. I am only taking issue in the sense that the technical capability of the aircraft is one aspect of the question, the other aspect ~~of which~~ is what is ~~one~~ BEING DEPLOYED ~~deploying~~ in the way of air defenses. We are not deploying many AWACS and F-15's so we don't have THE ability to shoot down A SIZABLE ATTACKING FORCE OF SUCH AIRCRAFT, PARTICULARLY IF COMBINED WITH A

Senator Culver. If you deployed it that way you are talking more of the state of the art capability?

General Allen. Yes, sir. In the case of the Soviets there is an issue of tactics which relates to our ability to saturate PROTECTED Soviet ~~shoot down look down capability~~ LOOK-DOWN, SHOOT-DOWN CAPABILITIES with cruise missiles. I believe that we can select tactics that will be effective in doing that. I THINK Dr. Perry ~~I think~~ believes there are technical answers that the Soviets may be able to find which may make that tactic somewhat less effective.

On that he hinges the question of whether we can penetrate well in the latter part of the ~~80s~~ 1980s. I ~~would~~ think we probably could penetrate with what we call heavy cruise missile dilution ~~of~~ USING the programmed cruise missile force. Dr. Perry, I think, would have a reservation about that and I would acknowledge that that reservation exists. JS 3.3(b)(4)

Senator Culver. Could you speak to that?

~~Mr.~~ DR. Perry. I have no reservation about the cruise missile being able to penetrate in the late ~~80's~~ 1980s for the very reasons that General Allen mentioned, combination of the low radar cross section and the large quantities. The low RADAR cross section reduces the radius of action of even these LARGE QUANTITIES OF very modern air defense systems, ~~in large quantities and~~ making it that much easier to overwhelm them with ~~the~~ quantities OF CRUISE MISSILES. My comment is that the FB-111, which HAS [redacted]

Senator Culver. Could you also speak to the degradation that in your judgment might result if one were to take operationally out of our current inventories those 155 tactical ~~mode weapon~~ AIRCRAFT and put them in the strategic SIOP and what the implications would be to our ~~conventional~~ THEATER deterrent and security in a general way if they were not replaced with new tactical ~~mode~~ aircraft of ~~parability?~~ PARABLE CAPABILITY?

General Allen. As I RECALL THE PROPOSAL, one of the sources of the aircraft ~~is~~ about ~~50~~ 60 percent of the aircraft proposed to be modified ~~as I recall the proposal are~~ IS the ~~F-111D's.~~ F-111D FORCE. The F-111D's are a particular version of the F-111s which have proven somewhat difficult to maintain. We have had trouble with their combat readiness. We are now engaged in a program which we think will correct that. We have a good deployment capability of probably ~~an aircraft~~ A squadron of ~~FB 111D's~~ F-111Ds. We would hope to build that to two squadrons ~~of FB 111D's.~~ The A key test ~~in the deployment of that~~ OF THEIR DEPLOYABILITY is occurring ~~just about now. That~~ AT THIS TIME. THE F-111D aircraft when deployable and sustainable in combat has absolutely unique tactical bombing capability and I believe is an extremely important asset either for war in CENTRAL Europe, war on ~~the~~ NATO'S flanks and, in particular, IN the kind of combat that might ~~exist~~ ARISE if it were, for example, [redacted] available to attack Soviet approach routes into Iran. JS 3.3(b)(6)

So I think it is an important aircraft. There is a balance to be drawn. That ~~is~~, IS, of the 72 ~~D's~~ F-111Ds we ~~have~~ ARE hard pressed to keep, let us say, between 24 and ~~30~~ 30 fully deployable for combat.

is-

You are correct, sir, the loss of the ~~D's and to an equal extent the A's, is~~ F-111Dr would represent a loss of a unique bombing platform ~~of~~ from the tactical Air Force.

Senator Culver. Thank you.

Senator Warner.

Senator Warner. Thank you, Mr. Chairman.

Returning to the MX issue, I found those charts in which you ran various comparisons, Dr. Perry, extremely helpful. I am wondering if some of that information could be extracted for those of us who for the moment intend to go to the floor and support this program?

~~Mr.~~ Dr. Perry. All of the charts which I presented, except the ~~drawndown~~ drawdown curves, are unclassified. I will leave copies of those.

Senator Warner. I saw two that were classified.

~~Mr.~~ Dr. Perry. The drawdown curves were classified top secret. I will have to find some way of trying to extract the essence of that information. I will try to do that ~~for you~~ and get back to you. It will not be easy. It ~~embodies~~ encodes the National Intelligence Estimate. I will have to extract that out of it somehow before I present it.

Senator Warner. It makes our case more supportive in the Senate.

Mr. Chairman, have we considered the SUM project today?

Dr. Drell is here to ~~address~~ address his side of the SUM issue and ~~they~~ we will have the opponents later. Would you care to

~~TOP SECRET~~

go into the analysis of the system referred to as SUM?

~~Mr.~~ Dr. Perry. We have prepared a report, Senator Warner, which we have sent to the committee which embodies our analysis of the SUM system. I think the fundamental point I would make ---

Senator Warner. Could that be put in the record, Mr. Chairman?

Senator Culver. Assuming the size is compatible with a norma hearing record. Yes, without objection it is so ordered.

~~(The material to be furnished for the record follows:)~~

~~COMMITTEE INSERT~~

INSERT 55A

INSERTED ON PAGE 56

Senator Warner. Would you summarize it, please. Dr. Perry.

Dr. Perry. Maybe you want to put the ~~executive summary~~ report in the record? AND I WILL SUMMARIZE THE RESULTS.

Senator Culver. Without objection it is so ordered.

(The material to be furnished for the record follows:)

COMMITTEE INSERT

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INSERT FOR THE RECORD								
	HOUSE / SENATE	APPROPRIATIONS COMMITTEE		HOUSE / SENATE	ARMED SERVICES COMMITTEE		HOUSE / SENATE	OTHER
HEARING DATE		TRANSCRIPT PAGE NO.	LINE NO.		INSERT NO.			
30 Apr 80					56A			

SUM Report

(The information follows:)

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