

Eye on Washington by Nicholas F. Benton

Abrahamson answers the SDI critics

Lt.-Gen. James Abrahamson, head of the Strategic Defense Initiative program, delivered an extraordinary two-hour briefing to the Pentagon press corps here Nov. 26 to demonstrate that progress in the SDI program is now very rapid.

Abrahamson's legendary patience was stretched to the limit by the cynical Pentagon press corps, at least the reporters representing the major news outlets. Before the beginning of a briefing, they characteristically exchange loud quips expressing their total contempt for Pentagon officialdom, and consider it their purpose in life to challenge the integrity of Defense Secretary Weinberger or anyone representing the SDI.

Abrahamson went through a detailed explanation of why the experiments of blowing up Titan missiles with a laser was an extremely important exercise to demonstrate the ability to adjust the tendencies of the heavy, lower-level atmosphere to distort the power of the laser. This is absolutely key to getting a ground-based laser up through the atmosphere into space, where its continued propagation becomes easy over thousands of miles.

A reporter then asked: "A number of people say that some of the tapes you release are basically stunts designed to impress the American public."

Abrahamson clarified some very critical issues:

- Overall, the program is "com-

ing along very well. . . . We are seeing invention and innovation coming along at just an incredible pace. . . . I'm lots more confident.

- "Are we ahead of the Soviets? I don't think so. . . . They have an operating system today that they have been operating for a decade and a half. . . . I think they are ahead of us quite substantially."

- "Some people are still talking about terminal defense and that that's what we are about, and we are not about that. We are about a layered architecture [as many as seven layers—ed.], is the most important."

- "The depressed trajectory [of the submarine-launched cruise missiles] is one of the areas our critics keep saying can't be handled by SDI, and that is absolutely wrong. . . . We do need some terminal defense in order to reduce overall leakage and to defend against the depressed trajectory kind of threat."

- "Where we've really made incredible progress is at the Lawrence Livermore Laboratory on a free-electron laser there where we think it is the most efficient one in the world."

- "We have very operative programs . . . and some of them coming up with very innovative ideas" for dealing with counter-measures. Most of this is classified, Abrahamson said.

- Referring to the pointing and tracking simulator he dedicated at the Martin Marietta Company at the end of November, Abrahamson said testing will begin within six months. The aim is "to be able to use a laser and to be able to destroy a missile, a booster, several of them per second. That's the kind of challenge we're after."

- Simulating experiments with the so-called "airborne optical adjunct" of the SDI does not "bump up against the ABM treaty," as one reporter argued,

because, as the general explained, "it does not have the capability all by itself to act as a component. That is the fundamental reason."

- Abrahamson spoke of the development of a new material, gallium arsenide, which duplicates the function of silicon used in computers, but is radiation-resistant: A nuclear explosion in the atmosphere cannot knock out an SDI system.

- He spoke of a number of other "advanced materials technologies" where breakthroughs are occurring for the SDI that will have profound impact on the industrial economy as well. For example, a fiber-optic gyro, which reduces the weight of the equipment "in an incredible way and still performs the gyroscopic function with the kind of accuracy that we're working on."

- Another materials technology breakthrough area identified was capacitors (which store energy), where at Sandia Labs, a new material was invented, with increased capacities. Abrahamson then showed the reporters a silver-dollar sized sample of a material capable, he said, of "somewhere between 100 and 200-fold increase" over older capacitors. "We're actually leap-frogging, and that's what I mean by the inventive stage of the program," he said. The new capacitor can store as much as 30,000 joules in a single kilogram.

- He also passed around to the reporters a component the size of a stick of gum which turned out to be a "cryogenic refrigerator" that can get down to 70 degrees above absolute zero.

Abrahamson concluded by saying that despite the great progress in the program, budget cuts are hurting the effort badly. This, he said, is forcing decisions "which are premature, I'm sure," to cut certain lines of research.