

**"Reforming Acquisition:
Getting it Right the First Time"**

Dr. Paul Kaminski

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Dr. Kaminski: Thank you, Mike.

Acquisition reform has been a subject that we've interacted with probably for the last 25 years and I'm afraid we still don't really have it right and we have some work ahead of us. What I want to talk about today is a prescription for getting it more right.

I've left this chart up. I'm going to come to it eventually in the briefing, but I wanted to leave it up to underscore a very key point which is that most of the work that I have been affiliated with in the past in acquisition reform was process oriented. That's still where much of the activity sits today.

What I want to do is to raise attention to the fact that there is a very important people issue associated with this, and good processes help. But good processes are not a substitute for good properly trained and educated and domain-experienced people. So you will hear a big part of that emphasis in the talk that follows.

Now just a little bit of personal history. My first involvement with any significant acquisition reform activity occurred back in 1986 with the Packard Commission. I served as staff to that commission. It was a very well-publicized, very effective commission, but it also was a very process-oriented commission.

I became engaged again in 1984 when I signed on as Undersecretary of Defense for Acquisition and Technology during the Clinton administration, where there was a major program of reform; I would also say highly process oriented, looking to streamline the procurement system, making better use of commercial practice.

While that was going on, there were substantial cuts being made to the acquisition workforce. The Department of Defense made some, but the Congress began -- In fact, the first tranche began the year I left at the end of 1997, and there followed three more years of cuts, the result of which was a very serious erosion of the skill and experience base of our acquisition work force. And we're still harvesting some of those problems.

I would also say during my period of service, besides the cuts to the workforce, we were dealing with an era in which there was significant lack of funding stability. Annually, I was seeing about ten percent cuts made retroactively to the investment budget, and we had to replan the program and that was very disruptive.

During that period, I would say we had limited new developments, but as I look at the programs that were underway at that time, I've made a short list. Programs like SBIRS, Predator, Global Hawk, JDAM, the beginnings of the F-35, the F-18 Superhawk Hornet, the Virginia-class Sub, the DDG-51, and then the C-17, turning that program around and getting it to be productive.

As I look at that list as objectively as I can, I'd say there was a pretty good stream of successes. There were some notable problems, and at the top of that list was the SBIRS program.

The legacy left behind though was a legacy that made some good progress in streamlining. There are some places where people might feel there was overstreamlining, but I would say the biggest set of problems left behind, mainly due to those congressional cuts, were the people issues that I want to come back to again.

I engaged for the third time in major acquisition improvement activities in 2007, at which time I was asked to lead, and I had the good fortune to have General Les Lyles serve as a Vice Chair, a national research council study reviewing pre-milestone A & B activities, preparation, and system engineering. Our customers for that work were the Air Force Secretariat and OSD.

I would say the outcome of that review was very strongly embraced by both the Air Force leadership and OSD, and it also has been embraced by the Congress where we have a broadened bipartisan commitment to major reforms and the passage by unanimous votes in both houses of the Weapons Systems Acquisition Reform Act, which incorporates the major recommendations of that report and was designed to bring greater oversight and accountability to the earlier phases of our acquisition systems. The President signed that legislation into law before Memorial Day, and the department is now moving to try to quickly implement its provisions.

Well we're working to implement these provisions, though we're still living with acquisition problems across the department. The problems that we're living with are not just problems in the Air Force; they're occurring across each of the military departments. I just picked an example out of yesterday's press. A quote by Pete Chiarelli, Vice Chief of the Army. Pete, on national defense, said, "The

Army's antiquated ways of buying new equipment are depriving soldiers of the latest technology and making it more difficult for them to do their jobs."

Pete is a former commander of the 1st Cav Division and the Multinational Corps in Iraq, and he has been a vocal critic of the Army procurement systems. He is particularly frustrated by the inability of the Army to grab technology from the open market and make it available to soldiers quickly. He said, "We have to find better ways to keep up with technology. It doesn't do us any good to have a procurement cycle that takes 10-15 years." I couldn't agree more with that.

He also noted that if our procurement system were doing the iPhone we'd still be 5-7 years away from putting the first one in the market. And his own experience with the iPhone stands in painful contrast to how technology is acquired and employed in the Army. He said, "I've had three models of the iPhone, and each one has been better, with more features, and each costs less than the previous one. The Army's radios, by comparison, take years to develop and the new models come with staggering price tags."

However, he cautions that he is far from suggesting that the iPhone would solve the Army's IT problems. Two major drawbacks in the iPhone are that it's not secure for military use and, like all cell phones, can't be operated in remote areas outside the reach of the networks.

So what's needed here to be able to harvest technology and bring it to bear? I'd say we have to start with a system-engineering foundation with the emphasis on people as well as process.

Let me say some more about system engineering. First off, I would agree with Secretary Gates who said that there is no one silver bullet that will correct all of the DOD acquisition problems. So system engineering isn't the simple, single answer here. But I do believe that good system engineering coupled with effective development planning are the two most important contributors to successful acquisition.

Now I could spend the whole talk here defining for you what system engineering is. Let me try to start with an oversimplified definition. In my view, system engineering is a broad approach to conducting key tradeoffs in a systematic manner as we define what's needed and how to go about building it.

It perhaps helps to have a little scene-setting example of system engineering. The one I choose is to go back and look at my experience in system engineering on the F-117

program. In that program, good system engineering required a framework in which our objective was to build the very best antenna we could build and every now and then check to see if it would fly.

Now I'm joking a little bit in that overstated objective. On the other hand, when you think about that problem, where we were making orders of magnitude adjustments in the signature of that airplane and most other factors were varying within a factor of two or less, the system engineering framework had to take that perspective dealing with those major reductions. And we had to reorient the team to that frame of reference.

When we look further at system engineering, what I thought I would do again rather than more formal definitions is cite some examples of good system engineering practice in the Air Force and poor system engineering practice.

Examples of some good work include the Apollo program and also the Air Force ICBM programs. For example, the Minuteman and the MX programs conducted in the '70s and '80s.

Apollo succeeded in putting men on the moon in about eight years. When you think about that today, it's pretty incredible isn't it? At the start of the program, almost all of the key technologies were immature. But good systems engineering and development planning were applied in that effort, and they were applied using a systematic approach, reducing risk by taking a series of limited steps and applying the learning and the domain experience gained from each step to the subsequent step.

The Air Force ICBM programs used a very similar approach. We had a ballistic missile office set up in San Bernardino, California, where we developed domain expertise in our uniformed officers and supported that with system engineering assistance from the then space technology labs of TRW. Using that approach, we began conceptual studies and technology development each time we thought about a new ICBM.

We held initiation of full-scale development contracts for each of those programs until such time as we had done competitive concept definition studies and let contracts to develop and demonstrate key enabling subsystems. Examples would typically include the guidance system, the reentry system, and critical propulsion technologies.

As a result of developing this base and, as importantly, developing the domain experience of the people both in government and in industry developing these critical subsystems, the time required from the initiation of what we

then called full-scale development until first flight was typically three to four years. Again, something unimaginable today with our acquisition experience.

But how did we do that? We did that as a result of having the maturing of the technology but also the domain experience of the people being able to manage a full-scale development program with a domain-experience base and the bruised knuckles experience of developing those critical subsystems.

Now an example of poor systems engineering was the SBIRS program that I mentioned earlier, in which a lack of domain experience and analysis led to a failure to anticipate such problems such as severe radio frequency interference between two of the key payloads. That problem was discovered years after the program initiation. So there was inadequate front-end system engineering and development planning for contributing to the problems of that program.

As I look now to catalogue some of the key systematic contributors to acquisition problems, I want to do this in a way that we can talk about the problems and then what is the prescription for dealing with them. So I've chosen just five major ones to review briefly with you.

The first one on the list is the lack of early and continuing system engineering and the absence of a closely coupled development planning program. These two were highlighted in that NRC report that I referenced.

Now to go another step behind this, the root causes of this problem are a lack of sufficient personnel, in both government and industry, with adequate education, training, and I underline domain experience. I don't know how to do system engineering without having experience in the domain in which you are doing the work.

Now this includes not only personnel in acquisition, it includes personnel in the requirements development process working with acquisition as we work our way through to understand the drivers and the tradeoffs.

There is also a lack of sufficient front-end investment in most programs; investment needed to understand what the key tradeoffs in cost, schedule, and performance will be and to identify and address the risks in a systematic manner.

It's very interesting, the iPhone example that I used. This front-end process was done extremely well for that program, doing the tradeoffs among the market demands and needs and what the technology offered and what the maturity of various pieces were.

The next major problem that I see is what I call the lack of alignment of responsibility, authority and accountability of the program manager. In many cases, the program manager's authority is diffused by many levels of oversight in both the DoD and in the Congress. And the financial and performance constraints imposed do not allow sufficient freedom of action to apply informed judgment in a timely manner.

Flexibility is further limited by the application of a one-size-fits-all approach imposed by the DoD 5000 system and the oversight practiced by DoD and the Congress. I believe a program manager needs the freedom to tailor the acquisition approach to the problem.

Dealing with IEDs with a cycle time of three weeks is quite different than dealing with a next-generation bomber. And the system has to be tailored to deal with each of those because of their unique approaches and problems.

A program manager also needs to be able to tailor the response time of the program to fall within the range of response time of the threat and to be able to apply a variety of tools and techniques such as prototypes, competitive prototypes, modeling and simulation, and critical subsystem component development. For this to work, we need program managers with the education, training, and domain experience needed to enable timely responses and excellent judgment that is relevant to the domain.

The next major contributor is a lack of stability of program funding. This is a problem that is very disruptive. It's a problem in which I have seen the removal of X dollars in a program typically result in the later need for the addition of 3X to make up for the difference. It's a very heavy price that we pay.

The fourth one is lack of early attention to test and evaluation, with insufficient planning and investment in the tools -- for example, modeling and simulation -- test equipment, facilities, and personnel to provide the timely and meaningful results needed by program management and system engineering to continually refine performance objectives and development plans.

And finally, excessive and continually growing time from program initiation to fielding. As this time increases from a few years to 15 years or more, it undermines the entire acquisition process. It causes key people to lose the recipe and to lose a sense of accountability as well as a sense of being able to make a difference when you have to wait 15 years to see the result.

When new capabilities are developed and fielded in five years, engineers, managers, testers, cost analysts, et cetera, are all able to benefit and apply the experience gained from a previous program to the current program. They can also see the results of their decisions and be held accountable.

We can also meaningfully employ past performance of the contractor as a factor in the award of future programs. An important factor in incentivizing performance.

Now all of this changes dramatically when the time extends to 15 years and we have three to five rollovers during that period, of management, engineers, cost analysts, and the commercial supporting technology during this period of time.

This long and growing time period is a result of the inflexibility inherent in our entire system of requirements development, budgeting, and acquisition, and it creates a vicious cycle in which it further increases the time and cost growth. We can't stand the result as a country. We can't stand the result that Pete Chiarelli was talking about, as evidenced by the fact that we discard our current acquisition system in order to deal with urgent needs and field systems such as MRAP and jammers to counter IEDs by forming and using rapid-reaction organizations. This cycle must be broken by attacking the root causes.

So what's the prescription for dealing with each of these five? The first step is to ensure that we not only restore but enhance our early and continuing system engineering coupled with effective development planning. This will require a commitment of more significant investment dollars earlier in our acquisition programs and a commitment to people to build a cadre of system engineers and development planners with the education, training, and domain experience needed to be effective.

Attracting best and brightest to this work and, more importantly, keeping them, will require a personnel system that will identify and attract these important human resources to establish a career path to allow those who are successful to advance to senior program management and leadership positions. Their domain experience will be enhanced by managing the building of critical subsystems during the development planning program, reducing risk, and at the same time building skills and experience in the domain.

The Congress and the department can assist by providing incentives for attracting and keeping personnel; not only financial incentives but educational, training, recognition,

and, most important of all, the ability to see that they are making a difference in outcomes.

We will need metrics to assess how well we are doing in building and applying this cadre, and we must recognize that this will not be accomplished in four years and probably not even in eight. This is a longer-term process.

The second element of the prescription. We really need to work to align the responsibility, authority, and accountability of the program manager. And that requires that a degree of trust be established between the program manager and those responsible for our oversight mechanisms. We must be prepared to delegate authority to the program manager and provide him or her with some flexibility to manage, to adjust levels in allocation of funding--within bounds--and to adjust the allocation of performance parameters. Also, to make some adjustments in schedule and, most importantly, to tailor the acquisition approach to be responsive to the need.

Clearly, there must be bounds established beyond which the program manager must seek approval from oversight authorities, but I believe these bounds are too narrow and inflexible today. One size does not fit all programs. The Congress and the department should be willing to consider and tailor many of the restrictions that unnecessarily limit and delay program managers today. I have seen many of our successful classified special programs benefit from this greater management flexibility that was afforded to them and is not afforded to many of our conventional program managers.

The good managers in these special programs have used that flexibility to the great benefit of the program and the department by operating with transparency and maintaining trust. I realize that it seems counterintuitive to recommend greater flexibility and trust in an environment rife with acquisition problems, but I believe we need to break the current cycle and this is the only way.

The third major element of the prescription is improving funding stability. And that will require that the department and the Congress be willing to give up some of their flexibility in making annual or more frequent adjustments in funding. Doing so will require tradeoffs of the cost and benefits, and I believe it is time to make explicit consideration of these tradeoffs.

When I was serving as Undersecretary we did some work using Monte Carlo simulations of typical defense acquisition programs and found that we could improve our efficiency in delivering on our programs by eight to ten percent through the use of about a ten percent reserve, which was all

allocated in the end but it gave the flexibility to us to be able to deal with key problems where funding was needed.

The fourth element of the prescription. Giving early and serious attention to test and evaluation. Test and evaluation is often an afterthought. I've seen many contracts written and signed for the development of major programs in which the testing and evaluation wasn't addressed in the contract.

We've got to do this work up front to be able to identify what's needed, how we are going to test, and to provide the appropriate test resources lead time away from the testing capability. Not doing so adds to this time problem that I've been talking about.

Finally, reducing the time from program initiation to fielding will require a logical combination of all of these actions. Things can be helped by placing more emphasis on time-certain acquisition once we've done the appropriate front-end system engineering and development planning.

With good development planning, we can assign managers to develop prototypes, critical subsystems, or components needed to better understand the cost and performance trades. And it's reasonable to expect that many of these developments can be completed in three to four years, so one manager will be in place from start to finish. This will help align authority and accountability in both government and industry.

We can also apply meaningful incentive programs to link profits to demonstrated performance and use that performance factor in future competitive awards.

I think the department and the Congress can assist by placing more emphasis on time-certain acquisition, with the opportunity for milestone reviews at the completion of major development and planning activities.

I believe that action on all five of these issues in the prescription will have a significant and demonstrable impact on our serious acquisition problems. Once again, one needs to focus not just on process but on people, and we need to move with the same urgency and priority that we expect in our combat operations to permit the timely and effective development and fielding of the capabilities and services with what I expect will be more limited funds in the future.

Let me end now with just a couple of charts. I think the best way to illustrate the people issues I've been talking about is to look at this experience chart.

If you look at that chart and pick the triangle in the middle, that's the mid-career point of people through these various phases of programs. If you look at where we are today, beginning with the little nick right between 2000 and 2010, what you see is people at their mid-career point have had experience with one or two programs during their career. Those with the six-plus program experience have just about retired.

As we move into 2010 to 2020, we're looking at people who've had experience with one program in their career. This is the penalty of the 15-year acquisition cycle that I'm talking about. The loss of the recipe, the loss of the experience base, and it isn't true only in government; it's also true in industry. They've got very similar demographics.

This cries out the need to do more prototyping kind of work to be able to learn from that base, get the recipe back, get it understood.

The next point I wanted to make, I found this very interesting. This was a chart that I took out of a recent Lexington Institute publication. What I want to draw your attention to is the third line from the bottom. It says investment in billions of dollars. These numbers are in constant, I think, 1965 dollars and the surprising thing to me -- and I don't know why this is surprising to me, I thought I would have better understood this -- if you look from '65 to 2010, that's about a fifty percent increase in investment in constant dollars.

If you do the numbers, that's a one percent per year increase. Meanwhile, the GDP and most other government spending is increasing at three percent a year. So this isn't the only cause, but it's not a well-recognized cause of the problem of why are our quantities of purchase going down so much. And the answer is that our investments aren't keeping up with GDP and other elements in the economy.

In the next chart, I want to draw your attention to one other issue, which is the movement of resources. If you look at the one, let's see, it's -- that didn't work too well -- let's see here. Let me just describe it.

If you look at the operations and support line, which totals the MILPERS account and the O&M account, and look at the change from FY88 till FY2013 projection, you see an increase of seven percent. Where did the funding come from?

Look at the investment account total, which goes on the bottom line from 41 percent to 35 percent, a reduction of 7 percent over this period. So we're systematically moving our investment funds to reduce the capitalization per

person, basically. Something that -- The increased capitalization of our personnel has led to some very important strengths for this country, so this is a bothersome trend that's worth looking at a little bit more when we consider investment.

I want to give you some time for questions, and questions on any element of acquisition are open; they don't need to be constrained to my five major bullets.

Moderator: Dr. Kaminski, let me just take the opportunity of the chair to ask the first question.

The entire budget process at the service level and dealing with OSD and the comptroller and then, of course, OMB sometimes, and the Congress, is designed to wring out every bit of spare extra dollar out of every program we have. What you're proposing, which makes eminent sense, to have --

I mean, there is risk in these programs. There needs to be a management reserve. There needs to be a way to be able to counter the risk. In your study it's three times, and many times it's eight to ten times. If you spend a dollar today, you can save ten dollars in the out years. How do you change the entire system without having it be called a slush fund or have the various constituencies try to take the money out of the programs?

Dr. Kaminski: I often get into this kind of a discussion with Members of Congress. The best example I can use is an example I think we all can identify with. When was the last time you bought a house, had a house built? When was the last time you actually ended up finishing that house with no changes to the design and with the cost that you started with in the house? And if there is anybody sitting here who had that actually happen, I'd like to talk to them.

That's a very predictable well-understood process. Very few technology risks. You need room for contingencies. What military commander would ever plan an operation without some reserve force and contingency operations? So how could we apply this recipe to acquisition with no flexibility in the accounts?

I actually believe you need to have some reserve flexibility at two levels. You need some at the program manager level, and you need some at the acquisition executive level across programs. My own sense was something on the order of a ten percent reserve at each account. It made good sense statistically when you looked at the Monte Carlo simulations of what happens in programs.

Now you get into difficult details about when do you have to allocate that reserve, and not all of it needs to be kept in a budget execution year. Some of it needs to be kept in the out years before the Congress actually has to authorize and appropriate the funds. But we've had great trouble coming to grips with dealing with that because of the sense of wanting to be efficient in allocating every budget dollar. We'll actually do better for the country by leaving some flexibility there.

I would also say that in dealing with the Congress I run into issues with my big push on the front end system engineering and development planning, in which the argument is well that's going to cost money. Absolutely. It is going to cost money up front. However, I believe over the length of the program it's going to save money. Actually, it's going to save considerable money, in my experience.

Question: Sir, how do you feel about the -- You mentioned earlier about prototyping, doing more prototyping. I know back in the '50s and '60s we actually, you know, not every system that was started was planned for production. We just did some technology development, more so than what we're just doing today in the labs. How do you feel about going back to that where we actually start some systems that we know in advance probably aren't going to go to production but we want to keep the development side and keep the experience going?

Dr. Kaminski: I'm a big believer in prototyping, and not only at the system level but at times at critical subsystem levels. There is always value in actually moving from analysis to building something. We almost always learn something.

Now again, there are limited dollars in terms of the scope of various prototyping efforts. I would also say that you need some very careful attention to define what kind of a prototype you're looking for, because there are many different types of prototypes. Some are designed to wring out an operation of a concept. Some are designed to look at the integration of new approaches, where the integration is the focus. Some are designed to push a particular material or property into some new regimes and gain experience doing that.

So there is room for all of those kinds of prototyping. In some cases, the use of prototyping activities may be a good way to deal with some of the industrial base issues we're facing in the kind of environment that I was just illustrating in that chart. So I think we need a larger

component of our investment going into prototyping, to answer your question.

Question: What's your view of the [inaudible] future acquisition?

Dr. Kaminski: I think what's really important there is to not be making theological arguments on either side. There is a set of theological arguments that say fixed-price contracting is the solution to all of our problems -- coming from the government side and from the Congress sometimes; and sometimes coming from the industry saying fixed-price contracting, not on your life.

The issue here is applying some experience and assessing the factors associated with a particular procurement, understanding where the risk is, how that risk is to be shared. For example, it might well make sense on some programs to divide the program up into two pieces; a piece which can be bid at fixed price where we understand the risks and the issues associated with it, and another piece where there's less understanding.

So a summary answer is we need to stay away from the theological arguments and with some sense and reason look at what makes sense for the particular program.

Question: The chart on experience. I see [inaudible]
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Moderator: Hold on just a second. Let's get --

Question: I'm sorry.

Moderator: That's all right.

Question: But I guess when I look back at all those platform systems and I look today at all the complicated subsystems, it does seem like there's enormous opportunity in some of these subsystem programs, like you talked about, for program management experience. I mean a new DMS system or a new smart bomb rack or a new radar system on these platforms. If you maybe added up the amount of ACAT 1 programs or -- I think it might help provide a better balance of maybe opportunity to train on complex systems that we would all benefit from. S I guess that's an observation.

Dr. Kaminski: Well I certainly agree with that observation. At the subsystem level there is room to do some things and also we have to recognize that when we're dealing with one percent annual growth and investment and the GDP and the rest of the economy are growing at three

percent, we're in an environment in which we're not keeping up with what the cost of some things is growing at. So that's a prescription to have to buy fewer articles of things and one needs to look very hard at the affordability issues, especially during the early tradeoffs.

I've had numerous discussions as the acquisition executive in the early phases of the requirements process, making it very clear that we can either push to this end of the spectrum of a requirement for a new system and build three times fewer or push to a more center of the envelope and build three times more. And we need to have that tradeoff with our operational users up front.

The sense is well we'll push to the end and later we'll negotiate a position to still build three times more. Of course that isn't happening very often today.

In fact, what's worse, if I go back and look at my whole Air Force experience, there was only one program I ever worked on where we actually built the system at the rate we planned. That happened to be the F-117, which we built one a month on. Every other program I ever worked on we built less and sometimes substantially less.

Question: Now a question, if I can. Do you think that the developmental planning is -- Do you know where in the Air Force that's done? Do you think part of the contributing problem here is that maybe that's in the past decade or so, that has been disbursed between -- Sometimes it seems like it comes out of DARPA or ACC or Air Staff or, I think at one point it was clear that it was ASC. That's where you went when you did that kind of developmental planning that you talked about. Now it seems more OSD disbursed and anyway --

General Hoffman: I can tell you where it is and what happened to it. [Laughter]. It went away. It died. It totally went away.

Moderator: It died. I agree.

General Hoffman: Because Congress thought that we were spawning new programs without proper new-start authorization, so they said we'll fix that. Zeroed out the money.

And it has taken us years now to finally convince people and give Congress confidence that we're not doing that but we're doing proper developmental planning, and it will reside at the product centers. It's not just ASC. They're for aircraft.

And as we increase the number of PEOs it's even more important that the product center have that developmental planning function; ESC, AAC, SMC, but that they work with the lead commands, coach them through what the art of the doable is, find out what laboratory efforts have to sit there and precede the launch of a program before you ever get to MDD and so forth. So we're growing it back, but that's only after it went to zero.

Dr. Kaminski: That development planning activity I completely agree with, General Hoffman. It went away. It was absolutely removed, and restoring it is a difficult process. One of the other things that development planning contributed to is something that I've actually -- I actually give whole talks on this subject because it's so important to me. It's the four Ps that I've always found make a big difference if you're trying to do something significant and important.

The first of those four Ps is People. That development process was a good tool for training and developing people in both government and industry.

The second P that you need to have to be successful stands for Partnerships. Partnerships between government and industry. Partnerships between acquisition work force and user work force. Partnerships with test organizations. It goes across the mill. And again, development planning was very good about forging some of those initial partnerships.

The next P stands for Process. I think you can understand how development and planning contributed to that.

The last, and sometimes nearly as important as people, is the final P is Persistence to stay with it till you deliver something.

Moderator: We've got time for one more.

Question: Okay, I had a quick one. Dr. Kaminski, on system engineering and cyber, we've seen, you know the warfighters over awhile have seen cyber attacks on their operational systems. But over the last few years, we've seen that move earlier in the kill chain, if you will. We're seeing, within the acquisition community, our engineering data being exploited through our acquisition program offices, through our defense industrial base partners. We're seeing it with the globalization of information and communications technology. We're seeing infiltration of the supply chain.

Looking at things early in the development cycle, looking at replenishment spares all the way throughout the

entire acquisition in ONS. Do you think from a system engineering aspect current tools such as the program protection planning process, other types of instructions and manuals, are adequate for us to face that threat in the acquisition community? Or do you think that we need a renewed focus and energy in that area? Thank you.

Dr. Kaminski: Unfortunately, I don't think the tools we're using today are adequate. I've spent some time dealing with the cyber threat. I just, a couple of months ago, finished a review for the Senate Select Committee on Intelligence where I serve on a technical advisory committee.

Unfortunately, my conclusion is that the more you know about the cyber threat the more you worry. My sense today is that we are not moving fast enough yet as a nation to close the gap that exists between the offense and the defenses we need to protect what's critical to us, and that gap is still growing. So we need to get engaged in a better way.

We probably have to have more public debate to allow the public to become a little more informed on what's happening to the intellectual property of the country. It's a serious problem.

Moderator: Dr. Kaminski, as a receiver on the receiving end, when I worked for the Deputy Secretary of Defense, as he came into my office beating on me to get more acquisition people promoted, as the list came through. I want to thank you for what you've created out here, and some of the great folks that we have that are serving our Air Force.

On behalf of all of us at AFA, I would like to present you with an Air Force flag, flown over the Air Force Memorial on Memorial Day. If you've got just a few minutes left, I'd like to ask you, since the room's not going to be used, if you'd like to stand down here and anybody that has got personal questions or wants to talk to Dr. Kaminski, then you can stay back behind for a few minutes.

Dr. Kaminski: Thank you, Mike.

Moderator: Thank you, sir.

[Applause].

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