

makes sense for the Department of Defense to operate its own shuttle fleet and to develop its needs for space launch and orbital operations as part of its budget. The strong possibility that a permanent manned presence on orbit will be needed to support our orbiting defense platforms and to provide a "fail-safe" element in the early-warning and battle-management loops reportedly has been recognized by the Fletcher Commission. I understand that the commission has called for a careful review of the need for such a manned presence in a national security context.

I believe there is such a need. The idea would be to develop a "space infrastructure" similar to what the Soviets have been building up. If we are to maximize the potential in space-based defensive systems, we will eventually need both an integrated transportation system that can move astronauts, materials and equipment to, from and in space, and a space-based logistics, operations and maintenance system that will help support our force structure.

Central to a discussion of these proposals is the future role of NASA. As shuttle flights become commonplace, the question we need to ask is whether it really makes sense for NASA to become merely a transportation system that is for space that Amtrak is for trains. Or, would it not make more sense for NASA to remain on the cutting edge of new research and development in space? . . .

President Reagan's policy proposals for a new defensive emphasis in strategic policy have immense implications for the U.S. policymaking process. In essence, he is calling for a strategic policy and for arms-control arrangements that will replace those around which a large policymaking community has organized itself over the past two decades. This switch will require a considerable reorientation in the American approach to ongoing arms-control negotiations, one which requires careful coordination among the Defense Department, the State Department, the Arms Control and Disarmament Agency, the National Security Council and the Congress.

As part of the policymaking process, the President should identify for the Congress the anticipated role of strategic defenses in arms-control that he referred to in his Mrach 23rd proposal and subsequent statements. For example, a mutual deployment of strategic defenses by both the Soviets and the U.S. would make sense in the context of mutual reduction in strategic forces. Such defenses would serve as useful "defensive backstops" and enforcement mechanisms for the current SALT II agreement, as well as any START and intermediate-range nuclear forces agreements which may be reached.

We also need to understand where the President's defensive proposal fits under international laws of warfare, particularly the 1977 Protocols to the Geneva Conventions of 1949. While promoting a defensive strategy that is very powerfully supported by existing international law, the President's remarks indicate a deeply felt concern over the ethics of MAD. Thus, it would be useful for the President to submit to the Congress and to the policymaking community in

general a "white paper" that discusses his proposal and the present ABM Treaty in the context of international laws of warfare that promote the protection of populations. A top-level reevaluation of the ABM Treaty in this regard has never been performed.

In conclusion, I believe that mutually assured destruction is a morally bankrupt philosophy that places government in the untenable position of refusing to defend its citizenry. What the President has proposed is a "moral recovery" in American strategic policy which would take us from the horror of MAD to the promise of mutually assured protection. . . . Granted, this transition away from nuclear retaliation to a strategy emphasizing defensive systems—this Manhattan Project for Peace—will be very costly. It will require a scientific and military commitment that will dwarf any prior effort. It will also involve some of the most complex organizational and conceptual adjustments that have ever been required of American strategic thinkers and planners.

However, the costs and obstacles must be put into perspective. No price is too great to assure that America never be devastated by a nuclear surprise attack. No expense is too dear when one considers the promise of making nuclear weapons obsolete. . . .

## Teller: Soviets are building up ABM systems

*From Dr. Edward Teller's Testimony on H.R.3073:*

. . . . The Soviet Union is developing its defenses. Civil defense has high priority, Moscow is ringed by instruments of ballistic missile defense. This system has been powerfully upgraded in the last few years. There are many air-defense systems in the Soviet Union which probably can be used for ballistic missile defense. Research on active defense is proceeding in the Soviet Union. Unfortunately, our exaggerated laws of secrecy and their overly strict interpretation prevents me from describing or even hinting at the nature of these Soviet developments. . . .

During the last few years our weapons laboratories have brought forward half a dozen ideas for defense against both non-nuclear and nuclear aggression which have withstood the tests of criticism and preliminary experimentation. These defensive weapons are characterized by being directed against aggressive weapons in action. In the ideal case they would not destroy human lives. In some cases moderate loss of life may be unavoidable. But the purpose and effect is emphatically not mass destruction.

Discussion has shown that these defensive weapons can be and should be less expensive than the offsetting weapons of aggression. Battlestations in space, based on conventional procedures will not serve the purpose. They are expensive to deploy and easy to destroy. True and effective defense will

have the consequence that the opponent will be forced into a similar mode of operation. Two armed camps provided primarily with shields present a lesser danger than two camps relying on the destructive power of swords.

Because the aggressor has to overcome distance there is good hope that defense will win on the score of efficiency and economy. On the other hand the element of surprise favors the aggressor. Thus the defense needs the exercise of intellect, invention and foresight to their utmost limit.

Therefore, I propose that in the earliest possible phase defense should be jointly conducted by the advanced free people whose common and supreme interest is the preservation of peace and their way of life. This also will put additional unity into our alliances. Active cooperation is the basis for realistic hope. Much technical knowledge is available in allied countries.

There have been proposals that the defense should be purely non-nuclear. This is a popular proposal. But defense will not be easy. We should not arbitrarily rule out any form of effective defense.

One highly hopeful development is a non-nuclear short wave laser based on the ground whose beams are guided to the attacking targets by a system of mirrors. Another essential development is specifically constructed nuclear weapons which utilize primarily the high energy *concentration* (or high temperatures) which they can produce for defensive purposes.

Another example of the same debate is the decision whether the terminal defense against incoming ballistic missiles should be nuclear or non-nuclear. In the non-nuclear kill greater weights must be lifted at a higher expense. Furthermore the agility of the defending missiles would be reduced. But, what is most important, a non-nuclear kill cannot prevent salvage fusing. This means that as soon as the incoming missile (which may have already reentered our atmosphere) is touched it will explode with full force, for instance one megaton. A small defensive nuclear missile can prevent such a big explosion. Its own energy need hardly exceed 100 tons TNT equivalent. This should happen at a high enough altitude so that the effects on the ground would be hardly observable. Thus the advocates of the non-nuclear kill may bring about a situation where truly big Soviet nuclear explosions would nonetheless occur over our country and possibly over allied countries.

The proper distinction in planning our military operations should not be the choice between nuclear and non-nuclear methods. It should be the vital difference between aggression and defense. The former should be ruled out, the latter fully encouraged.

At this time speed is of the essence. The development of a full defensive system will take a decade or more. But in half that time some defensive weapons may begin to pay off. In order to accomplish this, red tape has to be cut. The agency engaged in this vital activity must be set apart, exempted from many standard procedures and should have direct access to the White House.

It would seem appropriate and even necessary to explain the basic ideas of the new defensive weapons to the public. Otherwise the needed wide popular support cannot be secured. Furthermore the basic ideas are known to the Kremlin. Yet our strict secrecy regulations do not permit such an explanation. The details and stages of our development can and should be kept secret. The general ideas should be public.

It has been argued that defense cannot have a perfection of 100 percent. Even a small leakage will cause enormous damage. This is true. But war will always be connected with great damage. Active defense together with civil defense can ensure the survival of our country.

But the most important and final argument is that defense will deter war and do so in a thoroughly humane manner. Let us assume that an *initial* deployment of defense will reduce the fury of the attack 20 percent of what otherwise would hit us. It must be remembered that such a 20 percent figure is a paper-estimate. The actual figure may be anywhere between 50 percent and 5 percent. The decision makers in the Kremlin are exceedingly conservative. If they know that perhaps only 1 out of 20 of their missiles may reach their target and that we shall retain significant retaliatory capability then the Soviet Union will not start a nuclear war. That we shall not do so is entirely obvious.

Eventually a much higher protection percentage can be probably attained.

The People Protection Act wisely formulated and wisely applied will remove the steadily increasing threat of war. It will create the atmosphere in which mutual understanding, cooperative enterprises and all the other effective supports of peace can flourish and develop. . . .

I hardly can hope that the danger of war will entirely disappear in our lifetime. Our children and grandchildren may live to see the beginnings of real and permanent peace. Mutual assured destruction may be replaced by mutual assured survival.

This is why I dare to say that the "People Protection Act" might become one of the great historical documents of America.

## Armstrong: Defense is the moral policy

*From the testimony of Sen. William Armstrong (R-Colo.) on Nov. 10:*

On March 23rd of this year, President Reagan offered us a vision of a future free from the spectre of nuclear destruction which has haunted us all for nearly 40 years. The President offered us a vision of a world in which American security would be based chiefly upon our ability to protect the lives of our own people, rather than upon our ability to take the lives