

TO: Paul

FR: Jim

RE: President Reagan's Star Wars Proposal

I. REAGAN'S PROPOSAL

In his televised speech of March 23, President proposed developing defensive weapons to end nuclear deterrance based on mutual assured destruction.

A. Teller Influence:

Edward Teller has been pushing for this for some time, even before the ABM Treaty was negotiated. Recent tests of x-ray lasers may have given him the ammunition to convince Reagan to go along.

B. Reagan's Plan:

Details of Reagan's program have not been released. However, it is rumored to be a 10 year program to cost \$175B, fashioned after President Kennedy's Apollo program.

1. The President is supposed to be absolutely committed to this program.
2. The program is to emphasize x-ray lasers and particle beam weapons.
3. The President will suggest giving the USSR the technology to prevent destabilization

C. Relation to "Weinberger Doctrine":

The United States has a significant advantage over the Soviets with respect to developing and producing high technology weapons. On the other hand, cheap Soviet labor gives the Soviets a cost-advantage in low technology products and conventional military forces. To reduce Soviet aggression and Soviet conventional military superiority, the "Weinberger doctrine" (substitute "Perle Doctrine") calls for forcing the Soviets into matching the U.S. in developing and deploying high tech weapons. The President's proposal is consistent with this concept. Money spent on high tech ABM systems reduces that available for conventional systems. To keep up, the Soviets would have to spend substantially more than the U.S. would.

D. Costs:

It is unlikely that \$175B will produce the system envisioned by the President. Indeed, a 1981 Pentagon estimate for a space-based laser system was \$500B. In any event, it is likely that the costs of an ABM system will exceed the costs of the missiles it is designed to destroy.

II. SOVIET RESPONSE

Andropov was quick to respond to the Reagan speech, citing arguments in support of the ABM treaty and that the Soviet Union would not allow its weapons to be made obsolete. Possible Soviet actions include:

A. Matching U.S. effort:

The Soviets have been engaged in laser and particle beam research for some time, and may be content to match the U.S.

B. Destroying U.S. system:

The Soviets might feel compelled to launch a pre-emptive strike against a U.S. system if such a system would be too threatening.

C. Nuclear first strike:

If the Soviets believe that the U.S. system will work, is a part of a U.S. first strike system, and cannot be destroyed by a pre-emptive strike, they may launch a first strike before the U.S. system is deployed.

D. Develop countermeasures:

The Soviets could take steps to render the U.S. systems ineffective, such as:

1. Saturate the U.S. systems. Since the cost of an ABM system will be enormous, it may prove cost-effective for the Soviets to build many more missiles than a U.S. ABM system can handle.
2. Develop a system to blind the U.S. system. The weak link of any ABM system is likely to be its target acquisition and tracking apparatus. This might be vulnerable to blinding with, say, a ground-based laser system.
3. Develop conventional or nuclear weapons to destroy U.S. ABM systems.

III. TREATY COMPLICATIONS

A. ABM Treaty:

Clearly, the President's proposal would ultimately violate the ABM treaty. That treaty specifically forbids development of global ABM systems, even though it does not ban development of exotic weapons used for close-in ABM defense (it does ban all ABM deployments). Violation of this treaty is a very destabilizing action.

B. Outer Space Treaty:

The 1967 Outer Space Treaty expressly forbids nuclear weapons deployment in space. The x-ray laser being touted by Teller is a space-based system initiated with a nuclear explosive. Thus, Reagan's program may also entail violating the Outer Space Treaty.

C. SALT and START:

Countermeasures to an ABM system would seriously undermine any arms' reductions agreements. The Soviets would not agree to reduce their missile arsenal if the missiles would be needed to saturate a U.S. ABM system. Moreover, development of systems to damage U.S. ABM systems could be used to damage U.S. surveillance satellites, jeopardizing treaty verification provisions.

D. ASAT Treaty:

Any weapon which can destroy a ballistic missile can destroy a satellite, although high altitude satellites may not be targetable. Nonetheless, space-based ABM systems must be considered ASAT weapons and could be used against satellites and space shuttles. Ergo, no ASAT treaty. In sum, if the President's proposal goes forward, there can be no end to the arms race.

IV. SUMMARY

A. The Arm's Race and Stability:

1. No ABM can be sufficiently effective to protect population centers. It can prevent first strikes, but these can be prevented by other, less expensive means. In particular, no defense against cruise missiles is likely to be developed.
2. If both the U.S. and U.S.S.R. develop effective ABM systems, then the ballistic missile can be rendered obsolete. However, if this is the case, why not simply negotiate a treaty eliminating ballistic missiles.
3. The President's proposal threatens practically all arms control accords, including the ABM Treaty, the Outer Space Treaty, SALT, INF, and START.
4. If the U.S.S.R. fails to develop an effective counter to a U.S. system, and if we do not reduce significantly our offensive capabilities, the Soviets may be forced to launch a first strike before our system is operational.

B. Relation to "Weinberger Doctrine":

1. The Soviets can and will meet any U.S. threat, and are unlikely to allow their conventional forces to be compromised.
2. The cost of defeating an ABM system is likely to be significantly less than the cost of the ABM system.
3. The Soviets are aware of the fact that U.S. public opinion will make it difficult for the U.S. to sustain such a high cost program.

C. U.S. Allies:

It is unlikely that an ABM system can protect Western Europe and Japan. Thus, the President's proposal could shatter the Western alliance.

V. TECHNICAL ADDENDA

A. Anti-ballistic missile missiles: High Frontier -- calls for 432 battle stations, each with 20 to 30 conventionally armed homing missiles. "Like hitting a bullet with a bullet". Proponents claim cost of \$40B. DOD estimates \$200 to 300B.

B. Directed energy weapons:

1. Laser in space (chemical) -- need to place enormous quantities of fuel into space. Mirrors difficult. Can be countered by rotating missile or mirroring surface.

2. Laser on ground, mirror in space -- mirror would have to be huge (100 ft across). Same counters as 1.

3. X-ray laser -- initiated by atomic blast. One laser for 100 targets. No mirrors, no easy counters, but aiming would be nearly impossible. Also, one shot and weapon is gone.

4. Particle beams -- must be neutral or beam will bend in earth's magnetic field. Power supply major problem.

C. Generic problems:

1. System must be made automatic. There is insufficient time (less than 10 minutes) for a human-based system to respond.

2. Coordination of attack on more than one thousand targets.

3. Target acquisition and tracking.

D. Technical Summary: The likely system to evolve out of this effort is a combination of technologies. Even with such a mix, it is unlikely that a system can be deployed that will be able to make the ballistic missile obsolete; nor will any system be effective against cruise missiles. The power of a single bomb is too great for any defensive effort to eliminate the threat of massive destruction.

Nonetheless, I can perceive a system being developed which is able to destroy a large number of incoming missiles. The only real defense against such a system is to launch more missiles than it can handle (saturation), and this means a greatly increased arms race.

VI. Professional Lineup

Here is the lineup of people who have been responding to the President's proposal, and those newspapers who have committed on the editorial page.

A. Those positive on the President's proposal

1. Edward Teller: physicist and Nobel laureate, Reagan advisor
2. George Keyworth: President Reagan's science advisor and close associate of Teller
3. Gen. Daniel Graham (ret): former director of DIA, author of "High Frontier"
4. Gen. George Keegan (ret): laser and particle beam proponent
5. Fred Ikle: former ACDA director
6. Robert Pfaltzgraff: political scientist, Tufts
7. Wall Street Journal

B. Negative on the proposal

1. Physicists: Wolfgang Panofsky, Stanford; Victor Weisskopf, MIT; Hans Bethe, Nobel laureate from Cornell; Richard Garwin, IBM; Henry Kendall, Union of Concerned Scientists; and Jeremy Stone, Federation of American Scientists.
2. George Rathjens: political scientist, MIT, and former DARPA deputy director
3. Jack Ruina: engineer, MIT, and former DARPA director
4. Jerome Weisner: former president of MIT, Presidential advisor
5. William Perry: former DOD undersecretary for R and D.
6. Jan Lodal: former director of program analysis for NSC
7. Robert Hunter: former NSC staffer
8. Gerard Smith: former ACDA director
9. Robert McNamara: former Secretary of Defense
10. New York Times
11. Philadelphia Inquirer

VII. POSITION STATEMENTS

A. We should negotiate a treaty with the Soviets precluding the development and deployment of weapons to be placed in space and those to be used against space systems.

B. The development of anti-ballistic missile systems is potentially destabilizing and costly; the same protection can be realized by treaty

C. The exotic weapons referred to by the President can be developed at great cost; we should continue to support research in this area but no development. The research should be supported just in case the Soviets do development such a capability.