ATTENDANCE:

Dr. Gerald Abbott

General Paul J. Kern USA (Ret)

Mr. Don Kozlowski

Mr. Dave Patterson

Also Present:

Mr. Alfred Hutchins

Dr. Linda Brandt

Ms. Judy Stokely

Dr. Francis A'Hearn

PROCEEDINGS

Mr. Patterson: I would like to get started, we're just a tad bit over 9:00 o'clock. But let me extend a welcome to all of you who are here this will be the last public session of the Defense Acquisition Performance Assessment Panel Meetings. And we are delighted that you would take time to come and join us. And with that as a brief introduction, let me make the real introduction for this meeting. It is our great privilege and honor to have with us Mr. Norm Augustine, and he's going to address the panel and then open up for some questions, and we would hope that you would not be reluctant to join in. Mr. Augustine has a distinguished career that is just quite phenomenal, but let me just point out some of the highlights. Some of the things that most of you probably know, and then a couple of things that perhaps you didn't he served in the Pentagon, in the Office of Secretary of Defense as Assistant Director for Defense, Research and Engineering and as well as the Assistant Secretary for R&D and subsequently as the Under Secretary and for four months the Acting Secretary of the Army. And you probably can identify with a number of our folks today who are in Acting capacities and thinking about enlisting the help of Central Casting, because we have so many.

He currently serves as Chairman of the Executive Committee of Lockheed Martin, and having returned as an

active employee on August 1st, 1997 at which time he became a lecturer with the rank of Professor on the Faculty of Princeton University, where he served until July of 1999. He has served as Chairman and principal officer of the American Red Cross, former Chairman of the Educational Task force of the Business Roundtable. And a member of that organization's Policy Council. Some of the things that you may not know, in pursuing his hobbies, he had dog sledded in the Arctic, explored volcanoes in the Antarctic, giving equal time to both of those and backpacked in the Canadian and U.S. Rockies. Canoed the boundaries of Canada, horse backed in the Rockies, and also sailed a tall ship in the West Indies and a stern wheeler on the Mississippi

He is in pursuit of his hobby of photography. He has photographed whales in the Inside Passage, Baha California, polar bears in the Northwest Territories, grizzlies in Alaska, lions in Africa. Wolves during the winter in Yellowstone, he has traveled to 19 countries toward both the North and South poles and traveled to Timbuktu, which I'm happy to tell you is not part of the base realignment and closure.

[Laughter].

He is most perhaps noted for his being an author, he is the co-author of Defense Revolution and Shakespeare in charge. But for those of us in this room, Augustine's Laws

prevail. And with that I give you the table and the microphone. Thank you very much for being with us.

ACQUISITION REFORM - Mr. Norman R. Augustine, Author, "Augustine's Laws"

Mr. Augustine: Well thank you it's nice to be here. I think what all that proves, and it's very nice to be invited back. And it proves I'm in the fifth stage of my career. I don't know if you're all familiar with the five stages of a career. In my case, they Who's Norm, Where's Norm, Get me Norm, What we need is a young Norm, Who's Norm.

[Laughter].

It's nice to be invited anywhere, thank you. What you're doing I think is particularly important and it's also particularly timely, in the sense that we have a Secretary of Defense who knows how to get things done. We have a Deputy Secretary who has lived with the Acquisition System for many years. We also have some pressures that help bring about change. Fighting at least two wars at the same time and facing tough budget pressures, all those things sometime give the motivation to do things that probably should be done but might not be done, and are under less demanding circumstances.

With regard to the Defense Acquisition System, I think the first thing that probably should be said although many of us criticize it, and I certainly do because it is not as good

as it could be, or it should be. It's still noteworthy that our military at least in my judgement does have the finest equipment of any military in the world, and I think most other militaries would gladly trade our equipment for what they have. So the system, although it has many shortcomings, it does on occasion produce some awfully good equipment and we should keep that in mind.

One of the problems with the acquisition process, if you read the newspaper. Over the years you might conclude, and I'll show my age here that the problems range from toilet seats, to coffee pots, to step ladders. And you all know the litany that went on for years those aren't the problems. Even if those were all true and most of them, were not there is another side of this story, but even if they were true, I once figured out that with the money that was so alleged to have been wasted on those items, you could have bought three Jeeps and a mess kit, and that's quite literally true. More recently the criticism of the Defense Acquisition process comes from the very unfortunate circumstances involving Darlene Druyan. My experience in a lot of years dealing on both sides of the Defense Acquisition process, the government side and the business side, the industrial side, is that dishonesty is extraordinarily rare, the Ethical standards in the acquisition process are extremely high. And higher again to be found in almost any other scheme. That's not the

problem, we spend too much time trying to solve ethical problems we probably missed the point. Which is not to say that what happened isn't a great tragedy, ethical breakdowns in a position of public trust are the worst kind of all, particularly when you have the lives of our military at stake for what you're doing.

So in no way to I condone what happened but I would emphasize out there, there it is. And hope that the committee won't spend undue time worrying about the ethical standards in the acquisition process. On the other hand I have certainly seen more than one would like to see of incompetence, and sometimes of indifference, and those are things that do need to be addressed. But where then are the problems, I would like to just take you through a little scenario, just to suggest where I think the principle underlying problem is, I've been told I should speak about 15 minutes then I need to leave time for questions, and I'll try to adhere to that.

Where is the waste and the problems, let me pick just one area that I've had some experience in over the years, Field Army Air Defense, or Forward Area Air Defense to be specific. Early in my career there was a problem being developed called FADS that was about 1960, it never got very far. It was terminated and we began a program called MOLOR, just after spending nine tenths of a billion dollar of then

year dollars, MOLOR was cancelled because we started Roll-On, we started Roll-On and spent 2.4 billion on it. Cancelled it in 1975, and started Sgt York, it lasted until about 1977, and we had spent 2.8 billion dollars of then your dollars and we cancelled it so we could start ADACS. We spent six tenths of a billion dollars on it, and you get the message.

I've just added up 6.7 billion dollars, probably 15 billion in today's standards. At the end of that period our soldiers were still using a modified Navy air missile. The only thing we really had created was a WPA for engineers on a related subject, if you take medium and high altitude Air Defense over the years, the two finest systems in the field I think for many, many years were Patriot and AEGIS, both are terrific systems, each took 18 years to develop. There's something wrong when it takes 18 years in a world where the technology shelf life is measured in months.

In the case of the F-22, during the four years, I had some responsibility for it, we totally revamped the program we structured it three different times, everytime we did we renegotiated and thousands of supplier contracts, literally thousands and it was very rare indeed. You can imagine we got better terms after the renegotiation than we had before. What I'm leading to is the concern over turbulence, constant changing, stopping programs before they're completed. Starting new programs, presumably has no problems, the fact

is you just don't know what the problems will be yet. Rather than finishing programs that have started and reducing the constant change of people, schedules, funding, requirements that have plagued program managers trying to accomplish something.

I'm going to devote the rest of my time to go through a number of proposals. Or suggestions to what we might do. I'm going to put them roughly in priority order. Very roughly. They're highly interrelated. But let me start down my list. The first and I say it only because of its importance not because I think that we need any particular changes, but to do what boards of directors of companies are finally doing and that is choosing leaders, they're placing primary emphasis on ethics and moral compass of the individual.

Rather than just did they make the numbers over the years. Secondly extremely important, far more important than this strategy we have or the plan we have is to have experienced capable people over the years at DoD, one fifth of all Presidential appointees slots are generally empty at any one time. And I might observe that there's at least one, or maybe two messages in that. I think my board of directors discovered that 20 percent of our senior positions weren't filled and the company was still plugging along doing reasonably well. They might have asked me some questions. I

would commend to you the John Collins book, Good to Great, in which he refers to the people on the bus, and he points out that the people who are on the bus are far more important than how you organize the work or what your basic product line is, or your strategy, I certainly would endorse his view.

With regard to people, we make it so hard to bring particularly good civilians into the DoD, or into our government in general. And similarly it's very hard to get really rid of non performing individuals, I think of the advice when Tal Ridge first came onboard, he would ask if I had any suggestions and try to bring together a team of people, many of them weren't very enthusiastic. And I quoted to him Vince Lombardi's advice which was that if you're not fired with enthusiasm you'll be fired with enthusiasm.

[Laughter].

That brings me to my third point, and this one may be surprising to you to be so high on the list. And that is to give very high priority to funding basic and applied research in the Defense Department. Even in times of budget stress, that's an area because of its long payoff that gets under emphasized but that is where the big breakthroughs and the game shapers come.

And example would include stealth, or night vision, or even the atomic bomb. You can't afford to be without those.

You can't make up for it by having 10 percent more troops. And so I would hope that we could continue or not continue, we need to do better than put a great more emphasis on supporting basic research and applied research in the DoD.

Fourth and this is extremely important, I've alluded to it. To finish programs you start, unless there are very compelling to stop. The way you do that I think is you make it very hard to start new programs extremely difficult, but once started you make it very difficult to stop them. By making it hard to start, I think one should only begin a program when you meet four conditions. One is that the need is clear, second that the concept for satisfying the need is also clear. Third that the technology is in hand. And fourth that the necessary funds are available. Fifth eliminate turbulence during program execution, the constant turmoil of funding, schedule, requirements, people. Sixth I would allude to a study conducted along the lines of your study by Gil Fitzhugh in 1966 and I worked with him some at that time, Gil his final report said that the problem with the defense acquisition process is that everyone is responsible for everything, and no one is responsible for anything.

I can remember signing D&Fs when I was Assistant Secretary, with my name I could go back into - if my name was the 26th signature on this document. There were 25 people

above me, and I think none of us took any great responsibility because we assumed the other 25 were.

The next item I would site, is the importance of providing reserves. Budgeting, scheduling, and technical approaches. The things do go wrong in difficult undertakings, acquisition is difficult and things will go wrong, in the best managed programs and if you don't have reserves to deal with those things you get into this death spiral where you start to change the schedule and cost more money, which requires other schedule slip and so on.

The next item would be to fund programs in a single increment from major mile stone to major mile stone. Not on the annual installment plan, as our budget process now requires. It's a little like trying to build a house, and saying that - say you're a builder, here's the installment for the first month. Come back next month and I'll tell you how many bedrooms I've decided on, and how much more I want to spend next month. It's not a good way to build a house, and it's certainly a good way to build a major system.

The next is, in today's environment, particularly we need to be aware of risk diversion, if the punishment for failure and I'm not arguing in favor or being cavalier or sloppy in any sense. But if the punishment for failure is greater than the reward for success, it doesn't take long for an individual to figure out what the optimum strategy is.

And I think we should think very carefully about whether we're permitting enough risk taking and accepted the fact that we'll have occasional failures. That philosophy is what has made DARPA such a fine organization.

And I have here a list of examples I could cite, to save time I won't. But it's some of the most important systems we've got or had in the inventory over the years. That started out with long strings of failures. Include everything from Corona to Polaris.

Next these is the matter of cost and -- trend and cost. If you ready my book the numbers in there show that we're headed toward a real problem. We buy such small quantities of items today that we're going to price ourselves out of business. We have to, there are a number of things that can be done and I'll suggest some as I go along. But I think placing a great deal more emphasis on product improvement, as opposed to starting new systems is going to have to be a major part of the answer. Closely related to that is the next item on my list, and that is to control the appetite of the requirements process. Normal people you know, say if it ain't broke don't fix it. Engineers say if it ain't broke it doesn't have enough functions yet. I've also noted over the years is that the last 10 percent of performance cause you 90 percent of the problems.

The next item is to be sure to use appropriate contract

instruments. And also use competition wisely and I won't say more, because I think you all know what I mean by that.

The next one is a very important one, although its down on the list it's still important. And that is we need to treat reliability as a performance parameter. Like range or payload. Or altitude. We talk about performance on one hand and then over on the side is reliability and the developers brag about how well their systems work, when they're working. The users in the field want to know how well does the system work when I need it, and so reliability has to be given a great deal more emphasis that it's received.

I also think we should create fast track systems for ultra important programs, some programs just deserve to be treated specially, and taken out of the main stream system. Everything can't be special, but a few things can. And the Polaris did that. The SR-71 did it, the U2, the 117, there are things that I think we just need to elevate, and deal with a special set of rules.

Next to last would be that during times of low production rates is to continue to prototype new concepts. I think we should do a great deal more prototyping, not only for what you learn technically, but even more important is that's the mechanism for holding together the design teams in industry, and now these design teams are probably the most important asset within our industry, and probably the hardest

thing to reconstitute.

And lastly I would hope that we might change our testing philosophy, which over the years has drifted into one of, be very careful how you test this system, or something might go wrong and cancel the program. The wrong way. To what I think is the right way, is to let's really stress the system and let the engineers find out what breaks, so that we can find out where the engines in the performance are below par, and what we need to do to make sure the system is reliable. Testing has become a tool in the hands of those who want to cancel programs.

As opposed to a tool in the hands of engineers to find out how good their systems are. So those are sixteen I think. If I've numbered them properly. And let me just make one last comment. That is the danger that I think we have built barriers between industry and the government that make it difficult for either party to succeed. Almost all the successful programs I've seen have had at least two things in common, one was the government program manager and uniformed military officer, who was willing to put their career on the line to make their program succeed. The second was a relationship with industry that was an arms length relationship but was absolutely open and constructive, and we're in this together and let's try to produce something for our troops. That's an environmental factor that I think is

very important. And with that, I'll quit and be happy to try to address questions.

Mr. Patterson: Well thank you very much. What you have covered has been right on the mark in terms of the topics that this panel has been struggling with, and we really appreciate your insights, and okay panel. Questions?

Mr. Kozlowski: What are some of those programs, you started to mention but you didn't because you didn't have time. I'm very curious.

Mr. Augustine: Well you know there's a long list. This is an abbreviated list, but let me just go through, and I'll go all the way back even before my time believe it or not. You may have forgotten the Wright Bros, famous airplane was destroyed the same day that it flew, that first time.

Of the B-58 program which was technologically a very advanced program, one third of the 30 test aircraft failed. Can you imagine having 30 test aircraft in the B-58, but a third of them crashed. Polaris suffered 13 failures in it's first 17 flights. The sidewinder which is a terrific system, failed in all 13 of it's first 13 flights. Corona, the CONUS satellite also. A long time success failed in every one of its initial 12 trials. Of the first 11 rockets launched to gather data on the Moon landing site for the Apollo Program 10 of them failed and you go down the list. How many of those programs would never have been completed in today's

environment.

General Kern: Can I go back to your testing comments. One of our concerns is the extent of testing and how long it takes to get through a test, and how much it costs to do a test today, particularly as we look at systems of system integrated together, any thoughts on how going back to your last comment on testing, how finding where it breaks but also how do we define success.

Mr. Augustine: A good question Paul. I think one of the things that would help is if we did more engineering test, component tests, during the development program itself. And when we base budget cuts, that's usually one of the first things to go. And if we could do more testing early on, as we put systems together, we would have fewer failures at the system test level, and we could probably do less system testing.

The other observation I would make is there is a lot of redundancy in our test programs. The contractor does testing, the government developer does testing, the user does testing. The independent tester does testing, and I recognize the importance of independence, but I think you can have independent oversight management and analysis of tests, but you don't have to let everyone go out and do their own tests themselves. So probably there could be a lot of redundancy removed.

General Kern, not only could you save time, but you did save a fair amount of money and you would probably end up with a little better system.

Dr. A'Hearn: You spoke about leadership and you mentioned the need to experienced capable leaders in key positions, and then you went on to point out there are many political appointee positions that perennially go unfilled for long periods of time. What's the way out of that dilemma?

Mr. Augustine: I will answer this in the context of your question, I mean we are where we are. The obvious answer if it was industry the board would tell me either don't fill those positions or get rid of them and have it done tomorrow. But in the environment that we live one thing you have to give serious thought to is maybe the service secretariats shouldn't exist other than for a Secretary and a Deputy Secretary, and their small staff. The service secretaries were originally setup, where many of those positions exist, to provide independent oversight from the uniform military. In today's world where OSD exists and is so large and so powerful, the argument for even having those positions is I think greatly weakened, in terms of their capacity to be helpful. By the same token if you could attract real intelligent people to those jobs, you're clearly better off than if they're not there. But I think that question has to

be asked.

Is - with the - has the service Secretary and the Assistant Secretary outgrown its usefulness within OSD? I think it just has to be dealt with with the Congress. And this is way beyond my pay grade. You see the problems with the Supreme Court, if you take it to an extreme there's got to be some understanding of, if you put the Secretary of Defense in charge of the Defense Department, he or she has to be able to pick their people and put them in place.

Mr. Kozlowski: You talked about a healthy prototyping approach just to keep design teams alive, and vibrant. Which I totally agree with. The danger in that is every time someone builds a prototype they want to take it into production. And I've been through that a couple of times in my career. The F-16 started as a lightweight fighter in the prototype but there was always a recognized engine behind that, hey if we get one, we'll get it into production. And we all know what happened. How can we have a fire bowl design team philosophy, everybody is building on prototypes and hopefully building them rapidly so that you stay up with the technology. And still at the same time temper the desire of the forces that want to take it into production.

Mr. Augustine: I guess my answer is not going to be very satisfactory. It comes down to discipline, to management with the fortitude to say this is a prototype and we're not

going to put it in production. The budget's going to eventually going to make that true today in most cases where you won't be able to afford to put these things in production at least in any decent quantities. I think the other thing, when I talk about a proof of concept prototype it would be a system that would be nearly able to be put into production, a short useful life going through all the standards, environmental testing, it would be to prove concept. And it would not be that costly. But I mentioned the design teams, you'd be familiar with this, just the importance of these design teams to our future military capability, they're not a lot of these teams around. They're hard to reconstitute. I think of a conversation I once had with Kelly Johnson. I had asked him how many airplanes - he worked on different airplanes, that actually flew? And his answer was 42. Today an engineer would be very fortunate to work on two in their career and if you think of the difference of his intuitive abilities having built 42 machines that flew, compared with somebody who's built one or two. One of the ways to overcome this, is built a lot more prototypes and to keep that talent base alive, and it's not a huge debate, that's a small part of what most companies workforce, the big numbers are out in the factory, you can reconstitute the factories over time, but the design teams, that experience counts.

Mr. Patterson: I would like to followup on one of the

points you made in that, you recommended that programs be funded in a single increment. And I would like to explore that just a bit, most everybody would agree that that's helpful with the possible exception of those on the appropriations committees who would see that necessarily as diminishing their control over the budget. I don't want to put words in their mouth, but that's been traditionally their point of view. How do you make that case, to the appropriators and satisfy their concerns.

Mr. Augustine: I wish I knew the answer. As you know many other countries do this in fact, we're one of the very few countries in the world that appropriates or develops programs a year at a time. The only hope I know, is eventually the system will become broken enough that they too will agree that something has to be done. You know in a sense appropriators still control the process, they put the money there in the first place. And I think we just have to convince the appropriators that they will get an awful lot for their money if they put appropriate sums in the budgets in the first place and then let people go and produce what they promised to produce then they will get, if they continually to do the same incremental funding approach. But frankly, of course we've talked about this for many years and with no success, and I don't know whether you would have any more success today or not. But it's a very important factor.

And I'm frankly not optimistic but I think it at least needs to be elevated.

Dr. Brandt: You spoke about, and I love the quote from the Fitzhugh Commission which I had forgotten, when everyone is responsible for everything, no one is responsible for anything. Could you elaborate a little bit on how you might see putting some responsibility back into the system, or is that doable given some of the political circumstances we've talked about, what might you do?

Mr. Augustine: That's a great question. When Gil Fitzhugh ran one of the large insurance companies in the country, he was brought into the Defense Department to run a panel much like this, he was - I guess the proper word is appalled by the diffusion of responsibility and authority and the number of people in the chains of programs, and I also remember Dick DeLauer's acquisition study I worked on many years ago. One of the conclusion Dick presented in his report to the Secretary of Defense was that when a new program - when the debate for a new program has been conducted to the point that a decision is made you should take all the losing advocates and shoot them. He actually said that in briefing to the Secretary. And so you have a diffusion of authority and responsibility and the ability to impact the program, not only by the chain of command responsible for the program but the people in the Congress,

who didn't agree with the decision and the people in OSD or the secretariat, they'll cut the budget the next year or they'll stretch the program.

And so you have this spreading of accountability, and responsibility. In my view once the program is started the program manager becomes the central authority that is not to suggest that the program manager shouldn't have oversight, but it should be oversight not to help the management, there's a difference. It's like a corporate governance, there's a difference between a board's responsibility in governing and managing - management's responsibility to manage the board is responsible for making sure management manages what the board doesn't manage.

And that should be the role here, in my judgement of OSD of the service secretariats and the service staff. I think the program manager becomes the focal point once the program is approved. Of course the way one assures accountability is to have very clean simple organization charts, hierarchal charts, who has authority for what and who takes orders from who, and to hold people accountable. It works very well I think in the private sector. Which the management task is much easier as a matter of fact, in part because of that. But part of this is discipline, hopefully the people in OSD and the secretariats and the staffs will understand what the scope of their responsibility is. And the people in charge

of those organizations will make sure that their teams abide by those responsibilities. But when you have as we do today any number of people who quite seriously propose major changes to scheduling and budgets, it makes it very difficult for the program managers to succeed.

Dr. Abbott: I was somewhat intrigued by your comments about controlling requirements in some critics of the acquisition system point out to a perceived fact not necessarily a real one that we have 80 programs ongoing, with money for 60. People who on the other side suggest that since you don't know what the future is putting out 80 programs with money for 60 is not necessarily a bad idea, because one can cancel programs in future, this however runs counter to your comments about turbulence. When is it that you decide that cancellation should take place and what are the elements of that decision.

Mr. Augustine: That's a good question too. I would draw the distinction, there's merit to both of those arguments of course, but I think you can do both. And the way you start at 80 programs so that you cancel some later is to prototype two conceptual prototyping so when you cancel it, it doesn't cost you that much money. And you start out with the idea that this an inexpensive prototype. And if it happens to work out, so terrifically that you can say boy I would like to put these in the field, and then you go do the development

program and you put in the money. And do the things you normally do before you turn a system over to the fleet or whomever.

And so I think you can do both, prototype and weed out, on the other hand when you start an engineering development that's a major commitment you have to be 99 percent sure that you need the system and that you're going to complete it, and stay with it. Because if there's waste in the system, and there is. I think where it is starting major engineering developments and all the bells and whistles that go with that, and then cancelling them. And so I would agree also with the point of view of the people who say, we have 80 programs with money only for 60. I would pick the top 50, and make a reserve and do those right.

General Kern: Can I go back to your competence question about people. We've looked at, back in the Packard Commission at some of the -

Mr. Patterson: I think this goes to your point about buying reliability.

General Kern: Back to the issue of the competence of people. Everything keeps pointing to the fact that that's what's going to make a difference, rather than the whole sale organizational changes. The Packard Commission focused a lot on people and what we deemed to be the little A, the acquisition side, what about the competence of people who are

in the requirements and budgeting, and approval side. Is there an equivalent type of training in the approval type of certification that we ought to look at.

Mr. Augustine: I think there is. I think the reason so much focus and you will know this probably better than I. But so much focus on the qualifications where people in the development and manufacturing side is that, over the years and we do better today - there was a tendency to take people from line - military, classic military jobs and putting them into the development side, and they have no experience to deal with the kind of issues they would encounter. With regard to the requirements process, I think that perhaps the principle challenge we face there is that the requirements process has become so formalized and so sacred, that the requirements folks tend to be people without any particular understanding of development. And managing systems. They have great knowledge of operational needs, which is extremely important, but they tend to go off by themselves. Right now there are a set of commandments almost, and drop them in the mail to the developer I'm exaggerating to make a point. Whereas I view the requirements process as a highly iterative process where we sit down with the developer and work back and forth and do tradeoffs until you come up with a solution that solves the problem. That the requirements person was addressing but also the developer feels they can reasonably

produce and I think it takes us back to this give and take and it would be ideal if the requirements folks could have a better understanding of what's involved in the development. That might be asking too much. Because there's only a certain amount of time in a person' career. But if you can't have that, by at least having them sit at the same table, I think you could solve some of the shortcomings and experience on that side. But on the development side, the way we give people experience in companies is we put them in charge of small projects to begin with, that they're more likely to succeed at. And if they fail, the consequences aren't so disastrous. And you work them up, and it sort of becomes a career. And in the military there's a very tough challenge for being a good military officer, and being a good developer both. And we've tended to lean on the frayed pretty heavily on the focusing on spending more time on the pure military skills for people who we really want to be program managers. I come back to the fact again, that the program manager is really the heart of the system. That's the person who's got to have the experience in their staff. Now I'm reminded here, when you talk about experience and the like, what was it you're familiar with. What's it called, the experience of industry, the training with industry. In our company we had one year an officer from the Army, Navy and Air Force assigned to us and we decided to do something different with

their year with us, rather than have them move around to different organizations. We put each of them in charge of running a small R&D contract we were trying to win. And it was a program we wanted to win, or we wouldn't have been bidding it, but it was a program if we lost it wasn't going to take the company down. And each of them we made program managers and each to another service not their own service so there wouldn't be a conflict and I met with them the last day, on their tour as they were leaving the company to go back to their normal life in the military. And all three had lost in the competition, and you've never seen more bitter people in your life.

The requirement was misleading, the evaluators cheated, the statement of work was incorrect, it was unbelievable. There were three people who are going to be great assets to our system because they've seen both sides of that fence. They know what it is like to try to respond to a vague requirement. And they also know what it's like to write a requirement and if we could give more people that kind of experience even if it has to be done through simulations as opposed to the real thing, in our case we lost three programs but they were little ones. But it was one of the best investments we ever made, because somewhere out there in that system are three folks who really under.

Mr. Kozlowski: I have one more request rather than a

question. I would hope someday you would give serious consideration to writing a sequel to Augustine's Laws that would challenge the industry and the military industrial complex. We need a radical paradigm shift, revolution, call it whatever you will to break that tie. And I for one think that there are some radical things that can be done to cut unit costs. But reaching the masses, I've run across your book a 1,000 times I would like to see a positive followup to it.

Mr. Augustine: Well it's very tempting. And I just recently was updating the curve in there. I first put together in 1967 of the unit cost of air traffic, and we're getting awfully close and you know people joke about that, I have over the years more than I should have. But those are real data. That is really happening. If we don't do things differently as you suggest the laws of mathematics are going to do it for us.

Mr. Patterson: Mr. Augustine, thank you very much. Your comments and your insights have been most helpful and enlightening and if was any exceptions to what you've said it's probably that there aren't too many things above your pay grade.

[Laughter].

Mr. Augustine: Thank you very much, and good luck in what you're doing.

Mr. Patterson: If you don't mind just one thing. Is there anyone in the audience who has a quick burning question that will change the course of acquisition as we know it.

[Laughter].

I don't want to put too much pressure on you here, I've one in the back over here.

Unidentified Male Speaker: Just one sir, I didn't hear you address at least in headlines like the issue of legislative and regulatory encumbrances on the acquisition system. Do you think that is something that the system just has to accept as kind of its milieu or something radical or even hieratical that needs to be changed.

Mr. Augustine: I've been tempted to say that's above my pay grade.

[Laughter].

You know, we've lived with that for so long it's like earmarking. It's a form of dabbling in its worse form. The members of Congress I understand feel a responsibility for how money is spent. Somehow we've got to convince them that they really will get more for their money if they let the professionals do the day to day management and they act I think a little bit more like a board of directors of a corporation.

I used to keep track of what percent of the programs had directed changes in them by the Congress, and the last time I

did it, it was like 60 percent each year. I can remember a case on the Cheyenne helicopter where the committee had - it was written into the Appropriations Act that they had to certify to the solution - to the problem with the rotor, well if you take a Cheyenne rotor into Congress they wouldn't know what it was, but they have to certify it. And also there was a classic where they stated how outraged they were with the slippage of this program. Because of that they were going to reduce the budget the following year by one third. Somehow there are rational people over there too, and I think just a lot more effort has to be devoted to trying to show them specifically how damaging it is to have the Congress imposing the kind of conditions it does. Congress has an important job to do, but solving the problem with the Cheyenne isn't one of them.

Mr. Patterson: Thank you sir.

[Applause].

Mr. Patterson: We'll take about a 10 minute break.

[Recess].

Mr. Patterson: If we could reconvene and again, for those of you who know Brad Berkson, this is not Brad Berkson. On the other hand we're very pleased to have somebody who does the work to come in and tell us about the work he does. And I'm pleased to introduce you to Dr. Rich Burke, who served as the Deputy Director for Resource Analysis, in the

Office of the Secretary of Defense Program Analysis and Evaluation. Better known and PA&E. And they're the ones who become intimately involved in all your programs and know them better than you do which is vexing problem.

And he joined the Office of the Secretary of Defense in 1988 and was Director of Operations Analysis and Procurement planning Division, with the office of Program PA&E and prior to his Department of Defense Service he served in several program management positions as Sandia National Laboratory, in Albuquerque, New Mexico and he is an International Affairs Fellow on the Council of Foreign Relations, served as a scholar at Stanford University. So we're very please to have Rich with us. And with that as introduction, we'll turn it over to you.

GLOBAL MARKETS - Dr. Richard P. Burke, Deputy Director, Resource Analysis, Department of Defense.

Dr. Burke: Thank you very much. I have to start with a little bit of an apology, I am a pinch hitter right now for Brad Berkson. And that's due to a medical emergency that has come up with - for the Deputy Director and his family. I don't mind doing this, but when we get to the question and answer portion of this, I may have to defer if there are questions that are far outside my area. But I think I will be able to handle most of them, because I've touched on most of this.

I'm here to talk to you this morning about Program Analysis and Evaluation, and what the office does. And I will give you a little bit of perspective on the regulatory basis for PA&E and then I will talk about its role in both the resourcing process, and the acquisition process. Then conclude with a little bit about some of the studies that are ongoing in Program Analysis and Evaluation, and then some discussion of the challenges we see ahead.

[Slide].

These are the topics I'm going to address today, and I think I've already spoken to the - this slide.

[Slide].

The basis of PA&E right now, is DoD directive 51.41 March 1999 is the current version we're operating under. There is a revision that is sitting in the Deputy Secretary's office and about to be signed out. But essentially the Director of PA&E is the principle staff assistant and advisor to the Secretary and Deputy Secretary of Defense, and conducts independent analysis for, and provides independent advice on all DoD program and evaluation matters. It's very important - I know you are here on this panel and the distinguished panel is looking at the acquisition process and its performance. But we actually look more broadly including the manpower in the Department, equipment and of course the resources to make our forces actually come together and

occur. And so PA&E has a fairly broad perspective, but it does play an important role in the acquisition process. Our core responsibilities relate to U.S. Defense Plans, programs and budgets for executing proven strategies and policies. We do very important function, as is the second bullet. Oversight of the planning, programming and budgeting, and execution system.

I'm not going to go into a whole lot of detail on how that actually works today. Just suffice it to say the Department has used a version of this system for going on 40 years right now. I noticed there is general disdain for PPBES process, throughout government in general how ever when you get to how to replace the system and what to replace it with the room generally falls pretty silent. It actually works fairly well for an organization that is consuming and expending resources at about a $500 billion dollar a year level right now. But that is a key function of PA&E.

We do provide leadership and developing and promoting improved analytic skills, and key competencies. Tools data, and methods for analyzing National Security planning and the application of the sources. A very important role right now. I would conclude my remarks with some of the challenges we see in the Department. One of the biggest challenges we see is talent, and training people who know how to do these kinds of activities.

[Slide].

Moving to the acquisition and resourcing processes of the Department the PA&E Director sits on the Defense Acquisition Board, he is a principle, as I'm sure this panel realizes. The DAB reviews all the major Defense Acquisition programs and major automated information systems at mile stone events and the Director PA&E certainly sits on the DAB and provides supporting analysis and comments on the programs as they proceed through formal reviews.

The Director of PA&E is also responsible for preparing guidance and review of analysis of alternatives, that's a role that has evolved over the years, and began as preparing guidance a review of COEAs, and how they have evolved over the years to become AOA's. The way that's done has evolved again over the years, many more used to be done in house in the Department and now the guidance is typically published and we use a lot of Federally funded research and development to perform AOAs on PPBES system and the leadership, the Director of PA&E is responsible for preparing fiscal guidance. This involves - fiscal guidance is essentially top lined guidance to all the military departments and Defense agencies.

I would remind everybody here that people think of the Department of Defense as the big three military departments. We have on order a 30 Defense agencies that also receive

fiscal guidance, and our budget - those are Defense agencies and field activities, many of which would be quite large if they were corporations on and to themselves. I would point out to of them to you, one the Defense Health Program, consumes on the order of $30 billion dollars per year. And the second one I would point out to you would be the Defense Logistics Agency, about a $20 billion dollar area of operation. So those are fairly large Defense agencies. Remember the Department of Defense is more than just a military department. There's a lot of supporting pieces within the Department as well that are all effected under PPBES.

The Director of PA&E also oversees the DoD planning and programming activities, that involves everything from collecting issues that are proposed by the military departments for consideration in upcoming budget submissions, to sorting those issues and how they will be examined by the Department to organizing a three star review process. Organizing senior leader and reviewer meetings, where the Secretary and Deputy Secretary can brief on issues an alternatives, and documenting and circulating decisions that are made at the lower levels of the Department. And providing guidance back down to the military departments and Defense agencies on the their way forward in terms of preparing budgets and their future years Defense planning.

There's another important role in PA&E and that is the role of the Cost Analysis Improvement group, and Cost Analysis Improvement group Chairman is an advisor to the DAB. He is not a principle. He's responsible for preparing independent cost estimates in major Defense acquisition programs that are required by statute. He also is responsible for preparing independent cost assessments for senior level decision authorities in the Department of Defense and actually throughout the government.

One of the things that has occurred in the past several years, if the Department has gotten many requests from outside government agencies, to use the resources of the Cost Analysis Improvements groups. Some examples of that have been to support a massive reviews for space station.

Its more recently, the Department has been asked on several occasions to provide resources from the Cost Analysis Improvement group to support other government agencies. I think you are beginning to see other government agencies try to create such groups. Again it is difficult because of the issues that I touched on a little bit earlier for getting together a talented group to do that in the government.

It's a difficult challenge, but it is an important trend that had occurred recently. The other thing that I would say about the CAIG chairman, is there's clearly more requests than resources to do the work in that area. So there is a

prioritization that goes on where workers turned away from fairly senior level people if the resources aren't there.

[Slide].

I'm sure Mr. Augustine in the prior session touched upon history a little bit, but I would point our the six principles that form the base of the PPBS systems that have been around again for 30 or 40 years now are aware of the Department is today, and these are those principles. Kind of back to the future situation. We're actually trying to get back to basics. And I won't read all of these to you but I would say that these have been published for quite a number of years. They were in I think, if I remember correctly they were in Mr. Entoven's work of how much is enough and that's going to be republished shortly as well. But they're fairly sound corporate decision making criteria. Decisions should be based on explicit criteria nationally, and that's what the Defense Department is all about.

The requirements and cost must be considered simultaneously, that's fairly obvious to those that actually have to get things done in the Department of Defense. Major decisions should be made by choices among explicit bounds and feasible alternatives. Again, not rocket science just fairly sound management principles. The Secretary should have an active analytic staff to provide him with relevant data and unbiased perspectives.

Open and explicit analysis available to all parties must form the basis for major decisions. You see that spoken about in the Department these days, and efforts to improve transparency. There is a major push in the Department to get to single databases that are authoritative that everyone can see and put analyses on the table so that they are discussed much more openly than they have been in the past and this is not a brand new principle it is something that has been there for as I said 30 to 40 years.

It's just a various times in the Department we've gotten away from that and finally a multi year force and financial plan is required to project the consequences of present decisions into the future.

I'm happy to say the Department produces that every year, it is called the Future Years Defense Program. I think it is good news, It's required by statute, and it is delivered to the Defense Committees and the Congressional budget office. Typically in April of the year after the budget submission goes over and I'm also happy to report to you that it is consistent with the budget decision. The budget submission is in lock step, and I'm also happy to report to you that it is not a flat document anymore. It is a historical database that is fairly sophisticated, and can be minded in many ways.

So we are moving the Department forward in terms of

being able to look at resource requests and I think the good news here is we've actually made quite a bit of forward progress in having a multi year plan, that all of the services have access to and we can all look at the same set of information. And what the plan officially is.

[Slide].

Okay. With all of that as background, a little bit on some concerns we have going forward. What you have here is a chart going back to the '50s, that starts in 1951 of total DoD budget authority over time. And this ends in I think 2004. I don't see the '05 numbers in there but essentially there's a couple of points to be made with this chart, one is that DoD's top line budget authority is cyclical over time. It clearly goes up and down, it seems to be bouncing between about 300 and 500 billion constant FY06 dollars. This is measure in constant dollars. That's point one. Obviously the peaks tend to correspond to some of the well known events that have occurred in the past 50 years. Korea, in the early '50s, the Vietnam war during the '60s, the Regan build up during the '80s, and you see the Gulf war, the first Gulf war did not include a dramatic increase in DoD resources. And then the global war on terrorism. This causes us a little bit of concern as we looked over this period as long range planners, the question that strikes us is have we hit the peak about now. If we had, that means that the planning in

the future for the Department is going to take up far more resources. There's a second point we would make here and that is that the last time we peaked if we are on the verge of peaking was during the Regan years. And if you look at this chart, and carefully parse it out, the peak actually occurred in 1984 much earlier than most people realized we were even in the Regan Administration.

The point we would make there is that during the Regan build up the Department spent an awful lot of money of procurement programs. And bought an awful lot of equipment that has proven very useful during the next 20 years. This peak has been one where we spent proportionately more on development activities not as much on procurement of equipment. There's some concern about the implications of that.

[Slide].

A few things I probably need to explain on this chart. It's actually an interesting chart. The President's budget Future Year Defense Program FYDP, that's the first acronym I have to explain that's the long range planning in the Department that I spoke about earlier versus the actual Defense budgets from fiscal year 1980 through 2005. This is plotted in then year dollars. The actual budgets are in the solid line, the future year Defense plans are the colored, we call this our spaghetti chart, but that is what the plans

were versus the actuals. And there's a clear point here that I would like to make. One is that the government as a whole is not very good at projecting changes in the Defense budget. If you look at some of the key points in the curve, particularly back in the 1984 time frame for instance, the Regan years looked at the future resources that we were anticipating that never came to pass.

Similarly, in the early Bush Administration, we were pretty optimistic about where the Defense budget was headed, and the actuals went away on us. Interestingly during the Clinton years we were under projecting Defense budgets, in the future year Defense planning. The point is we're not very good as a government at anticipating the inflection points in the Defense budget. So I don't want to make you comfortable but I can tell you what the Defense budget will be two years from now, I can't. We have the plans and you can see that the FYDP there from '05 anticipates a fairly rapid increase in our baseline budget, but it is not obvious that that will come to pass. So there is concern that the picture may not be as rosy as our Future Years Defense Plan.

For example I would state one other thing, the Future Years Defense Plan is not a product that the Department of Defense produces on its own. It is prepared with strict guidance from the White House, OSD, economics teams, the out year projections. So when I point fingers at the FYDP

projections that's really the government as whole it not just the Department of Defense mis-projecting. And I would say if you pull that thread a little bit, the source of this, is some of this, is has to do with projecting government revenues, deficits, we are not very accurate about this despite the best efforts of the Treasury Department. It's very difficult to project exactly what revenue the Department will get even this year.

I remind everybody that the early projections of the deficit for fiscal year 2005 which just ended were about $420 billion dollars. The year just closed and the deficit looked like it was going to be $319 I think was the final number. That was during the year that the projections were made, and so our ability to go out is pretty limited.

[Slide].

Mr. Kozlowski: Isn't there - excuse the interruption. But I have an important point to make. Aren't the FYDP projections also a reflection of the strategic planning issues that are promulgated for the benefit of the interior consumers and to a little bit extent exterior consumers as well, so there's an economic bankers approach to this for testing, but in terms of strategy on a given day, I could say hey, it's going to be a balls to the wall effort. Or I could also say we scored that one, so we could turn down. You could have a dramatic shift. Anyway there's a strategic

implication behind all of this, it's not just numbers crunching.

Dr. Burke: I absolutely agree. And those discussions, the economic and national security side do come together at the White House, between the National Security Council and the economic advisors. But absolutely. I wanted to give you a little idea of the kind of work being done, and I've chosen three examples here. Some of these are outside of the acquisition world.

First is some work that has been done recently on military to civilian conversations. This was a complete review of the Defense medical program and the DoD Defense agencies going through manpower. The issue here was that the military departments felt that there were probably too many military personnel in these agencies. What was done here was a board was established that reviewed military billet by military billet. The essentiality of each billet whether it was military essential or not those billets were reviewed using the manpower criteria from the governmental and commercial activities act.

And as result of that laid into the future years Defense plan, is a plan to convert approximately 11,000 military billets into civilian personnel during a six year time period. That is very good news to the military departments because they can take those billets and reallocate them to

what they consider more important needs. Particularly those more directly related to operations.

A good example of a PA&E piece of work, because it has nothing to do with equipment it has to do with how agencies are operating in manpower. And manpower is a key component of everything the Department does. Including acquisition. And one of the things I'll get to at the end, is the Department needs to constantly reexamine how its operating, and get the right mix of people doing the functions that need to be performed.

The second example I would provide to you is one on the joint common missile. This is one that went to a DAB review, a couple of years ago as I remember, about two years ago. It was a DAB review for the program to - for approval to begin system development and demonstration. An awful lot of work was done by PA&E to review requirements for the military services. Requirements for the flexibility of the system and the operational capabilities and of course to develop the full life cycle cost estimates, and compare it to current positions. As a result of all that work, and it wasn't an immediate thing the appropriate kind of resource and difficulties in late '05, the decision made to terminate the effort. It's a good example of a PA&E piece of work, because the PA&E work often does not have immediate effects. But people - we pull together analytic resources from throughout

the Department, people before a lot smarter about how systems would actually be used and what the requirements are based on. And over time as the situations evolve that work gets used and folded into decisions.

The third piece of work I would point to is the mobility capability study. This is the 2005 version of that, and that is a complete end to end review of all DoD mobility requirements and capabilities. It's an end to end assessment. It uses work done on the capability studies. It is based upon the Department's strategy, and it has formed an awful lot of very good conversation between operational people in the Department, TRANSCOM, and the COCOM about how the Department would deal with the various contingencies we happen to deal with around the world. I am not going to talk today about major contingency operations, just turn on the tv on any given day and you will see our mobility capability almost everyday now, with respect to hurricane relief.

This capability is being called on more and more throughout the world. And the good news is I think the Department's analysis now recognizes that much more. The outcome of this study is really going to influence some QDR decisions, the most obvious one is C-17, but there are other decisions as well on procuring additional systems.

[Slide].

This is a list of ongoing analyses in PA&E. I'm not

going to walk through the entire list, but it does give you an idea of the breadth of issue that are under consideration. The first three are directly related to ground and air forces. You see we have a large review of the medical community underway that will - I will tell you the medical community has done an outstanding job in ongoing operations. In Afghanistan and Iraq of transforming itself and operating in a completely different way than it was originally designed to operate. And there is a review to make sure we restructure the medical community to take advantage of some of the lessons they've learned. There's a compensation review underway looking at the entire military compensation package, and whether it makes sense in today's world when you're trying to attract 18 year olds to enter the Department of Defense and the military services.

Supply chain management. Again these are very broad topic areas that try to bring together the manpower, equipment resources to put together the DoD forces. I would make one other point on this list of studies, many of these will rebound prior to the fiscal year '07 budget submission to inform this QDR, some of them will go on into '08.

Particularly some of the studies on persistent ISR requirements, aerial refueling, supply chain and some of these multi year efforts.

[Slide].

Those of you who are familiar with the Department know that every year we do a program and budget review to - we're now integrated. This year for the preparation of the fiscal year '07, President's budget we have formed 8 issue teams to look at issues that were raised by the military departments and Defense agencies for the Combatant Commanders and their organizations out in the field. This is a list of those teams that are currently under way. They will complete their activities prior to early to mid November, and should brief out at the Secretary of Defense level prior to late November or early December.

So these teams are under way as we speak, examining issues that were proposed from the various elements of the Department. There's one, just for purposes of clarity that last bullet there DMSO is the Defense Modeling Simulation office. There's an issue team that has been formed to look at their future.

[Slide].

I wanted to close a little bit with some discussion of what we see as our biggest challenges going forward. It is a $500 million dollar a year enterprise roughly getting facts and transparency on the table for the serious discussions is difficult, automated data systems help you in some cases. But obviously if you could sit at your computer and gather all this information it wouldn't be much of a challenge. And

we find it very difficult to get the facts and transparency on the table, so that we can have discussions. Difficult sometimes, and emotional sometimes. But we ought to have the discussion. And PA&E is really trying to turn itself into an organization that tries to get the facts and transparencies on the table. We try not to be advocating positions. And those of you who may have worked with me in the Department know that you're not going to hurt my feelings if you don't take our cost estimates or advice. The Secretary, and Deputy Secretary are more than able to say, great I understand I'm going to do something else, and that's the way it goes. The purpose of this is really to run a decision making process, that we get the information on the table for people to make decisions who are really informed of the decisions at the highest levels of the Department. Ironically when it's done well you enable some of the best conversations that I've seen between the Combatant Commanders of various organizations throughout the Department about how they would actually operate together under various scenarios where the Department gets stressed. And so it's a very powerful process when executed well, but it is not easy to execute this link to strategy, plans and resources for the Department and finally to execution.

Execution is very difficult, we can plan and request funds from the Congress, but tracking execution is very

difficult for the Department of Defense. A lot of money is spent to try to improve that capability. We're gradually moving in the direction where we can do that, but it's a long term issue and we're making slow progress.

I would also say the link to strategy is very difficult these days. It's not as easy as it was during the cold war, our strategies are not as static, and the calculus, the mathematics, the assumptions aren't constant. They're just not. We're trying and I know the acquisition have probably heard this on this panel. We're trying to raise the decision level to be one, decisions based on capabilities, capabilities we may face in the future from our adversaries, and we're trying to raise the discussion to a portfolio level rather than just talking program by program which has been the historical norm in the acquisition world. We're trying to move the discussion forward about requirements, operational flexibility and other ways to do the mission so that we're continuously looking at portfolios for capabilities. I think the JCM was a good example where the Department tried to actually look at other ways, we looked at what is out there now, and how it could be better. And finally the last point, and it really is a key point, I think it's true in the acquisition community as well, our biggest challenge in PA&E, I can easily say it's true in all of the office of the Secretary is developing a lining and motivating

young talent.

We've been rather fortunate in our organization, we've spent a lot of effort in recruiting people and I can't say that for the entire Department. Particularly on the civilian side, it's a very difficult challenge to keep organizations staffed with very bright people because these are intellectually challenging issues, there's no question about it, and that is what we offer to our young people is the ability to move very large organizations with very good intellectual work. Obviously we're not attracting people right now with pay, and we're not attracting people with wonderful working conditions and easy hours, but that is where PA&E is and I'm happy to say we're doing a pretty good job of staying staffed with motivated talent.

In the acquisition world they need to consider where it is as much of the Department has been doing, they've been going through Defense agencies. Actually part of the Defense agency manpower review process has opened up some interesting dialogues with the heads of agencies about how they would like to change their agencies. But the way to do that this talent issue continually comes up and how they actually change the workforce because that doesn't happen over night. Many areas we found were operating with position that hadn't been filled in many years, and so it is the challenge of the Department. And I will close with that. And I think I've

used up most of my time too.

Mr. Patterson: You're not going to get away without questions. We're very flexible here, we can move time around. So I will open up to the panel.

Dr. A'Hearn: Yes sir, your third challenge you spoke about requirements and a portfolio, and capabilities. I would tie that to one of the six founding principles of PBBS, about cost and requirements must be considered simultaneously. So should PA&E have to have a seat at the J-ROC would that bring added benefits?

Dr. Burke: A formal seat?

Dr. A'Hearn: A role in the requirements process at the very front end.

Dr. Burke: One of the healthy things I've seen in the Department is more involvement at bot the PA&E, and the Under Secretary of Defense Acquisition and Technology and Logistics in the front end of the process. Whether that's a formal seat at the table or sitting in the meetings. I think that's a very healthy thing. I think there is recognition that if the requirements aren't done well up front, you're headed for problems. And some valuable input provided up front can lead to a much more positive outcome in the acquisition process.

Dr. Abbott: Many critics of the acquisition system have suggested that both government and the contractors suffer from the over optimism relative to costs, particularly at the

beginning of a program. How would you address that issue if you were king for the day.

Dr. Burke: Unfortunately I occasionally get to be king on that issue and it is a difficult issue but let me tell you how the Department of Defense approaches this problem, or should approach this problem. And that is that the Department of Defense for 30 years and this goes back to - let me do a little bit of background and educate everyone.

The cost analysis improvement group was actually an invention of David Packard. Back in the early 70s, when he was Deputy Secretary of Defense, and the Department of Defense had horrible cost estimates, not bad cost estimates, but horrible cost estimates at the time. And there is a history of a CAIG that has been published that people refer to if they want to get the whole story. He recognized there was need to do something dramatically different. At that time the Department set up a system, between the CAIG and the military departments which relies on collecting actual cost performance on all programs.

And the short version of the history is during the acquisition reform, in the 90s, we didn't focus as much on collecting actual costs for the programs. We have re-instituted over the past decade which has meant a lot of effort and the Under Secretary of Defense for ATL has been very supportive of re-instituting that, after all if you

don't collect actual performance versus estimates, you're kind of kidding yourself.

So we have made a significant effort to improve that, and I'm happy to say Mr. Wynne in his prior role and Mr. Aldridge in his prior role, all recognize the need to do this once you have those actuals. Your best estimates going forward are based on rigorous looks at history and how well we have been able to do to perform in the past and then the judgement about whether we're going to do better or worse in the future. There are reasons you may do worse in the future than you have done historically, i.e., the industrial base is not in the same shape and not equipped as well it was in certain commodity sectors. You really can't do better than that. The power of the DoD, the military departments also have access to things. The power of the cost analysis is because of David Packard's foresight, we now have 30 years of actuals. So we can go back in our database and say what did it take us to do SR-71, how many hours, we are building that.

The data we collect right now isn't very useful to me. But it will be to my successors, because they will see actual programs and report on costs, schedule, unfavorable outcomes, and favorable outcomes. And that's the best way to do it. You have to rely on history and then you can have a reasoned argument about are we going to do better or worse, and why. If you don't have that historical data to start, which many

government agencies have not collected in a systematic way you are nowhere. That is the basis for why many of the government agencies have been asking for help from the Department of Defense, is because we had that kind of information.

Mr. Kozlowski: How would you describe the role of PA&E in the overall budgeting process, and I put this in the context of, well first let me just happen to ask who owns the budget in the Pentagon? And by that question what I mean is when it comes down to a program manager given responsibility to execute he should have control of the requirements, the budget, the whole ball of wax, otherwise he's not in charge. And as we know the budget gets changed, requirements change, et cetera by external forces. And I have asked a question who on an annual cycle, who do you go too to get budget and it often has been cited, well PA&E is the referee, and then some people say no, and I can't find out who owns the dollars.

Dr. Burke: I think that's actually an easy question. The fiduciary responsibility resides with the comptroller for the budget request, and the execution.

Mr. Kozlowski: For the whole package I go along with that.

Dr. Burke: When you get into execution of programs that is, programs coming back from the hill funds appropriated it

is in that chain that the comptrollers chain at the OSD level and then down into military departments and they all have budget analysis that tracks execution. And so it is on that side of the fence, we obviously at our level do not run programs. And the PA&E likes to stay out of that business because we tend to want to focus more at the strategic level and the long range plan.

Mr. Kozlowski: Let me preempt you here, suppose there's a disconnect in the budget, i.e. The number from last year don't jive, they're out of sync, we have a five or 10 percent disconnect. Who is that says everybody is going to take a 7.2 percent cut in order to accommodate this. Who is it that decides I'm going to fund this program as opposed to that program so everybody takes a 1.2 percent hit in funding. Who makes those transient hiccups?

Dr. Burke: The short answer is it that it starts in the military, the decision on that starts in the military departments who are executing the program. And they obviously get the first cut at corporate decision making that they would propose. It does come up through OSD depending whether it's a long term cut we're proposing, or a short term cut that would come up through the programming side, the PA&E may get involved if the military departments proposed cutting programs at a very important high interest in the long term. Or if it is a one year kind of adjustment, adjusting the

budget year, it would probably go up through the comptroller chain.

Mr. Patterson: Rich, originally when you had PBBS, you had a program review and the Defense, the DRB Defense Resource Board, the program review group was chaired by PA&E. So how much responsibility has PA&E retained for managing the process by which programs are determined to be executable, non-executable and prioritizing those programs?

Dr. Burke: Mr. Patterson, I think you refer back to the program review group, and the Defense Resources Board. I don't see all that much of a substantive change in moving from the program review group to what is now used in the Department as the star programming group.

Actually my observation would be a three star programming group is probably working a little better than the PRG, it has slightly elevated the level of the attendees, they are a little bit more senior and a little bit more serious discussion going on than in the PRG. Similarly on the Defense Resources board side, the SLRGs have replaced that. And again it is not obvious to me that there's been a huge substantive change, some of this may be inside baseball, but you have to realize that when you modified the PBBS system and tailor it to each agency and how they wish to operate in the Department, so that is the change that has been made.

I haven't seen dramatic indications that it's really changed for those groups at all.

Ms. Stokely: The last time I worked with you on this, we were trying to develop a methodology to establish the probability of success estimates. And then we would have a reasoned discussion among the constituency in the Department and Service, at what level of success to fund our major programs, and I was wondering could you status us on the process of that methodology.

By the way we've had a lot of industry talk about whether they would be at 20/80 success rate, 50/50 success rate whatever. And we always wanted to link those probability of success on bids to probability of success of the program in our estimates so, if you would talk to that that would be good for the panel I think.

Dr. Burke: Yeah, and I will tell you that as you probably know Judy, there is a cost analysis symposium the Department runs every year and a few years ago we invited Mr. Sugar who runs one of our Defense contractors and he spoke to this directly and basically he said if you folks are using our bids in your budgeting process you are nuts. Don't use those for that. Use our competitive conditions, they're not really useful for planning programs, so I would suggest maybe the panel might want to get some of the Senior Executives of Corporations to speak about that.

Mr. Kozlowski: We have, and they agree.

Ms. Stokely: That's been consistent. You were trying though to build a methodology, so you could count your estimates in terms of probability of success or competence.

Dr. Burke: Let me just say a word or two about that. What tends to drive bad estimates, or low estimates are combinations of assumptions. What we have always argued that we've been trying to do, is essentially get our estimates to the point where we're equally likely to have an overrun, or under run. We've been trying to achieve that, because if we move to a higher confidence level at the corporate comptroller level, you're actually - it is not a good thing. The Department has X amount of resources in a given year to fund, allocate, to a broad variety of programs and if you used all acquisition programs to such a high confidence level you would drive more programs out of the Defense budget, so no comptroller will say, I'm going to be willing to fund at the 90 percent confidence level. So what they're going to want to do is fund some at the level that the program essentially could overrun or under run. And would work out. So they can move forward. My view has been that we've been using the confidence level discussion to mask bad assumptions. Of really trying to get the best assumptions the Department can make on the table. And then get our estimates to be at the 50/50 level. We are having

discussions where people are showing much, how many more resources you would have to add to get to a much higher confidence level.

But, I think I would just say this that particularly on programs that involve large amounts of money the distributions are not going to be at all. They're skewed very heavily to the right. And that tends to be driven by scheduled. That tends to slide the distributions and scheduled outcomes are to the right. And so if you want to move up in confidence you have to add a lot risk. And granted, not at the 15 percent level. There aren't many programs that I could point to. But, there are a few. They are non zero. And one them, I think was actually in your area.

I consider that a success actually. I would like to see the Department occasionally have estimates to high.

Mr. Patterson: Rich, thank you very much. And if you're the pinch hitter, then we have great confidence of the rest of the team. You've done a terrific job. We appreciate your candor. And we appreciate the time you've taken to come and talk about PA&E, and help us out. And we really appreciate it. And thank you very much.

Mr. Burke: Thank you.

[Applause].

Mr. Patterson: Let's take five minutes. And then we'll

have our next speaker.

[Recess].

Mr. Patterson: If we could take our seats, please and get started. One of the areas that we have been looking at as a panel, is the effect of globalization on the overall acquisition issues. And this afternoon - or this morning we have with us Matthew Borman. And he currently serves as the Deputy Assistant Secretary of Commerce for Export Administration. And is responsible for implementing the Bureau of Industry and Securities controls on the export of dual use items for national security.

We're extremely pleased that you would take time to come over from your job and help us with ours. And, so with that as an introduction, Matthew please take the microphone. It's over to you.

THE IMPACTS OF GLOBAL MARKETS on ECONOMIC SECURITY - Mr. Matthew s. Borman, Deputy Assistant Secretary, Bureau of Industry and Security, Department of Commerce.

Mr. Borman: Thank you very much. And it's a pleasure to be here. I was interested to hear a little bit of the previous discussion. And of course the first question that came to my mind is what is PA&E? In our world of course we also have many acronyms we use. As first blush folks might think well acquisition reform, export controls what do the two have to do with each other?

What I thought I would do this morning is talk a little bit, very briefly about the current structure in the U.S. Government for export controls. And then talk a little bit about the implications of that system and how it works on the acquisition side. And maybe try to use a couple of - well specific examples that hopefully highlight that for your consideration.

When we talk about export controls in the United States, of course we're talking about the U.S. Government's authority to control the export of either munitions items, arms, or dual use items. Which are items that have civilian input for application from the United States. To make sure that they don't go to people - to terrorist groups that can do things with them that we don't want them to do. It is also important to remember that in that world, this also covers the transfer of technology - control technology to foreign nationals in the United States. Either in U.S. companies, or in research labs, or in some cases even at the institutions.

One thing to keep in mind is exports are not only those things that leave the country. But, it's also transfer of control technology to nationals in the United States. And that has some ramifications for the industrial base. And certainly in the acquisition setting. As many of you may already know, ITAR is a set of regulations that covers the

export of so called, munitions items. Items on the United States munitions list. And that process is owned by the Department of State. Then the only thing that is on that list is essentially needs a license to be exported from the United States, and goes along in conjunction with the Defense Department. We, Commerce play only a minimal role in that. For the dual use items, items export to our export regulations, if there's a license required they come - people come to us for a license. We under Executive Order, then refer it to Defense and Energy for their recommendations. Then we have a process for working out and disagreements.

We also have out process to be sure of what should be coordinated with the Department of Defense. Whether the threshold issue for any exporter is really, do I have to go to State or Commerce for an export license? Who's jurisdiction am I in? And this has very significant ramifications for exporters. The reason being, that if an item is subject to the ITAR, generally speaking it needs a license to go anywhere in the world. And the related technology, we need a license to go to any foreign national in the United States.

And, in addition to that, the State Department employs what is called the - on the short hand the C4. So, if you have an end product, like a civilian airliner for example. And it has a minuscule part, that is on the munitions list

the export or re-export of that aircraft anywhere in the world, at any time needs a State munitions license. So, for example if you have a Boeing 737, that may have a component that's related to munitions. When it leaves the United States it needs a State license. If it's already in a foreign country, then that needs a State license. So, that can have very significant commercial ramifications.

On the Commerce side, generally speaking we use this so called end product rule. Which means we don't look at the classification of the items in the end product. We just look at the classification of the end product. So, our systems with a civilian airliner - we don't look at every component. We just say it's a civilian airliner. And essentially needs a license.

There's a process called the Product Jurisdiction Process, whereby Commerce, State, and Defense try to determine for any particular product who's jurisdiction it is in. And there's a set of criteria in the international traffic and arms regulations, that essentially says that if an item it specifically designed for military application, does not have predominant civilian use, and does not have a civilian equivalent, then that item should be on the ITAR. And this is critical for a company to know through the CJ process. On the State list - or is it on the Commerce list, or the State list? Now, let me lay out that frame work very

quickly. One other thing, if an item is on the munitions list and the policy determination is made to move it from the munitions list. There's a congressional notification period involved under the Arms Control Act. Just like for an arms sale.

Now, let me turn after giving that brief overview of the system to this potential impact on acquisitions. Certainly when a company is developing a product they are best advised to have the system in mind ahead of time. Because if it turns out that their initial development of the product is for military application, there is a presumption that it will be on the U.S. list. Even if later in the development and end use of that product it turns out there's a significant commercial use. So, that's a hurtle that needs to be overcome. In the old days, if you will, when there was a lot more acquisition based on military specifications, this process was much easier. Because it was easy to say, okay, this particular widget was designed for a particular plane. The Mil spec, it's easy.

But, now of course 15 or 20 years, I guess depending upon how heavily you're into trying to buy commercial, off the shelf items. There's much more uncertainty. And frankly I say our current system doesn't fully take that into account. Because I see a lot of these individual commodity jurisdictions. And the vast majority of them revolve around

this issue, what was it designed for? What is it being used for now? Even if it was designed for civilian application originally. And the Defense Departments using a UAV, or fighter aircraft, or a tank. Doesn't that mean it should be out and for the company. This is very significant. Because obviously many companies rely heavily upon their ability to see commercial products abroad. And that revenue comes back into their research and development stream, and their production stream. Either for the same items for the military or other items for the military.

And the two concrete examples that I can highlight to some extent are then QRS-11 a few years ago which was widely publicized. And what's going on now with night vision and thermal imaging. The QRS-11 incident was heavily publicized. There was a sensor, and there was one version of it that was on a missile. After the company developed it they realized there was a significant commercial use if they revised it. And they did that. And it had very widespread applications. And they backed up aviation unit. And thousands of civilian airliners worldwide, Boeing's, Airbus's, Bombardier worldwide three years ago people realized that this was a mutilations item, and so unless that was changed, all of a sudden you had these 1000's of civilian airliners worldwide that were subject to the ITAR. And they needed a license, not only to leave the United States, but if they were already aboard to

leave one foreign country to another.

So, this was clearly a very difficult situation for the civil aerospace industry. We worked through a solution - or kind of a temporary solution, if you will for this issue. But, the consequence that we're trying to access now is on the U.S. company. Because certainly their foreign customers who were buying this QRS-11, the civilian version. Are now looking very heavily and very hard at how to design that out. And to the extend that that effects that companies to produce the military version of that item. That has, I think significant potential acquisition ramifications. Because, again no matter how big the Defense budget is, for most companies the revenue stream is primarily going to be from commercial sales. And that effects their ability to do Defense work.

So, that is always a very significant ramification. The other one, of course is that there's generally for and availability - there's very few on the commercial side, very few items of technologies that are only made in the United States anymore. Which is different from when the export control system was first constructed 30 or 40 years ago. Current in the area of night vision and thermal imaging devices, we have a somewhat similar situation. Ten or 15 years ago the market for these things was overwhelmingly military. But, since then there's been a skyrocketing in the

commercial uses. Fire fighter, search and rescue, all sorts of maintenance. There is kinds of research the Defense Department is taken the position that these really need a license to off from the United States for commercial versions any where in the world. So, for example last year we did several thousand licenses for these items. The vast majority of which were to Western Europe. The Defense Department's view was if a terrorist doesn't have any night vision capability, them getting some through a fire fighting device is a threat to our security. Even though it's not what our troops are using.

But, what we've also seen is a steady erosion in U.S. companies of the market for thermal imaging devices. And again, there's a lot of overlap between the companies that do commercial products and do military products. And this is a hard thing to measure. Unfortunately, you often don't know it until it has already happened, and it's to late. But we really need to look at what impact it has on the ability of the companies, not only to survive economically and provide jobs and so on. But, to be available as part of the defense industrial base. So, that's an issue we can continue to try to work through in the administration.

So, I guess in conclusion I would say that as I started off with - export controls don't have much to do. But, certainly the decisions made on the export controlled things,

what kind of things you can control period. And who's jurisdiction they should be under. And where should we allow them to go? And what kind of restrictions should we put on them? And those can have ramifications in certain industrial sectors. So, that's really what I wanted to say. I'd be happy to try to answer questions that you folks might have.

Dr. Abbott: To what extent does the availability of the technology - a similar technology, or like technology other places in the world temper the decision to allow the U.S. company to export?

Mr. Borman: As a practical matter when were at the level of an individual transaction, a license application that often makes a big difference. And certainly that is something that is something that many agencies - Defense and Commerce take into account. Where it's a little bit harder to come up with a definitive answer on that, is levels of control. Now some areas, like computers that's clearly been the case for the last 10 or 15 years. Our definition of a high performance computer - a super computer has gone from 500 MCAP's to now 190,000 MCAP's. But in other areas, such as thermal imagine it hasn't made much of an impact. It's clear in the night vision areas there are Chinese companies now selling into the U.S. market, not only taking away foreign market share, but taking away domestic market share. And that is something that in theory there's a process of

dealing with foreign availability in our Statute. But, as a practical matter nobody avails themselves of it. And that's one of the things that I think the companies can do a better job taking a step back beyond the individual license applications. Because, those are just individual transactions.

So, the short answer is there's a way to do it. We probably don't do it as much as we should.

Mr. Patterson: Just a quick one. It kind of goes along with what you just said, that there kind of a do loop here that says something along the lines of, well if not us, then others. If other's, why not us? And what we find too is that there is a terrific, chilling affect on the vendor base. When they want to be part of a military program. But, realize that when there part goes into a military object they then come under scrutiny of not only Commerce, but State and our own regulatory encumbrances. Is there any way that you see coming down the pike to make exception for these kinds of folks? To give them hope. The fact is they just don't enter the market.

Mr. Borman: Well one is that I think, and maybe that will be something that comes out of your work. Is that certainly at a minimum it would be to try and measure that or access that in someway. What is our lost opportunity, if you will for people who decide I just don't want to participate

in the system. Even though they may have something very valuable to offer.

The second thing is that I would have to say that the State Department system is really focused on national security and foreign policy. And they don't necessarily look to take into account economic factors, and rightly so. They say, look at national security. The desire to sell something should override that. But, I think that this whole element, the element that you raised right now, is not part of the equation on that side. And that may be in part because of what State sees as their mission, and it may be also be in part what Defense plays in that. The individual internal units in Defense play in that are primary interlocutor on the Assisted Defense Security Administration.

My experience is that ATL plays a far lesser role. But, that would be another way to get at this. With respect to the internal discussion and our system. Because we control so many items that are in the U.S. economy, very few personally speaking of items that are subject to our regulations actually need a license to go anywhere in the world to most places. We issued this year about 16,000 licenses, and that's by dollar value roughly about one percent of all U.S. exports. That's another way to educate the smaller companies and vendors. To say, just because you participate and you're in the melee doesn't necessarily mean

you would be subject to restrictions.

We've made a major effort over the last year to go out to the airspace industry and get people sensitized to classify their products and understand what the ramifications of that are. In some cases, so you're right. In other cases, to make them less scared, if you will.

One other thought on this, several years ago we made a major decision on how to deal with controls on high end general microprocessors and the decision in the Administration was the Defense Department thought the criteria for controlling them should be changed. And the rational was that these were now being used to upgrade flight panels in Apache helicopters and fighter aircraft. And so, they were concerned about that the control wasn't stringent enough. But, after I think a good analytical process it became clear that that was such a minuscule part of the semiconductor companies market, that to go to that would really make it much more difficult for those companies to compete internationally.

So, we came up with a construct that served the purpose of making sure that the companies that might try to acquire these to operate their own weapons systems could do so. Or could do so without pain and effort. But, that still allowed the U.S. companies to compete and stay a head of the competition on the commercial side. The market was

overwhelmingly commercial. But, that is where the position came down, it has the potential to create more uncertainty for U.S. companies in deciding whether they want to bid on projects or develop projects.

Dr. Brandt: I actually was going to follow up on, Jerry, you first question and the other questions that have come. This is a tremendously complex process, involving three tremendously complex departments. And Jerry had asked, actually the question I wanted to ask about other alternative available commercial processes or products availability. And you had said well, we have that criteria but we don't choose it that often. And I guess that leads to the question of, I realize that the State Department owns a portion of this, you own a portion of this. Defense plays in both portions of this. How well do the three agencies work together? Who mediates when there's any impasse? And how are those criteria established, if in deed there are criteria which talk about the alternative commercial availability. And why aren't they used more in that kind of a situation?

Mr. Borman: Let me start with the latter. Then come back to the preliminary question. For example in our statute the Export Administration Act, there is a statutory right for any member of the public - exporter to file a foreign availability petition by product. They can say this country, this country, this country. The branch of the burden is on

the Licensee Board, and yes they have that right. Now, we the government could, of course initiate that ourselves as well.

In some respects it's not as easy as it might seem to actually get industry to give you enough data to really make that concrete case. Another variable is that we have these multilateral export control regimes. And, so in theory all the member are more or less agree these items should be controlled. And we'll all control that process the same. But, in practice our system of control is much more extensive. And there - even though they're controlled the companies often come and say, look I'm trying to sell this item to China, and it's taken you guys four months, or five or six months to make a decision. And the Japanese take 30 days or less to make a decision.

So, they're going to go to the Japanese supplier. So, that is something to some extent is a matter of emphasis in a particular administration in the Executive Branch how much do they want to really focus on this?

Dr. Brandt: If you had to identify the emphases now where would it be, in terms of the administration? You said it's a question about the system -

Mr. Borman: Well, in part it's timing. Because Commerce, State, and Defense all have essentially new political teams. And so, that remains to be seen. Sort of

what people will emphasize, but certainly this kind of issue we're going to fly up for our Secretary, who just came in. Say, this is certainly something we would propose. And, of course they have their own agendas. But, we will try and raise that up in terms of interagency interaction. Generally speaking it's good. When there are friction points, for example on license application there's a process, a formal process laid out in the Executive Order that escalates through the political levels all the way up to the President. And I think that actually works well. Where it's harder is when your talking about policy. Is what policies - what items should be controlled, what items de-controlled? Because there's no formal mechanism now. NSC ultimately is arbitrator. What happens if we think something should happen other agencies don't or vice versa. They go to the NSC, and please review this.

But, people have to - again it is sort of self initiation almost. The process is available, but the agencies have to take the initiative and say this is a big enough issue, and here's the approval. A lot of it also is - depends on what industry does. For example in computers, they've been very successful in putting their position forward for several administrations. Is why we need to renew the license, because of market share. For thermal imaging they were not as successful.

Dr. Brandt: And actually the real question is where is the policy now. And the answer is -

Mr. Borman: That's right. In part because we have different teams. Now that microprocessor example that actually went to the President. That decision had to go all the way up. But, you are right. That's why I think, as you were saying your ultimate report deals with this issue that would be very helpful. The second half of this administration will be coming in and looking at this.

Mr. Kozlowski: Why did that decision have to go to the President? Did Commerce have a position, and industry was objecting to it?

Mr. Borman: No. Commerce and State had a position which was different than Defense's position.

Mr. Kozlowski: So, it was decided between the departments?

Mr. Borman: That's right. Institutionally, our role is to represent industries interest. But, we try to make sure at
Commerce that it is a well founded interest. Our job is not simply to take whatever industry says and pass it forward.

Mr. Kozlowski: But, it's in the government.

Mr. Borman: That's right.

Ms. Giglio: And that particularly explains the role of the Defense Department since Commerce and State are the only

departments authorized to issue licenses. DoD's role is only to review and advise.

Mr. Borman: Yes. Although, in our system under the Executive Order they make recommendations in many agencies disagree. That puts it into this escalation process on the State side. There's no formal mechanism. If State and Defense disagree on an item. And outside Defense is about 25 percent of it, 75 percent is State.

Dr. Abbott: One of the standard comments, from particularly European defense industrial base. Is our restrictions on third party transfer are so onerous that when we have a technology, and the Europeans would like to buy from us. And third party requirements make it an unattractive purchase, forcing them to develop the technological base that they otherwise would not have developed if they could simply buy or license. Have you seen in your work evidence to support the allegations that I've just described?

Mr. Borman: Well, certainly. I think on the dual use side, the example that I gave about the Chinese being in the night vision market. That is a preeminent one. There is a focal plane array and it sort of was emerging technology over the last few years. A wide commercial market, and relatively few suppliers of that. One who happens to be in France. The French company sold it to the Chinese. And the Chinese have

a very sophisticated process now. And there are probably other examples that I think I think one of the areas that we could do better on is having the ability to take a step back and identify those in a more systematic way. And not just of a sore of anecdotal way.

Mr. Patterson: Matt, thank you very much.

Mr. Borman: My pleasure.

Mr. Patterson: We appreciate your coming.

Mr. Borman: One other thing you folks should be aware of. Another function that we have in our bureau is defense industrial base related. So, we do a lot of industry specific surveys. Usually on behalf of the services. And we also have the Defense Allocation System, I don't know if that is also part of the calculus here. If that plays a role on the acquisition side? The ability to say you need to do this before you do that for the private companies.

Mr. Patterson: It is important. Because we look to you as the advocate for the industrial base where it bumps into Defense. Well thank you very much.

Mr. Borman: You're welcome.

[Applause].

Mr. Patterson: We are adjourned. Our open session is officially closed. And I appreciate all you attending. It's been very helpful to have you in the room, so that you can then take back to your constituencies, that yes indeed they

are about America's work. Or at least that you will understand better what we're doing. And that's our purpose. To be open and transparent. Thank you very much.

[Whereupon at 11:45 a.m. the committee was adjourned].