INTERVIEW WITH DR. GEORGE A. KEYWORTH
28 SEPTEMBER 1987

This interviewed was conducted by Lt Col Baucom in the offices of The Keyworth Company, Washington Harbor, Suite 360, 3050 K Street, NW, Washington, DC.

DR. GEORGE A. KEYWORTH (K): Let me remind you right off the bat, there is absolutely no question that SDI originated with the President, although a number of antecedents seem to have manifested themselves in many different ways. Certainly, in one respect, you can trace the push for a strategic defense system back to things like early talks that I had with Marty Anderson long before SDI emerged as we now know. However, I can also remember very early meetings with the President in which he expressed misgivings with the constraints current nuclear strategy placed on a president.

One of these occurred, I believe, in August 1981 while I was talking with the President and Ed Meese. My background as a scientist, I suppose, encouraged the President to bring up the matter of deterrence which was out of the context of this meeting. It was clear to me at this very early stage that the President felt very uncomfortable with the "nakedness" of deterrence without defense, without any control over what had to be done should a nuclear war be initiated. Furthermore, and I saw this uneasiness manifest itself more and more as the President grappled with the constraints imposed by the very few tools he could use to maintain the stability of our relations with the Soviets.
I worked very closely for the President for the first couple of years on strategic modernization. So, for me, strategic defense did not begin with SDI, but rather with MX basing—I was for awhile the administration’s spokesman on dense pack. I was one of the strongest advocates of dense pack, still am I might add. Also, I was deeply involved with the problems of ASW [anti-submarine warfare] and survivability of submarines into the next century, because clearly, the submarine arm of the TRIAD was by far the strongest leg and we were concerned that it continue strong and healthy.

In these efforts, I worked closely with the President and watched him first hand as he got involved with the issues of nuclear strategy in ever increasing depth. I might add, by the way, that people have said that the President was not comfortable in grappling with the details such as precise flight times and whether a silo is hardened to 75,000 PSI or 25,000 PSI overpressure.

My reaction to that is that I am glad there is somebody worrying about the overall issues. The President has a remarkable ability to assimilate information and keep a picture of what it really means in the policy context. By the way, I’ve been out of the White House for more than a year and a half, so I’m not sitting here trying to glamorize Ronald Reagan; but I am trying to tell you that this man has an absolutely amazing intuitive mind. He can sift out what matters from ten thousand bureaucratic details in a remarkable manner. I would say that the President taught me a tremendous amount about the difficulty of maintaining
a nuclear balance in this counterforce age.

People forget how deterrence looks to a President who must listen to discussions that indicate there is a widespread perception that the concept of deterrence we have today is the same as it was in the age of (quote) mutual assured destruction (unquote), simply two people each of whom is holding a giant club hanging over the other's head.

By the way, I think that is the way the President perceived the current concept of deterrence when he came into office. But I think he has a very strong feeling for the sense of crisis and instability that has emerged as counterforce weapons have been produced, and in particular since the Soviets have put so much of their arsenal into hard-target kill, counterforce weapons.

So, to the President, it has been a three-part issue. First, there was the sheer vulnerability of an undefended public. Second, there was definitely an ethical issue of holding civilians hostage. I well remember that Judeo-Christian thinking about war has always distinguished between soldiers and civilians a la Freeman Dyson's book *Weapons and Hope*. Third, there is the fact that American Presidents do not have sufficient tools to maintain an adequate nuclear balance which I define as a situation where neither side has an incentive to go first.

So, the President had a very deep grasp of the nuclear situation, and obviously his understanding became more and more profound as time went on. Sure, SDI does go back to Marty Anderson, and the President with his national security advisors, from Dick Allen through Bill Clark and Bud McFarlane, certainly wrestled
with this whole family of strategic issues. Remember, strategic modernization was the number one issue of the first two years of the Reagan presidency. It took the most of the President’s time and was one of the most difficult issue we dealt with. The President was immersed in strategic issues during this time; all along he saw strategic defense as an option.

You should remember that March 23, 1983, came after several months of the most difficult period of introducing MX. We had introduced dense pack in November of 1982 which was itself the year of a very difficult election. There were a lot of people out of work. The economy was just beginning to boom, but we still had a lot of unhappy people in the country. The sentiments reflected in the election were not strongly pro-defense.

By this time, I realized that nuclear modernization alone was not going to restore a stable nuclear balance. Where arms control was concerned, we were almost in a stand-off position with the Soviets. So arms control and strategic modernization, the pair of tools with which a president maintains an adequate nuclear balance, did not, I believe, meet Ronald Reagan’s criteria for adequacy. He did speak a number of times about what tools future president’s would have. Clearly, he did not think SDI was going to be a tool for him; it wound up being much more of a bargaining tool for him than we ever expected.

So in fact, I’m just trying to explain why all the threads of SDI go back into the early part of the first administration. Certainly, I was his scientist. Martin Anderson had been with him years before and was his advisor on domestic policy. Bud
McFarlane was a national security advisor. I suspect if you interview Nancy Reagan, you'll probably find another perspective on these matters. But they all converge on the President because it was entirely his idea. Any arguments to the contrary or trying to ascribe it to a particular meeting (I think I was in most of them) is sheer nonsense.

LT COL DONALD R. BAUCOM (B): Can you tell me about when the discussions of strategic defense started and who was involved in them?

K: My views of the President's sentiments with regard to the strategic nuclear situation are based on discussions I had with Marty Anderson during the early part of the first administration. Anderson's perceptions, of course, go back to the time when Reagan was Governor of California and to Reagan's visit to NORAD in 1979 and discussion that Reagan had when he visited Livermore and discussions I had with the President.

These, of course, were not meetings, but rather discussions. The meetings I refer to are things like a meeting with Edward Teller.

B: Do you recall when this meeting took place?

K: October or November of 1982 I believe [Keyworth's calendar indicates that the meeting occurred on 14 September 1982]. I set up this meeting at Edward's request. The subject of the meeting and the subject of the briefing paper I sent in was the freeze movement. Edward had been giving a lot of speeches to groups of people who were involved in the nuclear freeze movement. He had a lot of very valuable feedback and talked to me a
great deal about it. Edward, by the way, is my mentor. These were comments I believed the President should hear.

So the basic subject of that meeting with the President was to be the freeze movement. Although the meeting was scheduled to last thirty minutes, it was over in exactly twenty-two minutes because Edward didn't chose to talk much about the freeze movement. Immediately after he sat down in the Oval Office, Teller started talking about major breakthroughs in the Soviet Union in terms of bomb pumped X-ray lasers. It wasn't a terribly coherent discussion. It "degenerated" into a request for a specific amount of money for Livermore National Laboratory which was somewhat embarrassing for me since all White House staffers are discouraged from bringing requests for funds to the President.

B: Did his appearance on Bill Buckley's "Firing Line" have anything to do with this meeting?

K: One thing-- Sometime before this meeting, late summer of 1982 as I recall, the President was getting a briefing in the situation room and I and a small group of people were also attending. The subject of the briefing, I believe, was either Soviet offensive or defensive forces. At one point, the President turned to me because of my relationship with Edward and said that he had seen Edward on Buckley's show and Edward had said that no one in the administration was listening to him.

By the way, he didn't say so, but what he meant was that no one would talk to him about bomb-pumped lasers. Edward was a member of my advisory council and was very active in lots of things in the administration, but he was frustrated because no
one took the bomb-pumped X-ray laser as seriously as he did. And he expressed that frustration on Buckley's show. The President is a strong and staunch admirer of Edward Teller; the President likes people who do things, who get things done. Teller in my mind is a very important figure in American history.

President Reagan said that if Dr. Teller expressed that view, I hope that my administration treats Dr. Teller different from other administrations. So the next time Edward was in town, I sat down and talked with him and asked what the Buckley show comments were all about. He told me that he would like to express his views to the President. But the subject, I repeat, that he was to speak to the President about was the kind of people involved in the nuclear freeze movement and the kinds of sentiments they were expressing. It was just before an election, and Dr. Teller felt that the President should know the kinds of things he could tell him. Teller wanted to tell him that the people were not kooks--they were serious people--that's what Edward was to talk about.

The reason the meeting ended early was because it was a little bit embarrassing, for me. Knowing Edward so well, I thought it demeaning to hear him talking about how much money in which fiscal year. You see, Edward had been in my meeting prior to that meeting, and we went from my office down to the Oval Office. The meeting in my office was attended by another of Teller's proteges, Lowell Wood. He wanted to attend the meeting with the President, but I told him that I did not think this was appropriate--certainly Teller, with one of the most brilliant
minds on earth, was perfectly capable of expressing himself without any help. Definitely, Lowell was encouraging Edward to bring up Livermore’s budget. So, the meeting was not a great success.

Furthermore, I do not think this meeting had the slightest impact on the President’s perception because his views on defense were deeply rooted and did not need nourishing. Also, Edward’s comments were not about defense but rather about the bomb-pumped X-ray laser, and I don’t think it was clear in that meeting that this laser was a means of defending against warheads. This was because the entire discussion, as I remember, was about the Soviet Union’s development of such a laser would mean to the United States.

By the way, while I don’t remember everybody who was in the meeting, the Vice President, Ed Meese, and Bill Clark were there. I do not recall if Bud McFarlane was present.

B: I heard you mention Karl Bendetsen earlier. Would you discuss his role in all of this?

K: Right. In 1981, in fact in the fall of ’80, what became the High Frontier group emerged. Some of the initial supporters were Joe Coors, Karl Bendetsen, and for awhile Edward Teller.

I knew nothing about this prior to the election. But after I came on board, some of them contacted Ed Meese for encouragement and to tell him what they were doing. I was assigned to use my office as the liaison with them. As a matter of fact, we had a little flap with them because they put my name on their stationary as White House Liaison—that wasn’t something that we did in the White House. This did cause a little embarrassment.
Anyway, I dealt with this group off and on, and we became friends. We in the White House were very nervous about the way the High Frontier effort was proceeding because they were very aggressive in raising money and obviously, the White House wanted to stay away from that end of it. Edward withdrew from High Frontier early on because of his concern (which, by the way, I totally shared and still do) about the viability of the KKV approach to missile defense.

Edward, Karl Bendetsen, and I had, how can I say it, God only knows how many meetings in my office. I didn’t see a lot of Danny Graham—I saw him some, but not a lot. Many of our discussions were very interesting. But most of who had technical backgrounds, Edward and myself and my staff and others, all felt that the idea was admirable but focusing all down on one simplistic approach was worrisome. I have had a lot of talks with Danny over the years and with others about why Danny felt compelled to stake the whole thing on one particular concept.

To make a long story short, they [Bendetsen and his committee] were preparing a report which they wanted to give the President. I worked with Karl in particular in developing a short summary of the report and eventually we set up a meeting. It was held in the Roosevelt Room. The President was in a cabinet meeting (I think there were two cabinet meetings in a row) concerned with preparing the President’s budget submission to Congress. In between these two meetings, he came out of the cabinet room and had the meeting in the Roosevelt room for about five minutes. The cabinet room is across the hall from the Roosevelt Room.
room.

The President had with him Bill Clark. I was there and Karl Bendetsen was there. Bill Wilson was going to be there, but then had to go back to Rome. I believe Joe Coors was there. Danny Graham was not there. All this meeting consisted of was something like: "Hello. Here is something we would like you to read." So the meeting went on for less than five minutes.

B: You mentioned Ambassador Wilson. Could you elaborate a little on his role in all of this?

K: Bill Wilson was and is a very close friend of the President's. He was also one of the loyalists who had supported High Frontier from the beginning. He has always been a strong supporter of strategic defense. In a sense, then, Bill was like Joe Coors.

(PAUSE)

If the picture I am trying to give you is misunderstood, it will trivialize one of the more important steps toward the "post-nuclear age." Right or wrong, advocate or critic, the introduction of SDI is of monumental importance. To think that such a thing emerged out of these token meetings-- I might add with all respect for a President something about his hearing problem. This problem is sufficient to cause communications problems between the President and those who do not communicate with him on a routine basis. Those who around the President know of this problem, know which is his better ear, and know how to speak to him so that he will hear clearly. You always speak a little more slowly around anyone who has a hearing difficulty.

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An example of where problems arose was when Edward [Teller] met with the President in the oval office. He unloaded a mass of enthusiastic, carefully thought out comments on Soviet efforts to develop bomb-pumped X-ray lasers. First of all, details of technology; second, a very rapid stream of very complex thoughts; third, sitting a fair distance from a President who does have hearing difficulties. So, I would say that information transfer was not high during this meeting.

Very often, when the President doesn’t hear something clearly, he’ll say: wait a minute, I didn’t quite get that.

But that wasn’t the nature of the meeting with Bendetsen, for that meeting was essentially just to hand a briefing paper to the President and ask him to read it.

This paper was brief and simple. It placed a lot of emphasis on setting up a group of outside advisors that would have unusual constitutional powers to advise the President on the issue of strategic defense. The President, I would say, was far ahead of this paper in his thinking.

B: Mr. Coors mentioned that after the President’s March 1983 speech his group pushed very hard for a Manhattan Project approach for strategic defense. Was this briefing paper that was handed to the President on 8 January an early effort to get him to think in these terms?

K: Absolutely! They specified the creation of a presiden-
tially appointed group (I don’t recall the title) that reported to the President and would oversee the program, its implementa-
tion, and provide input to the President on how things should be
done and how things were going. It would have been an extremely powerful organization. In fact, we even called it the Manhattan Project approach.

B: With regard to the planning meetings between you, Bendetsen, and Coors, I understand that a number of these meetings were held in Bendetsen’s office at Champion Paper.

K: Some there; some in my office. Yes, I attended a number of meetings over at Champion Paper. We also had a number of luncheon meetings—we lunched several times in the White House mess. We were and are friends—Bendetsen and I.

B: Were any notes or minutes keep of any of these meetings?

K: I’m not sure whether I have any. The papers of my office must, of course stay, in the White House Archives. There certainly were a lot of notes from my interaction with the High Frontier group, including copies of drafts of what they wanted to submit to the President, including the final draft—that kind of thing.

B: Do you have that final draft?

K: Yes.

B: Would there be any possibility of seeing it?

K: Sure. By the way. I have something that you might find interesting. I’m jumping ahead a little now, but when we were preparing the March 1983 speech, I have a xeroxed copy of a draft of the speech with the President’s comments pencilled in. It tells you why he is President and I’m not.

B: Could I get a copy of that?

K: Sure.

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B: I'll put it in the archives I am building at SDIO.

K: Look, you can have access to anything I own on this subject.

B: I'll arrange to come back over when we can go through the files. Could we talk then about the speech.

K: Sure. Let me draw a line from where we were to the speech.

Remember what we have going on here. We have the High Frontier effort and the activities of a number of the President's friends. I want to emphasize that the President did not know Karl Bendetse very well, but the President has enormous respect for Joe Coors and knows him well. He has known Bill Wilson much longer and much better even than Joe Coors. These are "kitchen cabinet people." They are friends, but they are more than that too--they are people whose judgment the President respects. Certainly it is true that over the course of the years the President grew farther apart from these men; they were retired, and he was working. Oh, there is another guy I forgot--Jac Hume.

(Break for discussion off the record)

K: So I want to be sure you understand that you had this High Frontier activity going on. You had a constant effort on the part of the President to address basically the whole question of nuclear stability. While everyone else was working basing modes for MX and strategic modernization elements, the President was working the whole.

I think one person who will capture this with crystal clarity is the President's biographer who is a remarkable historian. You
might ask him for his perception.

I worked close enough with the President that I know that Mr. Reagan has this marvelous ability to work the whole while everybody else is working the parts. The episode of the strategic defense initiative is one of the finest examples I have ever seen of it although there are plenty of others too.

Anyway, all of this was going on when along came our final agreement in the administration and in the Pentagon that dense pack was the basing mode of choice. And by the way, I know that it is fun to say that it was developed for purely political reasons because it wasn’t Carter’s MPS; that’s nonsense--that’s not the way issues get worked in the real world. Dense pack received a lot of support because a lot of people believed that it would work and still do. We went forward, if not with enthusiasm, at least with a lot of support.

The National Security Council meeting to make the final basing mode selection was held on 18 November 1982; it was an experience I know I will never forget, and I suspect it remains strongly in the President’s mind to this day. Typically, Jack Vessey came into the meeting with a great big legal pad on which he had written down all the comments of the other Chiefs, and he said the Joint Chiefs were recommending dense pack. When he was asked to state what each of the individual service leaders felt he said that he supported the concept, the Air Force supported dense pack as the basing mode of choice, the Army would support it only if it had terminal ballistic missile defense associated with it, the Navy preferred TRIDENT submarines, and the Marines
really didn’t care about strategic things. And I ask you, is this the way democracy functions or is this a bit of parochialism.

Anyway, this illustrates what I mean when I said we had a consensus. By consensus, I mean that basically a large number of leading military officers who had gotten deeply involved in the pluses and minuses of various basing modes agreed that dense pack was the mode of choice which brought along with it an option to strengthen missile survivability through the deployment of a ballistic missile defense. However, the idea of terminal defense was rejected because analysts concluded that the deception gained from putting the 100 missiles in a field of 300 silos increased survivability more, for less cost, than would a terminal defense system. Terminal defense was considered a growth option only if the Soviet Union chose to deploy MARV’ed (maneuvering re-entry vehicle) warheads to get terminal homing accuracy.

Then, we went out and tried to articulate this to the Congress and got our heads handed to us on a platter. I went up and testified with Cap and Jack Vessey in November 1982, as I recall. It was an experience I’ll never forget. Remember, this is two years after the administration had begun, and we were running into some strong opposition to our increased defense budgets. Furthermore, the nuclear freeze movement was in progress, even if this wasn’t a big issue.

All of these things that were going on, some of which had been in progress for several years, contributed to the emergence
of the President’s speech on strategic defense.

By the way, during the course of the speech, I do not know everything—the speech was given on a Wednesday evening. Saturday morning, Bud McFarlane gave me a call on the secure line and started explaining something and then said: look, I’d rather not talk about this over the phone, even on a secure line, could you please come down to my office. Remember, he was not national security advisor at this time—he was deputy to Bill Clark. I went down to his office, when would that be—the 19th of March I believe. I went down there, and John Poindexter was in his office with him. We closed the door, and the three of us sat down and talked. The question first proposed to me was basically: what would you think if the President wanted to propose some new options in the area of strategic modernization?

At this point, I have to give you a piece of information that has been referred a number of times in various contexts. This refers to my science council study of this issue. Starting about nine months before the President’s speech, we had set up a group of people on my advisory council to look at the following question: if the strategic modernization program should drag, what new technologies might emerge to present the President with new options? It was not just defense we were looking at. We examined terminal homing, submarine deployment systems, new strategic options, etc. Don’t forget that this was a pro-defense administration that had come to office in 1981; as such we had been looking for the best defense options we could find at that time. We weren’t exactly inventing new force structure elements
a few weeks after the President was elected without considering the issues.

The people on this panel were outstanding. They included David Packard, Edward Teller, Saul Buchsbaum, and Ed Freeman. I wanted this distinguished group to take a hard look at what new technologies might be able to deliver the President new choices as time went on.

One of the sub-elements that they looked at was strategic defense. First, Edward Teller was on the committee, and as you know, he is a very strong advocate of bomb-pumped X-ray lasers. This laser became an issue of consideration. Their recommendation to me, by the way, was that there were no really radical changes that were likely to offer new choices to the President, but they suggested two prime things. One of them that related to defense was the potential opportunity offered by ground-based lasers which emerged from developments at that time in atmospheric compensation technology. The second possibility which most of the group supported far less enthusiastically, but which one member strongly supported, was that the bomb-pumped X-ray laser should be more carefully studied.

Let me tell you my opinion. I was a skeptic of strategic defense when I came here, and I was a skeptic when I was at Los Alamos. I was a skeptic because when I went to Los Alamos in 1968 we wrestling with the technology for missile defense, and we were still wrestling with it during the old discussions of the ABM treaty. From our point of view, a bunch of specialists out in the field, missile defense even using nuclear explosives was a
very difficult task. Extremely difficult. That was when we really began to understand black-out and radio frequency interference effects. You know, really, a nuclear weapon is a brute force method--using a defensive laser is a surgical operation.

At this time, Los Alamos was a laboratory that had a lot of people with skills in the area of directed energy weapons. As time went on I moved up in the hierarchy there so that before I became the President's science advisor I had run two programs at Los Alamos: the laser fusion program and the bomb diagnostic program. So, off and on, I had thought a lot about strategic nuclear issues over the years and talked about the issues with a lot of people. The thing that it always came down to, and Edward and I shared 99% of our views on this, was that any expensive system that sat up there in orbit was inherently vulnerable.

Now, out of this study that I had my science council do there emerged information about atmospheric compensation technology that had been developed by DARPA and through work carried out in Hawaii. I found it then, I find it today, the turning point in our discussions of strategic defense.

I don't to make the transcript too long, but let me make sure there are no misunderstandings here. The importance of this new technology was that it could in principal allow the expensive component of a strategic defensive system to be established on the ground where it could be maintained and defended.

Furthermore, don't forget that I had been wrestling heavily with strategic modernization for sometime, and strategic defense was but one minor, time-consuming element of this broader pro-
gram. I had written a lot of editorials in defense of the TRIAD taking the position that you needed at least one truly survivable element and we had it in submarines. But the other elements are extremely important also, and you should enhance their survivability. Stealth and dense pack are two programs designed to provide this added survivability. The combination of all legs of the TRIAD gives our strategic nuclear forces their overall survivability. These conclusions are similar to those of the Scowcroft commission. So, I saw atmospheric compensation technology as the key to modernizing another element of our strategic force structure. A survivable strategic defense system would complement and enhance the land-based ICBM leg of the TRIAD by making it more survivable. Now, not only would the SLBM's be virtually invulnerable, but there would be less temptation even to strike at our land-based ICBM's.

Now, I began think that we might really be able to do something in the missile defense realm. Then, on 19 March, along comes Bud McFarlane asking me what I would think if the President wanted to introduce some new strategic options. I had no idea what he was talking about, but my immediate answer was that I think it could be very exciting. I have had this science council study going on; they have come out with some things that I think are very exciting.

By the way, my first suggestion had nothing to do with this. My first suggestion related to something I can't talk to you about--it was something in the realm of applying low observable technology to the tactical arena. I thought there were possibil-
ities in this area with real potential for improving the stability of the nuclear balance that could and should be pursued.

In this conversation, we worked up to what SDI was going to be about. Then, I was asked what I would think if the President wanted to make a major announcement of a national commitment to developing a strategic defense. First of all, I admit to you that I was dumb-founded. The thought went through my mind that I had been thinking in offensive terms for the last two years, and then I blurted out what the science council had found in the area of atmospheric compensation. Then I said: Gosh, if there ever was an exciting time to take a look, now is it. To make a long story short, Bud had a very rough one-page draft that he had typed. How do I know that he had typed it? It was one of those classical products one gets from a person who is not a typist—he x'es out words, etc. Bud had probably prepared this draft based on a discussion he had had with the President himself.

By the way, McFarlane and Poindexter told me something at this point. The meeting had lasted for about an hour that Saturday morning. I had no idea in advance what the subject of the meeting was going to be, and I was somewhat surprised to find this high overlap with some of the things I had been doing. Specifically, I am thinking about my work with the science council which had removed some of my skepticism. But I still didn't know quite how big a thing we were talking about. Then, Bud gave me the speech and said the President would not proceed with this project unless I concurred. Whether or not this was true, I walked out of the room with a heavy sense of responsibility in
this matter.

After the meeting, I went back across the street and looked carefully at this speech as Bud had asked me to, and I began to get really quite intrigued by it and by the possibilities of it.

This was followed by four days of unbelievable activity. I had one fellow in my office that I was very close to, Vic[tor H.] Reis. I went over to his home that evening and said we couldn’t talk inside, so we went out for a walk. He has for years been an outspoken critic of strategic defense.

Sometimes, you may wonder why scientists are so polarized on this issue of strategic defense. One reason is that the scientific community has turned heavily pacifist in reaction to wartime development of the atomic bomb. Secondly, the community of fusion physics which incorporates a lot of the directed energy technology is notorious for saying anything to get support. So this group has become somewhat of a suspect element in the scientific community. I belong to the critical factor; those who criticize. We just felt that they had a long, long way to go.

So there was a lot of skepticism about strategic defense. Reis was very skeptical. Basically, he wanted to turn the President’s speech into something that nurtured what we had worked on for a long time which was conventional modernization using basically stealth technology, some real time intelligence, more survivable communications, and super-smart munitions. I tried to argue something rather obvious with Reis—neither of us was the President of the United States, neither of us had been elected, and so on. Vic was a wonderful guy, but the result of our dif-
ference here was that he eventually left my office, feeling very uncomfortable with his position.

I asked Solomon Buchsbaum, chairman of my science council, to come down to discuss this issue. I believe he arrived on Monday. I was not supposed to show the speech to anyone, but Reis and Buchsbaum were two extremely trusted people. I wanted their advice. They were coming on board a very fast moving train, so they couldn’t really contribute a great deal to my thinking. After about a day, I went down to Bud McFarlane’s office. I had cold feet and said to Bud: "Are you sure we are doing something responsible?"

Pardon me for sort of displaying my nakedness here, but it’s all part of the true story. I had suddenly become aware of the strategic implications of what this meant, and I became very nervous. I went down and told Bud that my feet were cold. Bud talked to me for a half an hour or so, and I walked out having gotten that out of my system. And from my point of view personally, my commitment to strategic defense was established during this discussion. After that, I never had any compunction about strategic defense, but I want you to realize what an important role Bud McFarlane had here. You are catching that I hope. Bud wrote the draft that got the process going.

[In a discussion about a week after this interview, Dr. Keyworth described Mr. McFarlane as a man who fully understands the importance of consensus building in gaining bureaucratic support for an executive decision.]

B: Still, according to what Mr. McFarlane said, the Presi-
dent had given you what was essentially the power to veto the entire project. So, if you didn’t go along with it, the--

K: Yeah! I guess. I’ll never really know, and I don’t really want to ask. It is not the kind of thing I really care about. I never knew if that was Bud’s way of trying to get me on board or whether it was real. But either way, it reflected the seriousness of how I took my role.

But--Bud wrote that first draft and gave it to me. Then, I sort of carried the brunt of putting drafts together from then on, and I spent a lot of time writing the final product myself. In addition to this, Bud did one other critical thing--he fielded the unbelievable opposition that emerged in the next three days.

I went over to the Pentagon that Sunday and met with Jack Vessey. I got a very interesting story there; it is one of the mysteries about all of this that I have never resolved.

You realize, of course, that there were a lot of people who were not associated with this, but after a year, when it began to be famous, a lot more people began to associate themselves with the program. The roles of these people became greater and greater also. You know the way human minds work.

Anyway, I went over and talked with Jack. I was carrying about the third or fourth draft of the speech insert, and Jack looked at it and he was a little uncomfortable and he told me the Chief’s role in this. He said I think in February, I was not at the meeting, in one of the regular meetings with the President in which the Chiefs report, I think Jack wasn’t there and Jim Watkins was acting or Jack was there and Jim Watkins spoke for the KEYWORTH/26MAY89/23
Chiefs, I can't remember which, but I remember this. Jack Vessey went to his notes, his famous yellow legal pad--either he didn't trust his memory or he liked to be proper about things, so he always read things that the other Chiefs had said and he wrote them down on his pad. Jack went to his pad and he read from it the essence of what they had said to the President. And there I remember distinctly that the Chiefs had recommended to the President: Quote that a new strategic vision needed to be developed unquote.

Let me tell you the context of this, for it is not as important as it sounds. Remember, these gentlemen had been through the whole MX, the B-1, stealth, and Trident in the previous administration and now in the first two years of the Reagan administration. They recognized that the strategic balance was certainly not emerging in our favor--our position was eroding. By developing a new strategic vision, the Chiefs meant that the West needs to take a look at its nuclear and conventional strategy. My view is that we need a new strategy for the West in light the strategic advances of the Soviet Union over the past forty years. But what they were saying is what we need is a new strategic vision.

Jim Watkins, as I'm sure you have been told before, is a very, very deeply religious man, a devout Catholic. He was under a lot of pressure as a senior military man and devout Catholic because of the Bishops' letter on nuclear weapons. Watkins became a strong proponent of SDI and gave a speech in support of it not too long after the President's speech. This speech sur-
prised me, for I thought I knew Jim very well, and I had no idea that he was a pro-SDI man. I don’t mean to be personal here, but Jim doesn’t understand SDI. I am a great fan of his, and I went over and spoke to him many times. The complexities of SDI were not what he was interested in; it was the ethical and moral implications of SDI that Watkins liked.

Anyway, I am telling you what information Jack Vessey saw as being transferred to the President. This was in the context of my trying to write the speech. So I think this was as Jack Vessey saw it. I know that Jim Watkins held a dual supporting role of that strategic vision, seeing it as a complicated matter.

That was on Sunday. As I said, for the next three days, the opposition emerged. I believe it was on Monday that George Shultz attended a meeting in the Oval Office in which the intense opposition of the State Department manifested itself. Shultz called me a lunatic in front of the President and said the implication of this new initiative was that it would destroy the NATO alliance. It would not work, Shultz said, and was the idea of a blooming madman.

On Monday or Tuesday night, Richard Perle called me from Portugal. He suggested strongly that I fall on my sword. I should tell the President that I would oppose the new idea publicly, do anything to get it stopped. This was the kind of opposition that we encountered, then. Richard Burt from State was violently opposed, Ikle was also violently opposed.

B: Pretty heavy opposition.

K: Oh, yeah, but the beautiful thing was that there was
nothing that was going to change the President’s mind. I hope you realize the point I am trying to make which is how deeply the President had thought this thing through. Not the details. I don’t think the President to this day clearly distinguishes the role of lasers and particle beams. Why should he? That’s why he has technicians like myself. But as far as whether or not it was feasible, he most certainly explored this question. That was the question asked of me; if you really don’t think this is possible, tell me and I won’t do it. I couldn’t say that because I didn’t feel it; it wasn’t true. In retrospect, I think it is easier than I thought at that time. Actually, I think we have been awful successful since the start of this program.

The President, then, was absolutely committed. McFarlane headed off most of these real screaming critics. I guess I have never seen such opposition to anything, as that which I saw to the strategic defense idea during those few days in the White House. McFarlane headed it; he attempted to accommodate some of the State Department’s concerns almost all of which had to do with the impact on the Alliance.

Oh! I should tell you that initially, the earliest discussions of this point with the President and the President’s speech were a little broader than just defense against strategic nuclear missiles. They basically were about what a military expert would interpret as a movement into a combined offense-defense force structure, all the way from nuclear to conventional. Don’t forget, the President had had a lot of briefings on super smart munitions. He had asked me a lot of questions about why build
tanks? Why not build "tank seekers?" So the President was well aware of the new technologies that were beginning to make defense against a lot of different things more practical than they were before--products of the information age if you wish which is what a smart munition is of course. The President saw all of this.

In negotiating with State, McFarlane picked the elements of their concerns that seemed most valid, and we tried to accommodate them in the speech. We always had two versions of the speech going. In my office, I called them the whimp version (the one responding to State Department concerns) and the real version (the one based on McFarlane's original text). When we took them over for the President to look at, he always picked the real version--always the same commitment to a firm statement of his intentions. So in spite of the opposition, we were ahead, so to speak. The President's commitment never waivered.

The last day, Wednesday the 23rd, we sort of divided up bringing in the key people in the Congress and a few people in the Defense Department. I remember that Bud and I had Senator Tower. I had Dick DeLauer over to my office and explained to him what the President was trying to do. So it is true that not many people in the Defense Department had any idea that the President was going to make the speech.

You should take a look at a Time magazine article by Hugh Sidey. He writes a page long article in the magazine every now and then. One of these was about Ronald Reagan, SDI, and authorship of the program. In there, you will see that the President sent him a statement to the effect: I don't know why people keep
asking me this question; the idea behind SDI was mine. Have you ever seen Ronald Reagan take credit for anything?

B: Nothing other than responsibility.

K: Right. But never has the President gone out and sought credit for anything. I don’t know of anything that was more clearly Ronald Reagan’s than SDI was, and I myself have torn my hair out over the number of people who have sought credit in the process and trivialized the process in doing so.

Let me go back to that period just before the speech. In the beginning, on the Saturday before the speech, the only people who were knowledgeable, the only people who knew what was going on, were McFarlane, Poindexter, Bill Clark, and myself. A day later or so, Ray Pollock was involved. Closer to the time of the speech, Gil Rye became involved. Rye wasn’t involved until it came to writing the messages to the various embassies. So, in the beginning, there were just three or four people involved, the beginning as I knew it. Bill Clark wasn’t operationally involved, but he was there and was supportive. As more tasks had to be done, more and more people were brought into the process.

Cap and Perle were both over in Portugal at a NATO conference. They knew something was happening, but only on Sunday or Monday.

So it was all building very, very quickly. No question that this whole process built very quickly. But there is also no question that the thinking about strategic defense went back a long way. There is no question that the technology assessment of whether this was feasible went back a long way too.

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Oh, by the way, there is an amusing anecdote about this. To this day, I still remember my reaction walking out of a meeting with Poindexter in which it was stated that one of my jobs was to frame a consensus in the scientific community. You couldn't get a consensus in the scientific community on the benefits of motherhood and certainly not on an issue of national security because of the pacifism of the community.

Anyway, we carefully selected a representative group of very senior and famous scientists to come in and have dinner in the East Room of the White House. Past Secretaries of State and Defense were invited and the entire serving cabinet. McFarlane started us off with his comments; I gave a long briefing on what the President was going to say and why, and discussed the feasibility of it. Then we had dinner. At the end of the dinner, on came a giant TV, the President went into the Oval Office and gave his famous speech.

By the way, I could not tell even Edward why he was coming to the White House. He was one of those to whom I spoke myself. I said, Edward, I can just tell you this, if you come you are going to be the happiest man in the world, but I can't tell you why. None of the people knew what was up when they came to the White House--I don't think any of them knew that it was a speech that had anything to do with defense. It was most definitely a surprise.

B: Mr. McFarlane mentioned a briefing in the afternoon.
K: He and I briefed the press in the afternoon. This was probably somewhere around four or five o'clock in the afternoon.
We gave them handouts that were not to be released until after the speech. After that we went in and briefed the scientists and secretaries assembled for the dinner.

B: Was John Pike there?
K: Oh, God! No!
B: Well (Jokingly), I thought you said you wanted to have a representative group.
K: Would you like to have John Pike in the White House?

There was an interesting anecdote. It foretells a lot. I didn’t know it until long afterwards, but George Shultz came up to Edward Teller after the dinner, and said something about can it be done. And Edward said, I don’t know exactly what it is to which to refer. And Shultz said at least a 99% effective system. I, for one, never considered this idea of a 99% effective defense as a perception the public would pick up. I’m quite sure the President thought the same way as did, I believe, Bud MacFarlane.

Within about six month’s this idea of a near-perfect defense turned into the toughest piece of propaganda we had to deal with; we are still not out from under it to this day. We should have seen it coming. That was perhaps one of the penalties for putting this thing together so secretly and quickly. Of course, I told you how strong the opposition was; if we had done it any other way, it would have been impossible.

There is a book that did a lot to help me understand the reaction to SDI. It is called Why Democracies Perish by Revele. It tells you a lot about why people in democracies think the way
they do.

George Shultz perceived SDI as useless unless it was a perfect shield. Yet, to me in retrospect, the problem was quiet simple. For years, Presidents have tried to deal with the counterforce balance, while the crisis in stability comes from the counterforce weapons. With counterforce weapons, if you can introduce a defense system that is effective enough to keep an enemy from devising a targeting scenario that is effective, then he is denied a first strike and you have restored a measure of crisis stability. That to me is a stage one, initial requirement for an effective SDI; and that certainly is not a 99% effective system.

I had been immersed in the entire counterforce problem, as in the case of my work on dense pack, a concept that makes no sense except in a counterforce environment. Yet we have a public that had never been exposed to the problems associated with the transition from countervalue to counterforce nuclear missiles --no one had ever sat down and dealt with the strategic implications of such a transition. So here we were with the public thinking that we were working an old problem of nuclear deterrence and here we were living in the age of counterforce weapons. You can see why to me, at least, the idea of a perfect shield had no real significance.

I will admit that I had a lot of talks with Cap in the months after the strategic defense speech, and he asked me several times if I thought we could develop a perfect system. My answer was that any scientist who undertakes any development effort seeks to
do the finest possible job. I see no fundamental reason why we could not have a system someday that is effectively perfect. But remember, a counterforce denial system provides a solution to a problem that has worried Presidents for twenty years, a problem whose solution they have sought for the past ten years.

Reagan’s leadership in this area reflects another dimension of the President’s understanding of the problems of deterrence. To us the difference between SALT and START--the reason for having SALT and START--was to put right out on the table that what we want is for the Soviets to give up their SS-18’s. We have gotten involved, especially in SALT, in looking at the entire nuclear force structure far more from a Mutual Assured Destruction view than from a recognition of the significance of counterforce weapons. We felt that the difference between START and SALT was that we were making clear that our goal was to restore the counterforce balance. Although one may have concluded from reading the newspapers that the Soviets were moving more and more in the direction the U.S. had requested for START, they were not. At no time did they ever propose removing any SS-18’s. It was the family of 17’s, 18’s, and 19’s that represented their counterforce arsenal. So, you can tell that the President saw and realized deeply the importance of counterforce weapons.

What else can I tell you about?

B: As I hoped, I believe you have pretty well exhausted the topics I wished to discuss. You have mentioned the Bishop’s letter.

K: By the way, Bill Wilson was appointed the President’s
first emissary and eventually ambassador to the Vatican. He is a very deeply committed Catholic. He had talked a lot to me about Joseph Bernard who I believe is a Cardinal now. He was really the author of the bishop's letter. He wanted to get me and Bernard together. Bill went to extensive efforts to get the bishops to moderate their letter. I use the word moderate correctly. Remember, Bill believes strongly in the Catholic Church and the way it is structured and all of that. He wasn't concerned about the bishops looking at it from a different perspective than that of the President. What he was so concerned about was that the letter is so rabid that he did not think it reflected the main-line thinking of the Catholic Church in the United States. So, he wanted me to talk to them about the sense of hope that SDI could recapture.

The cynical idea that the SDI emerged as a counter to the Nuclear Freeze Movement or as a response to the bishop's letter—find me a case where Ronald Reagan ever responded with a sledge hammer when somebody offered him a nut. This is nonsense. The President has an extremely good signal to noise processor that can tell the important issues from the unimportant ones.

By the way, let me introduce another subject just to show you a little about the way government works. Remember, the 1984 election represented a critical deadline in the Reagan administration—there were a lot of things we wanted to get done. I don't think the President really cared that much about staying in Washington another four years, so there really was a lot to get done.
Shortly after the March 1983 speech, Jim Baker, the chief of staff, gave out orders and sent out letters over a period of time in which he effectively declared that no one was to speak on the subject of SDI. What was said was that all speeches on SDI had to be cleared through his office. Well, I was in an enigmatic position, for the President had asked me in Baker’s presence to make explaining the SDI case my number one priority. So, I gave hundreds of speeches on SDI, and up until the election I served as the prime spokesman for SDI—about a year and a half. There were only two people who ever spoke on SDI; they were Cap and myself.

I mention this because I want you to realize the President’s resolve in this matter. When I read in Ollie North’s testimony about all the things that were done to try and shut him up—they tried the same things with me. Denying me privileges. Ed Meese, however, was my protector; and since he was the closest person in the White House to the President, these efforts to silence me did not make any difference.

I’m not picking on Jim Baker; he was a first class chief of staff. I’m just saying that when the President proposes change the entire system resists it. And it isn’t just the opponents—DOD opposed it up, down, and sideways; the President’s own staff attempted to moderate the implications of his speech. It wasn’t until the Soviets came back to the arms control table that people really began to see that there was a political benefit to the idea of strategic defense.

One of the smartest people in the White House was Dick Garman
who was the deputy chief of staff. Believe me, he was a man of unlimited power because he controlled all the paper that went to the President. Remember, the papers were correct; there were two factions in the White House—the Meese faction and the Baker faction. Garman’s role of controlling the paper flow to the President was absolutely critical and he was violently opposed to SDI.

So, there was a lot of in-house battling over SDI. It was a messy year and a half.

Have you been in SDIO?

B: I’m in SDIO now. I am actually assigned to the Air Force Office of History and am detailed to SDIO.

K: Can I suggest someone that you should contact. The most under-appreciated person here is Lt Col Mike Havey.

B: Where is he currently assigned?

K: He is down at Eglin Air Force Base. He is an Air Force officer. Who took Colin Powell’s place—he was Cap Weinberger’s assistant. He has now gone over to NSC.

The gentleman who took Powell’s place is a two-star general who was down at Eglin and before then, he ran the MX office. Havey worked for him, and I knew Havey very, very well when I was working dense pack—we became very close. Havey is quite possibly the smartest guy I have had on my staff here or at Los Alamos. He is absolutely brilliant.

Havey lived with me for three years. Everything I did on SDI, he was with me; Havey’s brains were more than half of the combination. He dealt with everyone. I never took my staff to
things like National Security Council meetings, but Havey was in a NSC meeting with the President in the fall of 1983, six months after the speech, in which the issue of SDI was for the first time formally raised. At this meeting, the President went around the table and said I’d like to hear everybody’s views—what are the implications of SDI and where is the SDI program at this point six months after my speech.

George Shultz said: well, I believe we should go very slowly, not disturb our allies, and all of this stuff. The President, in his marvelous fashion, just leaned back and said: Gentlemen, this reminds me of the optimist and the pessimist. I try to consider both sides. If I am a pessimist, and we don’t go ahead and develop SDI, you can be sure, as our intelligence estimates show us, the Soviets will. Furthermore, you can bet they won’t offer to negotiate—they’ll blackmail us to our knees. If you are an optimist, if there is any way you can give the American citizens hope that we can develop a ballistic missile defense of some significance, then we should pursue it. That happens to be a very gracious man’s way of saying thank you George, but here is the way we go. It was marvelous.

Havey was there with me. He was with me all the time. Cap and I are very good friends and Havey went over with me to see him many times. Havey saw the evolution of the strategy. If you had asked somebody on March 25th what SDIO was, will be, how it will influence arms control—I’m going to tell you, Havey added more flesh to that debate than any other man in this town. In my opinion, in spite of the fact that colonels are lower than

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Presidents, I think it would be a mistake from a historian’s perspective not to talk with Havey. Abe will tell you the same thing. Abe used to come and see me once a week, and Havey was almost always with him. I believe that Abe would tell you that Havey was one of the sharpest people who ever worked on SDI.

B: Did you know Lt Col Pete Worden?

K: Sure! He spent a lot of time in my old office. He is an astro-physicist and a very smart guy. He also was one of Abe’s assistants in the very beginning. He was probably the most excited member of the Air Force when this first happened. Pete is very, very bright--more of a technical person than a soldier in a lot of ways. Havey, on the other hand, is a world class strategist. He is a well-known expert on the American Civil War and its implications for the evolution of military affairs, for example. There are not too many people that respect as much as Mike Havey. I am not making a value judgment; I’m trying to tell you that the information that Havey has will contribute to an accurate history; and he also has absolutely no concept of self-aggrandizement. He saw things that colonels don’t normally see.

B: That’s probably why he is only a lieutenant colonel now.

K: You know why he isn’t a colonel? Because his paper work got hung up. His boss had to have the signature of his boss’s boss on it. You know--your fitness report has to have the signature of your supervisor and your supervisor’s boss on it--well his supervisor’s boss was the President of the United States. And it was deemed by I think Larry Welch at the time that this wasn’t an appropriate thing to do.
By the way. We consulted with lawyers, the White Counsel, on this matter. The Counsel concluded that it wasn't proper for the Commander-in-Chief to interfere that directly with the military process. That would have been order.

The bureaucrats will get us yet.

B: I think they have already, and we just don't know it yet.

K: A lot of people who are students of SDI will rank Havey high--one of the most important thinkers in this matter.

B: That is interesting. You are the first I have heard mention this man. I believe I have heard every other name you mentioned. Gil Rye--

K: They were small players. Havey was a major player. By the way, he wasn't involved in writing the speech because he was still in the MX office.

B: But he was involved in the general strategic activities of this time?

K: Absolutely! Absolutely! And helped shape the program. Just ask Abe if he knows Mike Havey.

(Pause)

B: I can't think of any more questions. Do you have any other comments.

K: No. If you read Zbigniew Brzezinski's article Sunday in the Washington Post, you see that we are beginning to get a historical picture of the role of SDI. We wouldn't have any arms control right now, we wouldn't have a situation in which for the first time we see at least a stemming of the erosion of the nuclear balance, without SDI. I have zero faith in arms control;
I wouldn't trust a Soviet as far as I could throw him—any Russian—in light of the teachings of the Soviet Union. Look what has happened.

Before SDI, we had a Mexican standoff. The Soviets were exploiting up, down, and sideways splits in the NATO alliance. Look what happened. Maggie Thatcher made skeptical, cynical comments about SDI early on; look now—Maggie Thatcher is as committed as Ronald Reagan to SDI. All of Europe sees SDI as critical and important, and they all see it as a catalyst to arms control. They all see it as having pushed the Soviets to the arms control table. If SDI engages first-strike ICBM's, i.e., counterforce weapons, then low and behold, it may conceivably have led to a treaty this fall which removes the European equivalent. When you think about it for a minute, you see that SS-20's are designed for decapitation of European command and control systems. If they were to attack our MINUTEMAN silos, you can bet your bottom dollar key nodes in Europe would also be knocked out.

We wouldn't have any of this progress without SDI. Instead, we'd still be struggling with the MX battle. In fact, one of my and Havey's arguments from the very beginning was that SDI would be one of the first things in decades that drove conventional modernization. Because you realize that once you stabilize the counter-force imbalance, it follows that the nuclear threshold is elevated. If the threshold is raised, you must modernize your conventional forces to deal with the added incentive for conventional warfare.

Look what is happening now. It is inevitable. Ten years
from now, ten years of work, we will see an improvement in the conventional balance in Europe--this is part of increasing overall stability. And this would not have happened without SDI in my opinion. Or if it had happened, the change would have been a lot less orderly. We changed the nature of the arms control debate. The Soviets are no longer on the offensive in the propaganda war. The alliance, in spite of some difficulties, has probably never been any stronger than right now. It is still not too tightly held together, but it is probably more unified than ever.

The greatest criticism of SDI in the world is probably in the leftist elements of the American press and the American intellectual establishment. These have been the amplifier for Soviet propaganda more than Pravda has. Pardon my polarization, but that's the truth.