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Cost-Effective Rearmament
James W. Stansberry

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Cost-Effective Rearmament

James W. Stansberry

General Stansberry assumed command of the Air Force's Electronic Systems Division in 1981, the same year as his promotion to lieutenant general. Recently retired from the Air Force, his military decorations and awards include the Distinguished Service Medal, the Legion of Merit with one oak leaf cluster, the Air Force Commendation Medal, and the Army Commendation Medal. His military career spanned over thirty years during which he worked in such diverse fields as air science, nuclear safety, atomic energy, and defense procurement. His past appointments include the post of Deputy Assistant to the Secretary of Defense (Atomic Energy), Deputy Director of Procurement Policy for the Air Staff at the Pentagon, and Deputy Chief of Staff for Contracting and Manufacturing, Air Force Systems Command at Andrews Air Force Base. His efforts to improve the Defense acquisition process resulted in major changes in Department of Defense profit policy.

About an hour after I was notified by my predecessor, Tom Marsh, that I was to be the Commander of ESD, I received a phone call informing me that I had to make a courtesy call on the Secretary of Defense. Now that scared me. Secretary of Defense! What would I say to the Secretary of Defense. Suppose he asked me a hard question like, "What is Air Force Policy on such and such?" So I went to see General Ousue who was in charge of all Air Force personnel matters and said, "Sir, I'm supposed to go up to see the Secretary of Defense in 20 minutes and they asked me to see you first." I figured he was going to say, "Yeah, Jim, sit down. Now these are the points we want you to emphasize." Instead, he said, "Jim, sit down. You're the first one we're sending up, so come back and tell us what he's like." I thought, "Oh God." "Well, this is just a courtesy call isn't it?" I asked. The General said, "No, some guys flunk." Perhaps you can understand the feeling that came over me when, after spending 32 years getting ready to be a commander, I had cause to wonder if I'd still have the opportunity in five minutes. But as so often happens, there was nothing to fear. The Secretary put me at ease and said, "Now, to begin with, please just consider this a social call." Then he said, "What do you want to do at ESD?" And I replied, "Sir, in the speech you gave last night, you said you want to rearm America. I want to help you."

I said that because I meant it. I've been in the military since World War II. And since 1945, we have won a war, we have tied a war, and we have lost a war. While that is obviously a highly oversimplified view, I certainly don't like the trend. It's very clear to me that there is only one military threat to the United States of any consequence, and that is the Soviet Union. Consider what they're doing and the money they've spent (and you can get into interminable arguments on whether they have outspent us by $400 billion or $300 billion over the last decade).

They have put together in peacetime a very, very impressive arsenal of military hardware. Any person ought to be concerned about that. You can't look inside the mind of the Soviet leadership, but if you let their actions speak for them, you have to be concerned about their motives, considering their actions in Berlin, Hungary, Poland, and Afghanistan and the mindset that caused them to shoot down an unarmed airliner. It gives me pause. And it makes me very content with the way I am spending my life. I think keeping the United States of America militarily strong is an extremely good thing for a person to do. The Soviets have spent approximately 13 percent of their annual Gross National Product on arms over the last several years, while the United States is trying to return to defense expenditures of 7 percent. So I think Weinberger was right that we should rearm. And the rearming of America is going reasonably well, by the way.

There are those who worry very much about whether or not we can afford to rearm. I think we can, but that's not to belittle the concerns of those who are worried about the other side of the equation. I tend to look at the question from the somewhat biased perspective of a person in the armed forces. When I was a lieutenant and a captain, half of our federal budget went into defense. Now it's between 25 percent and 30 percent. So, the defense share of the budget has gone down very significantly, while the social share has gone up very significantly. I don't happen to feel that this is a bad thing. This country has many needs. Our people who are unemployed have needs, and perhaps the need of a person who's fit and can't find a job is the most frustrating need of all. Our older people have needs. Our sick people have needs. Children without a good home environment have very pressing needs. And while I would be the last person to tell you that we shouldn't do what we ought to and what we're capable of doing in this nation for our young, our sick, our jobless, our homeless — I think the defense needs of the group as a *whole* are more important than the needs of individual segments. You might ask if I think we can afford everything. Frankly, I don't know. I'm not sure where the role of the government should begin and end in the area of social programs; undoubtedly all of them can be improved and made more efficient just as the defense program can. But I do know that a nation that spent $51 billion last year on liquor can probably afford to spend $100 billion on its air arm. A nation that spends $9 billion dollars going to the movies, a nation that spends more on recreation than the entire defense budget probably can afford to rearm, and to continue its participation in the alliance. In fact, we can't afford not to. Ultimately one must ask what it costs to lose a war.

If your only sources of information were news headlines and editorial pages, you would probably come to the conclusion that our military hardware doesn't work very well. If I may be allowed a strong opinion, that is pure nonsense. The F-15 and F-16 are the best airplanes this nation has ever produced. Back in World War II, if we could get one sortie a week out of the B-51 — which was acknowledged to be the best airplane of its type — we rejoiced; today we can get several sorties a day out of the F-15 and F-16. The F-15, by any measure, is twice as reliable as the F-4, which we're still flying and which was our mainstay during the 1960s.

Let's talk some about electronic gear and radios. About five years ago, we had in our fighter aircraft a radio that every 30 hours would fail. In some cases, it was an extremely hard job to repair, because you had to lift the seat out of an F-4 to get at the radio. Today we have a UHF radio called the ARC 164, whose mean time between failure is well in excess of 1000 hours. Think about that. The improvement in electronics during the last ten years is dramatic. I think that within another decade we'll probably be building electronic gear that never fails, with built-in diagnostics and built-in alternative circuits and paths. And what we do have to maintain will be on a programmed basis. Last year, American arms were sold to our allies at the rate of $18 billion. They were sold to friendly nations who had a choice of what to buy. On most occasions when an ally has had a choice, it has "bought American," which is a testimonial to the quality of American arms.

Now if you read the news, every now and then you stumble across a story that contains a germ of truth — although generally I consider that an accident — and you frequently read about systems having great trouble in testing. But that is the nature of testing, and testing is a very important part of development. For example, we built a new radar called the Seek Igloo and we're installing 12 of them in Alaska, where they are replacing old tube type technology with solid state. We took Seek Igloo into operational test and the commander of the Alaskan Air Command called me, and told me we just can't keep it on

the air. And I thought, "Oh my God, big trouble!" And that's because I was new to ESD. The user responsible for testing told us, "We only have 235 "squawks" on it and it's already been up for a month." That's why we have test programs, to iron out these squawks. And today, if you speak to Bruce Brown who's running the Alaskan Air Command, he proudly points out the Seek Igloo radar to visitors. Mean time between failures is about 1500 hours now.

Student: From what you've said can I conclude that in terms of life cycle costs, maintenance costs are trending down?

Stansberry: Absolutely. In fact, where we have failed, in terms of maintenance, has to do with our not buying adequate spares. When the defense budget wasn't quite as rosy as it is now, we bought airplanes and took our chances on spares. The reasoning was, "Let's get the airplanes while we have a chance. We'll buy spares for them later." I think it was a deliberate strategy: once we've got airplanes, Congress is certainly going to let us buy spares. We did go through a period where we were very "underspared" on some of these aircraft but the situation has improved.

ESD has about 10,000 people worldwide, including MITRE. The MITRE Corporation is our general system engineer and we're very close. It is a team approach. We spent about $4 billion dollars last year and we will probably spend about $5 billion this coming year on new development electronics. We don't buy systems off the shelf, we create new systems: the AWACS (Airborne Warning and Control Systems), the E-4 (Airborne Command Post), new radars, and even an occasional boat — Cobra Judy, a big phased array radar on an old Navy ship, today is sitting off the coast of Russia monitoring their missile activity.

One of the interesting things about ESD is that I've never in all my career seen so many lieutenants. We went through a period when a lot of our captains and majors got out and we had to replace them. Well, you don't just replace a captain with a captain, you have to grow one. And so we got an influx of about 400 lieutenants. All of them were fresh out of college, well educated, totally inexperienced, and absolutely fearless. Absolutely fearless. They're always doing something, and sometimes at night when I'm at home, I wonder what they're doing! For experience, we turn to MITRE. They're the mid- to high-level, qualified engineers of ESD.

Now with all this good news, let me tell you what I think the bad news is. American arms are the best in the world, but they cost too much. They truly do cost too much. And that's a problem of very large dimensions. Why do they cost so much? American arms are built, for the most part, by companies that don't have to compete the same way a commercial company has to. They have little motivation to modernize. In fact, our defense procurement system has in it strong disincentives toward substantial modernization. For example, in the Nixon administration, the Air Force program was to replace our 30-year-old B-52 bombers. Everyone reasoned, "We've got airplanes flying that are older than their pilots. Sooner or later, they're going to wear out and kill a bunch of people. We can't depend on them, they're too expensive to operate and maintain. Let's go build a B-1." Congress says, "Good idea," and you issue requests for proposals, and Rockwell wins. Somebody at Rockwell determines that to build a B-1 bomber and do it right, they have to modernize and build new facilities. Some corporate official calculates that they'll need $100 million in new capital goods to do an efficient job. And so they proceed with this large capital spending program. Nixon says build the B-1. And then Mr. Carter comes in and cancels the B-1. Now this corporate official is sitting there wondering how to explain to his boss what he is going to do with a $100 million worth of new machinery. And then the next administration comes along and says, "We're going to build a B-1." Now this executive has been burned once and he's skeptical. His response is, "OK, we'll build a B-1 for you. Instead of machinery, though, I think I'll hire a lot of people and hand-build a B-1 because it's easier to lay them off than to get rid of capital equipment."

That's obviously an extreme example but it is pretty close to the truth. The lack of stability in the defense business makes it basically very high risk. If you're in the business and you capture a chunk of it, you have to worry a lot about any major investment in new equipment. It takes about three years to order and install a lot of modern machinery. Once you get it installed, we have accounting rules that say you can't amortize it in anything less than seven or eight years. And over on the commercial side, companies are turning things over in two or three years. This

is a disincentive to plant modernization and capital goods acquisition. Now if you don't invest, don't modernize, you remain notably unproductive. Maybe you're productive compared to the private sector of 15 years ago, but you are certainly not so productive as the private sector today. The answer is increased stability in defense spending.

I think it is scandalous that defense should be a partisan issue. If we get in trouble, nobody is going to check as to whether or not you're a Democrat or Republican before they shoot you. We're all in it together. Why should defense enter the area of partisan politics? Now some say, "Well, really it doesn't become a partisan issue, except when you get down to details." Details such as where we should base an MX missile. Should we put it on a track? Should we hide it in the ground? And then you get into the very peculiar phenomenon of experienced, even brilliant, legislators voting on something they know nothing about. And splitting that vote along party lines, whether it's right or wrong. You certainly might vote on what level of spending your country can afford in the defense area and how it will be financed. But why would you vote on something like MX-basing? We have things going on today in this annual Congressional look at our programs that boggle the mind. I believe the Secretary of the Navy just commented that Congress, in looking at more than 300 line items submitted as the Navy's RDT&E budget, changed more than 200. Are our elected representatives that bright in science and engineering? Obviously not.

Student: Are you implying that there's a game going on here with the whole defense appropriations business? I assume that in changing 200 line items, Congress is taking money out because they're assuming extra money has been included.

Stansberry: They also are putting money in. They're changing monies around.

Student: And more important, they are reacting from a more balanced perspective. They're looking at the budget from not just a military perspective, but taking into account a lot of other pressures, economic pressures, social pressures, political pressures. Not all of which are valid.

Stansberry: That doesn't bother me at all. That's their job.

Student: The point is, their perspective on the budget is very different from yours or the Pentagon's.

Stansberry: Sure.

Student: Yet, I understand you as implying that it's wrong.

Stansberry: Yes, not only wrong, but extremely costly. Let me give you an example. We set out to build 729 F-15s, 144 a year. That production rate has gone up and down unbelievably. We're going to build maybe 42 this year. If someone was looking for the most inefficient way possible to develop and acquire a new fighter plane, it would be pretty close to the way we do it. I guess what I'm saying is — and it probably can't work on everything — that there ought to be some programs which are well-supported, that everybody has to support: the Office of the Secretary of Defense, the service, the tax payers. And we say we're going to do those right. No matter what else we screw up, we're going to do these major programs right, by taking a multi-year funding approach to some big expensive projects. The B-1B is now being built on a multi-year basis at savings of several hundreds of millions of dollars.

Of all the airplane programs that have come along in the last seven or eight years and that have gone through this cycle, only one kept to its original schedule, and that was the C-141 "stretch"; it came in under budget and ahead of schedule, and it performed very well. So you might say to yourself, "Why don't we do that on more of our programs?" Well, the Secretary of Defense tried to last year. He sent to Congress a list of programs for which he had good support. These were stable programs, and we knew the unit cost because we had completed initial testing and production. Also, the service wasn't going to change its mind (believe me the services change their minds every year about as badly as Congress does). And there were very substantial savings to be had. About half of the projects Mr. Weinberger submitted were turned down, and he estimates these are going to cost you and me an additional $1.4 billion because we're probably going to end up buying them eventually. Why do we do that kind of dumb thing? I'm not saying Congress is the only one that does it; the military does it too. The answer is probably that there's too much on the military's plate. We have too many programs.

Every year I have to submit my budget and I'm asked for my recommendation of what programs should be funded and at what level. And typically about twice as much needs to be done as there is money to do it. With this system, there's a great temptation, almost an irresistible temptation, to do everything poorly. For example, if I only got $3 billion, I'll spread it out over $6 billion worth of work and keep everything going because, sooner or later I'll get full funding. It's hard to avoid the temptation to do just that.

Student: Are there things that could be done to facilitate program termination?

Stansberry: Well, there are some things you can do. And some of them are being done. One of the reasons I preach about this subject is to support the things that are being done. One of the things you can do is not initiate programs unless you're sure you've got the budget to support it and do it right. Let me give you an example, something I want very much — to buy more AWACS. I maintained that we ought to buy these additional AWACS. Forget those F-16s, we can do without some of them. General Creech won't mind. It turned out that General Creech minded a lot. And you know, the Air Force zeroed out the AWACS; we're not going to buy them. I was proud of the leadership even though it was something I advocated.

Another thing you can do, which relates to multi-year propositions, is select some projects and do them right, come hell or high water. Once we got started on the B-1 bomber, for example, Congress and OSD and the Air Force got together and said, "No matter what, we are going to plan the acquisition on a multi-year basis, and we are not going to spend one cent more than $20.5 billion." We got the Strategic Air Command to agree, we got Congress to agree and we got the Secretary of Defense to agree and that's probably the best thing we ever did for the health of the B-1 program. Now, as you might expect, people come running up and say wait a minute, you forgot the horn or the wipers or something. Sorry about that, chief. Ain't gonna be no horn, ain't gonna be no wipers unless you're willing to give up something else. Now obviously there's some lack of discipline in that process, too, because it says we have some freedom to take things out if they won't fit within the budget, but I think that is healthy. That $20.5 billion figure for the B-1 is going to stand. So I think part of the answer is stability of our programs. Although not everyone would agree with my number, that if we were to do things efficiently and well and at reasonable production rates, we would knock 20 to 30 percent off the price of most of the products we field. I actually think it would be about 40 percent, but I publicly say 20 to 30 percent. You know, we're the guys who built one F-111 a month. Twelve a year. Why? Because they were issued to us by people who had a vested interest in seeing to it that the Air Force got F-111s. Let me tell you something else about the acquisition business because I could just preach multiyear all day long. I was once asked, what are the three most important things you would do to address problems in the development and acquisition process. I answered, "Multiyear, multiyear, multiyear." It's the single most important thing we can do and multiyear budgets make more sense even than multiyear contracts.

Three or four years ago there was an OMB circular floating around, A109, and it said that the only way we're ever going to develop anything is that it has to have an established need. Which meant 5,000 people had to coordinate the proposal to prove the need. So you would prove need over and over and over, and the fighting forces in fact had the job of advocating and expressing the need and it got staffed and scrubbed and...but then you sit back and say, "Hey, unless I'm wrong, that isn't the way the airplane was invented. We didn't have a cavalry man go to the Pentagon and say, 'I need a horse that flies.'" Right? Technology drove it. The Wright boys, out in Dayton, Ohio, invented an airplane, and then we said, "Hey there's technology that might serve a useful military purpose." It's certainly not what caused the nuclear fission bomb to come along. The fighting forces in the Pacific didn't say, "We need a great big bomb."

Student: You have to prove a need to get a system to come on line, but the military has a huge R&D budget; you don't have to prove a need to play with lasers. So I think that you're stretching your point.

Stansberry: I'm not stretching it at all.

Student: No, I mean what about all the R&D money? There are a lot of scientists that are playing with things that may not come on line for 20 years.

Stansberry: Let me address the laboratories a moment. The laboratory budget, as I recall, has sort of stayed flat at about $10 billion a year for the last several years. And in fact that's in old, constant-year dollars. So there's been some decline. The laboratories have a combination of institutional funding. That is, you need a certain amount of funding just to keep the door open. The project funding, for the most part, requires an advocate in order to get the approval up the line to the Office of the Secretary of Defense, and to press on with it. So what you say is right for that small segment of the total budget that is R&D oriented. Now, if it's R&D associated with a system, then you have to have that great big process of a need being stated by TAC and/or SAC or somebody. The RDT&E on the B-1 has to go through that, the RDT&E on any major new system. Laboratory work, no. And we have a laboratory called the Air Force Office of Scientific Research that simply funds university work. It does basic research. But generally that's a small part of the pie.

Student: I'm interested in some of the C^3 things you're doing that go beyond the Air Force. Things like EMP protection of NEACP. Things that would not be in the Air Force budget, but would be for the benefit of the system as a whole. Who advocates those? Now I know that there are organizations within OSD, within DDR&E, in the U.S. Army, which are doing that, but most of what you said was very Air Force oriented.

Stansberry: Yes. Most of our work is.

Student: And so the question is, how do you plug into those greater needs?

Stansberry: Okay. We plug in in several ways. And by the way, in terms of joint programs, which we're sort of addressing, I once was quoted accurately as saying, "compared to herpes, joint programs are a lot of fun." They're very, very difficult to execute and administer. And I won't go into too much detail on that but let me tell you how it works. It works two or three ways. Number one, one service invents something that another service looks at and says, "Hey, that'll fill the bill." That's what happened with the F-4. The Navy developed the F-4 and the Air Force went and bought it. That's what happened with a little slick radio I'll tell you something about. It's called Have Quick. The Soviets have a jammer that they used in the desert war, and it got to the point where Israeli pilots couldn't talk to their own tower because the Soviet jammers were doing such a good job. By the way, the designation of the jammer — I think this is hilarious — is classified. For some reason, we figured out and don't want the Soviets to know the designation of their own equipment. How about that for bureaucracy? Anyway, what happpens...the guys in the jammer van listen. They find out what frequency the pilots are talking on, they tune their jammer to that frequency and send up a lot of energy, and now the pilots can't talk. So, we invented a frequency-hopping radio. It hops all over a certain band. And now they can't jam it. That was invented by the Air Force, purchased by the Army, purchased by the Navy, and the Marine Corps will also use it. Another way it works goes like this. We had all three services spending money on a radar for ground targets. A moving-target indicator. The Army had a program that'd put a little radar up and it would peek across the edge of the battlefield and say, "Aha? Ten klicks away is a tank, somebody shoot it!" I don't know what the Navy had, but they had something. The Air Force had a program called Pave Mover, where we had a big radar in a big airplane that could look way across maybe a couple of hundred miles deep, across the forward edge of the battle area, and spot not only movers, you know, heavy metal, tanks, but also stationary targets through the use of synthetic aperture techniques. OSD said, "Hold it guys, you both are doing essentially the same thing. You're trying to put a radar in an airplane and look across the battlefield. There should be one program." And they dictated it. It's my program now, it's called Joint STARS. And given 20 minutes, I might remember what STARS stands for. We've had a lot of trouble getting started on the program because rarely do you find that the two services have identical needs. You know, the Army guys would run around and say, "Hey! We just want a little radar, a nice little airplane, go about ten klicks deep, and you guys are going to run off and invent a great big radar for a great big airplane and we won't be able to afford it." Because the money still comes out of the service budgets, see? OSD doesn't print the money; anything they parcel out they first take out of service budgets. It's off, it's launched, it's running. We'll probably release the request for proposals on that this week. That's one way — the second classic way — a joint program comes out. Yes?

McLaughlin: Isn't that indicative, though, of greater problems, not just the fact that the Army and the Air Force have a different concept in mind. Each one has a concept that suits its way of fighting wars. And if the Army knows there are targets 200 miles back, it doesn't help. Their helicopters, their artillery can't do that. The Air Force, on the other hand, TAC, has a noticeable lack of interest in things only ten klicks deep because somehow they're not very amenable to...

Stansberry: Yes, we want to get them in packing crates.

McLaughlin: Heavy delivery! Isn't that as much of a problem as the difference in the conception of the weapons?

Stansberry: Well, it's the systems. It's not that the requirements are stated differently, it's that they're honest-to-God different requirements. They say, "How do I put this together? Or should it be two programs!" Now in this case that I mentioned, Joint STARS, we said, "Well, does it make sense to try to develop one radar that can both look short and look deep? And the answer, after a lot of study, came out yes. It really does.

Student: I wasn't exactly asking about joint projects that both services would use. But rather where the end user is not the service at all, where it's a system that transcends any one service's need.

Oettinger: He's talking about national programs. The sort of thing that your colleague, Tom Powers, had to worry about.

Stansberry: High fliers and things like that?

Oettinger: And, anything else that might serve the CINC or serve the President and that has to be fought for tooth and nail out of service budgets. I think it's an interesting cultural phenomenon. Norm Waks says the CINC's the user and he can't express his need, or when he does, he gets tied up in knots. You talk to one of those guys and he's going to say, "Gee, the services are doing their thing, the development guys are feeding their egos, and nobody ever gives us anything with which we can fight a war." And the President sort of sits there and he says, "Gee, I'm President of this whole shooting match but I don't really have a budget." You know it's some major, no offense at all Major Rowell, it's some major down there who's actually riding around in control of the budget.

Stansberry: Well the majors still kind of run things.

Oettinger: You know, he puts the paper under the General's nose and goes, "Sign it," and then the major's got all the power and the President's sitting up there helpless. How do you get some balance into this other than name-calling? Dr. Waks?

Waks: I'm flabbergasted that you didn't understand my point. I said that there is an alternative problem involved here, and this is, the operating commands tend to look at short-term immediate operating needs. It isn't that they do a bad job at that, they do a superb job at their immediate needs. They tend not to describe those needs in long-range terms, because the long-range view might eliminate their mission or alter their mission in a way that they don't like: decreases its importance, move assets to some other command, or something like that. They tend not to describe requirements in strategic terms.

Stansberry: Well, that's why you have an Air Staff, too. Because not everybody's requirements get approved. A lot more comes in than gets approved. And to answer your question on national programs, let's take a national program of some importance, very high-speed integrated circuits and the money that's being spent on that. Lots of different people in the services and industry have a piece of that and all of that is being orchestrated by Dick DeLauer, Under Secretary of Defense. We have a piece of it in one of our laboratories.

Oettinger: Let me go back to something you said before, about Congress. If I hear you correctly, your fundamental objection is that they mess around with details rather than sticking to giving instructions and setting policy and so on. When someone hears them saying it, they say, "I try to set policy but unless I get into the execution, execution always ends up being with the services." So can you reconcile that?

Stansberry: I think I can, a little bit. First off, make no mistake, the armed forces are extremely powerful, each in its own right. I think that the

Department of the Navy is probably the most powerful in the sense that they tend to ignore directions more. You know, they're still in the "I am in charge" mode. And, by God, I admire a lot of what they do. The services are extremely powerful; when new things start, the money ultimately comes out of the services' total obligational authority. And with respect to execution of the program, the point you make, I must say that I don't excuse service staffs either. There's enough meddling that goes on — I like to say meddling, and if I were up in Washington as I was for 13 years, I'd say I really helped those guys — that one of the amazing things is that we do as well as we do. It's kind of interesting to me — I'll give you a personal observation. We have 4,000 provisions of law; 3,000 pages of regulations governing how we do business. We have all kinds of IGs and auditors and teams, and reporters and everybody else, and we're living in a fishbowl, and you say how do you get things done? One of the reasons, one of the ways you get things done is that the same gang that can't settle on what you should do in Washington or anywhere else, also can't tell you "no" when you go and do something. So as a commander you have to exercise the authority you know is yours by law, and go out and do it. If it turns out wrong it doesn't matter how many rules you followed, you've screwed up. If it turns out right, nobody's going to tell you you did the wrong thing. So sometimes we protest too much about the — for want of a better term — help and assistance.

Student: I'd like to follow up on that answer to the question of why the services go off and do what they want to do. The answer seems simple to me. It's the whole structure of the federal budget, the way money is allocated, who is responsible in the end for the execution of a project. If it's someone down in the bowels of an organization, a project manager somewhere, who is responsible for the way money is spent on a particular project, you can damn well bet that the decisions made on that project are going to be the project manager's decisions.

Now a good example is the logistics question, the fact that decisions are made in favor of airplanes instead of logistics support. Well, a project manager who is in a job for two or three years and has to make a decision how to spend a million dollars, whether he should field a weapons system or whether he should buy logistic support that is going to start paying off ten years from now, that guy would be stupid to make the logistics support decision. He would be a fool, because his performance is going to be measured on those three years he's in that job, not what's going to happen ten years from now.

Stansberry: That's been a difficult problem, by the way. We've ended up putting logisticians into each of our program offices and calling all of our program directors in and saying, by God, you are responsible for logistics. We're going to give you the money for initial spares and you get to program it and woe be unto the guy who fields something that is not supportable. And that's been a very real problem, exactly as he said. Let me mention one other point and then go to questions altogether. I got carried away a little bit with multiyear. I feel a little strongly about that. We have an institutional problem that goes like this. If you're a contractor building something for us, you have to prove in detail what your estimated costs will be. You know, you have to lay out materials, you have to lay out how many engineering hours, you have to lay out your union agreements and everything, and then we all negotiate, negotiate, negotiate, and finally get an estimated cost, and then we go build it. Now because we buy every year, for the most part, we come back next year, and say, OK, let's go through it again. Now every year that we do this, your profit is generally a percentage of your estimated cost. If you're a bright, innovative, creative producer, who figures out ways to drive his costs down next year, you also drive your profit potential down, and that's a real disincentive to investment. Now every corporation makes an investment, and most of the corporations we deal with, particularly in the electronics business, have large commercial sectors too. When you go to the board of directors or the chairman who handles the corporate investment account and say, look, here's my shopping list of things I'd like to invest in — now those guys usually have much more investment opportunity than they have money to spend — and you come down to the defense line, he says why should I invest in that defense line. The answer is, well, if you want to keep your profit potential high you probably shouldn't. Put your money on the commercial line where you'll get a better return on your assets. Now how do you turn that around? Well we tried one thing that is now catching on — it's absolutely revolutionary. Very simple in concept but revolutionary. We said the guys who drive prices down get more

profit, not less, and we cut a deal with Westinghouse first, because Tom Murrin is something of a leader in the field of productivity, and he heads up their technology and energy group — he's the big man on that whole area of productivity. We cut a deal with him and said, look, the Army, Navy, and the Air Force have 90 percent of the business in the Westinghouse defense division. And we know there are opportunities for increasing productivity there. For example, you have warehouses full of people sitting there wiring out long cable harnesses, and the quality and the reliability aren't as good as they should be, and it's also touch labor. We know darn well that a machine should be able to do that, but a machine would take some investment. So we agreed to a deal that goes like this. You make the investment and you negotiate on a prospective basis a lower price than we're paying now, and we'll split the difference. That is, you get some of the savings and we get some of the savings. We get a lower price, you get more profit, and you have a more modern factory.

Student: Could you say that again another way?

Stansberry: Sure. First you identify an opportunity where everybody agrees that if you modernize that, you save a lot of dough, right? But the government's not going to modernize, because that's private sector. And the company's not going to modernize, because that drives its profit potential down. OK? So you say, hey Tom, go modernize that and give us a lower price right up front. Then it's up to you to make the cost go down, and we will give you a better profit rating. Drive the cost down, you get more profit, not less. Now that sounds easy, sounds sensible. Everybody's a winner. More modern facilities, more productivity, lower price, etc., etc. It sounds easy. It took several pages of contractual, technical, legal language to set forth this deal, and it's not easy. The reason is that little sector we're going to modernize is feeding 20 programs. You know, how do they structure this thing? When I've got to deal with 20 programs in the Army, Navy, and Air Force, I've got to get 20 program directors to agree to this. How can I possibly do that? Well, we picked three of the big products, the ALQ-131, which is a jamming pod that goes on airplanes, and we picked the radar that goes on top of the AWACS, and we picked the F-16 radar. We said we'll pay you incentives based on the price of those three products. So now we only had to deal with three guys, and as a result, on products where we know what we paid for them, we're getting a substantially lower price on every single product that's coming here. Westinghouse's profit will go up on those products. And it's a little scary in a way, because the commercial rate of return on this first deal that we cooked up turned out to be 23 percent after taxes. Accountants come by and say, "Boy, you've been had — General, you dummy." And I say, "Yeah, now go look at the price." What's the magnitude of these savings we're talking about? With Westinghouse alone, over the next ten years, considering the programs that they already have, and are likely to get, and just making a conservative judgment we will save about a billion dollars during the next decade that otherwise could not be saved. And I say that's revolutionary.

Now let me wrap up my thoughts quickly. We need a strong defense and we can afford it. The products we are building are good. We have a lot of severe institutional problems and we've talked about several of them here. I believe we're giving our best shot at addressing those. Now, more questions.

Student: Sir, my question relates to the transfer of military-related technology to the Soviet Union. I think there's a very extensive list of the Soviets borrowing our technology —

Stansberry: Or stealing it.

Student: Aircraft design, microelectronics computers, ground equipment. They're getting this through legal and illegal means from our allies and through neutral countries like Sweden or whatever. I know this is a big concern of the Reagan administration as far as trying to get NATO countries to tighten up through the coordinating committee and I believe setting up a task force of multi-national organizations. Can you comment on this? Have we been successful? Are we going to be successful in stopping this flow of technology that's been going on for years that helps the Soviets and hurts the United States?

Stansberry: In my view, all we can do is take incremental and marginal steps. The only way we would make a substantial impact on the technology flow to the Warsaw Pact nations and the Soviet Union would be to close down our own communications in this country, and if we do that we've lost the whole

game. I feel so strongly about our open society. That's what we're defending. Our creativity, our ability to innovate, is based very strongly on the open communications we have with one another. And with our allies, by the way. That is not a one-way street. So I would view any strong steps to close down the flow of technology to our allies as backing up and hurting us before we were finished. Now, having said that, I think you have to judge each deal on its own merits. Back in 1969, the big issue was whether or not the IBM 360 should be made available to France. The decision was, yes, let's go ahead and do it. The Joint Committee on Atomic Energy came absolutely unglued at me, because I was the only one around. They sent the colonel over to take the heat. A lot of people said it was a big mistake that that technology would flow to the Pact. It did, but so what? We've replaced that technology so many times since. Certain technologies, perhaps such as high powered laser technology, I would be reluctant to let sift out very quickly. So I have to judge each deal on its own merits, but if you say, OK, guys, Fortress America, we go it alone, nothing goes — then nothing will go internally either, in my opinion. It's a very, very difficult question. We had to consider that issue during the Saudi AWACS program. We gave a lot of assurances to a lot of people that we would protect American technology when we put the AWACS in the hands of the Saudis and we have in fact modified the airplane, some of the very special features are not there, but it's very hard to take other than a middle-of-the-road position in my view. How about all the symposia? How about all the gatherings? How about even conclaves like this? Can we be candid with one another and exchange opinions, ideas, and facts, if we want to be absolutely certain that nothing goes the other way? In my opinion, any time I address an audience of more than 300 people I know damn well there are some Soviets in there. Because they attend everything. You know, they probably get paid by the word or the pound. At least if they listen to me long enough I confuse them by working both sides of the street.

Student: I'm also concerned about keeping our open and free society, but are we doing anything or can we do anything to keep them from stealing it like they've done.

Stansberry: Oh, you could always do better, no doubt about it. I spent a number of years working in the atomic energy business. With all of the controls, with all the cute clearances, with everything we did, you slow the other guy down some, and you stay ahead, which is really the name of the game, but you're still going to get your spies occasionally.

Oettinger: That's a very difficult point. Especially when made by somebody who is either an academic or in the R&D business, because one way of dismissing the argument is to say, well, that's exactly what one expects scientists and R&Ders and so on to say, because it provides an excuse. It happens to be an argument that I fervently believe in. As General Stansberry said earlier, you would have to turn this country into a Soviet-style fortress state, and then they've won.

Stansberry: Let me give you an example of just that because I think it's a real problem, and it's a problem I'm seized with. In our own intelligence community — and by that I mean not just the Air Force, but also Army, Navy, DIA, the guys who like to pretend nobody knows they're in Washington — I think we have gone so far in protecting the information that we limit its usefulness to the operational forces.

Student: What do you mean by that?

Stansberry: Let's say the intelligence guys have got a great sensor, and they collect all this data and say what do we do with it? Well, let's take it and put it in our own little vault, and nobody goes into the vault except the intelligence guy and he's got to have a badge and clearance and all that. And now we're going to massage the information and process it and display it in different ways to each other, and then someday we'll even go give it to a guy who has to fight on the ground, maybe, and tell him there's the enemy. We've worked very hard on gathering information, but we haven't worked very hard on the problem of making the information available to those who need it. That becomes a particularly difficult problem with respect to divulging the information to our allies. If you don't work that problem, here's what happens. Let's say the balloon goes up and there's going to be some kind of a ground war in

Europe, and now the intelligence guys quickly say, hey, it's time to go show the shooters what we've got. And the shooters say wait a minute, I never saw anything like that before. Who are you, anyway? Why should I believe this information? I'm a busy guy, there's a tank coming through. Now that is an institutional problem, one that we're at work on. It's a difficult problem, and it goes back to that protection of information syndrome.

Student: Is this the synthesis problem that Beal was alluding to?

Oettinger: Partly. It's the green door problem that we've mentioned in some of the past seminar proceedings. And it's the compartmentation problem that Admiral Inman mentions. The interesting thing is that the higher up you go in the professional ranks, the more agreement you find with what General Stansberry has said. Inman is quite eloquent on the notion that if you do your intelligence job properly, there's no reason you shouldn't make it available to the folks in whose name it's being gathered. It's kind of a middle level bureaucratic thing, the worry that if you give it away you've got no special reason for existing anymore...

Stansberry: And the fear I would have is that we manage to protect that source and that information totally from our friends, but our enemies may have had it for a long time.

Student: Let's portray the total picture. It is getting a lot better. In recent years, we've been sanitizing and decompartmenting information. It used to be not too many years back you had to have a clearance to have a clearance, and now, you know, overhead information, reconnaissance data, is being made available much more frequently at all levels. I agree with what you're saying, but it is getting considerably better.

Stansberry: There's a whole area of effort called black programs. Black programs are so highly classified that access to them is extremely tightly controlled. We have black programs where maybe only three people at ESD, myself included, even know about their existence. That bothers me because, number one, I'm the last one who can do anything useful about it. Somebody's got to do the work and I'm not going to do the work. Secondly, I forget those code words and some guy comes running in and says, I've got to talk to you about Pink Petticoat. What the hell's that? Third, I think that some programs are being compartmented because they go so much better, because we don't get all the "help" on the black projects — all the staffers and all the committees and all the inspectors and all the accountants. It bothers me that we start to protect things just to defeat our own burdensome system.

Student: You know, the problem is getting worse. I mean it is not just that there are twenty times more staffers now than there were, they are continuing to increase because the Secretary of Defense is continuing to use that tactic. The House Appropriations Committee last year got essentially a doubling in staff with these associates. That's a proliferation that is going to continue until they have one staffer for each person in the bureaucracy in the Pentagon and out in the country who's doing the stuff. When they can follow you around one on one, maybe it will stop.

Stansberry: Yes, you need an institutional change. You're right. General Creech gave a brilliant exposition of why he thought decentralization made more sense in certain areas than centralization. At the end I asked how we could turn it around, and he answered nobody knows for sure. This thing sort of has a life of its own. Just so that nobody gets the wrong impression, I know a lot of these staffers. They're extremely good people; they're bright as hell. They're working hard to become knowledgeable, and that's even worse, because they're not going to sit over there and do nothing. They're going to work on the problem, and by the time it gets down to me, funny things happen. I hope it doesn't take some kind of national upheaval to turn things around. This administration came in saying we're going to decentralize, right? I think there's more micromanagement going on now than there was four years ago; I see an awful lot more. Your comment reminded me of what Ronald Reagan is supposed to have said after visiting the Bureau of Indian Affairs. He saw this huge office building full of people, busy, industrious, except one guy, with his head in his arms who was sobbing and crying. And Reagan said what's the matter with you, and he said his Indian died. Let's hope it doesn't come to that.

Student: From the discussion earlier, I got the feeling that you don't think a national industrial policy, at least a formally stated national industrial policy, is necessary, primarily because of the bureaucracy that grew from that. And I guess that means you're a free market proponent. I think from a national security standpoint the free market argument assumes that industrial concerns have a vested interest in the national concerns of the United States. Now with the trend toward multinationals and the internationalization of business firms, how would you answer a critic who might say that for a lot of these industries their industry concerns are not consonant with the national interests. It's becoming more and more difficult for them to draw nationalistic lines because they're international businesses. Thus the argument or need for a national industrial policy to protect the national interest.

Stansberry: Well, it's an extremely good question, because I think we have a national industrial policy whether we like it or not, and it impinges on industry every day. Sometimes to the benefit of defense, sometimes to the detriment of defense. Many of our national policies have tended to dry up sources of minerals that are available in this country, for example. The policies may not necessarily be bad, because we want to protect wildlife, we want to protect some of our more or less virgin land and sometimes when we restrict the use for mining, for example, we naturally impinge on industry. We have antitrust legislation that is policy. Now, with respect to the international argument. The guys I know in business — and I know a lot of them that are in both defense and commercial — they worry about Japanese competition. My feeling from the viewpoint of their business is that they had better join them, as opposed to fighting them. Figure out licensing arrangements and we both can win. We are great at R&D; they're great at production. We can learn from each other. And having said that, I often think what am I doing here, helping them give away our edge, which is innovation, creativity, research and development, and we won't get back the productive capacity. But I guess on balance I think international economic cooperation will be a very powerful instrument for the peace and security of our citizens, so I would favor fewer restrictions on international cooperation, and also on national cooperation with each other. Do we need a national industrial policy? We probably need a change in the way we act, and if that takes policy, so be it, but please, let's not codify it and put it in law.

McLaughlin: I want to come back to something we discussed briefly at lunch, and that is the shifting balance of the muscle and nervous system. It seems to me that an awful lot of the present body of procurement law and regulations was designed for procuring tanks or trucks or planes. Do you see a difference in procuring a nervous system as opposed to procuring muscle? Does the system work as well, better, or worse?

Stansberry: Well, first off, most of your regulations pertain to off-the-shelf beans and bullets, and one of the problems we have is taking a regulation that was designed for buying things off-the-shelf and trying to apply it to the system. Secondly, I think buying electronics is a lot easier even though the systems and the laws are, as you say, sort of pointed towards airplanes and tanks. The reason is, you look at the firms we deal with, most of them have a very heavy commercial flavor and a very heavy commercial R&D program, whereas in the airplane business, the industry sort of followed the services for a while — we'd invent things and they'd put them to commercial use — the electronics business is sort of turned around. They're out there innovating and inventing and we're putting their products to military use.

Student: I'd like to focus a little bit more on that distinction between the organization that's purchasing lots of airplanes as opposed to an acquisition organization that's buying some one-of-a-kind things. And, other than the cost of the product, which you've mentioned, and the cost of the spares, what other kinds of problems are you getting in terms of feedback from your customers?

Stansberry: During operational test and evaluation, when we put the gear into the hands of the customer for the first time, I'd have to say that complaints are daily or hourly. "I turned it on, the system crashed. The software dumped. It doesn't work." Or, "It works in this mode but not in that one." When you get through that difficult period of operational test and evaluation and turn it over to your customers you get, and honestly this is the truth, you get rave

notices. You really do. I mentioned the Seek Igloo radar, I mentioned the ARC 164 radio and Cobra Judy. Your intelligence community is just thrilled to pieces with the information they're getting on Soviet missile shots. Best they ever had. Stays on station. Never goes down.

Student: So, are you able to meet the demand for the systems?

Stansberry: Absolutely. Absolutely. Maybe they aren't demanding enough. One of the things that worries you is that the system is institutionalized to the extent that you must be careful that you're not just making small, marginal, incremental changes. How about the change that will change warfare? How about the change that will absolutely nail down deterrence? Now, I applaud President Reagan's space defense initiative. A lot of guys tell me, "You're crazy, the leak rate will be so high even if you do achieve end-to-end space defense," or "The Russians will counter by building a lot more boosters." My experience would be that there ought to be a balance between defense and offense.

Student: I have a little problem. You're able to meet the demand for customers but somebody wants 12 more AWACS.

Stansberry: Yes. The product is fine. They'd like to have more.

Student: Okay, if there's no problem associated with efficiency or the productivity of the acquisition — is it simply a matter of funding?

Stansberry: It's a problem of affordability. Somebody in the Pentagon — at the appropriate level, right at the top — made a judgment that you can't afford to turn out 12 more AWACS this year. Period. A reasonable, mature judgment, whether you agree with it or not.

Student: Sir, just one last question. Going back briefly to your mention of the Japanese being weak in R&D, taking other ideas and adjusting them to their own needs. From what I can read they realize this now and know that to be able to keep the production base, they're going to have to get strong in R&D. They've taken on a large program, a ten-year program, to try to overtake us where we're strong, like in computers and artificial intelligence, and high-speed computers. Do you see the Japanese as a threat in that area — artificial intelligence — in the next few years?

Stansberry: No. I really don't. Let me tell you why, and by the way, I'm an admirer of the Japanese. I spent three years there, I think I mentioned to you, as Chief of Production in a Japanese aircraft factory and I've spent a lot of time since then talking with them. That nation, by virtue of geography, population, tradition, and everything else, is very tightly organized, very highly disciplined. Flying over Tokyo, in my chopper on my last visit, I happened to look down at a schoolyard at recess. Forty kids in a perfect circle, little kids, with one teacher in the middle and I thought, "Hmm — try that at Bedford." You know, just symbolically. In my view, creativity, in the sense that we're talking about, breakthroughs, huge gains in innovation in R&D, are not in the Japanese tradition. The environment would not support individual free thought, an individual going out and finding money and finance, that kind of thing. So I think we will always be better at it. The Japanese culture sure does support great efficiency on production lines — workers that run, not walk, between stations. You go to a Japanese plant and you just have to walk away impressed. You see a guy go running by and then you look and the next guy is running by. I went to Kawasaki down in Gifu on my last trip because it was where I was when I was a captain — I looked around the whole plant, 2,000 workers, and I saw everybody scurrying.
I do not feel that the Japanese are a great threat with respect to areas like artificial intelligence where you need big breakthroughs. I think we're the threat.