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PANEL 2: ACQUISITION AND LOGISTICS:

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"A National Level Vision Needed for the Defense Sustainment Industrial Base"
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"Rapid Acquisition"
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P R O C E E D I N G S

MR. MURADIAN: Thanks very, very much, Peter. It's always a treat being here. Thanks for the invitation. And as well I think we're going to have a very, very interesting panel at a time when -- acquisition and industrial base issues are always, you know, what is it, 130 reports have been written on the need for acquisition reform. Last year we obviously had the Levin-McCain legislation to try to focus on the problem. Every administration says it's a major issue, but invariably, you know, the progress made sometimes is a little bit slower, I think, than everybody would like to see.

As far as industrial base issues, I think the current tanker competition is one of those things that casts into the forefront questions of protectionism, questions of national industrial capability, national interest jobs, politics, foreign policy; all are at the nexus of, actually, industrial policy and industrial affairs.

I think it's, you know, my personal view is that it's something that we don't try to take or look at as seriously as part of an integrated organism that's a US industrial base that's heavily dependent on global sources of supply.

One of our speakers, Tom Miller, today is going to be talking to us a little bit about this idea of whether or not we need, you know, sort of a bigger way of looking at the problem.

And I find it fascinating that, you know, you also get confronted with rather simplistic arguments: Well, strategies don't work and you shouldn't do that.

Well, I think it's pretty clear that a completely laissez faire approach doesn't necessarily work all that well either because then you sort of wake up and you go, well, hey, now, wait a minute. So, what are my sources of supply? Where does my equipment come from? How secure are those sources?

Another equally major piece is sort of transformation during wartime. Every

war creates with it the need for new equipment. In World War II we had a tendency of developing very, very, very big new equipment, very, very, very quickly, whether it was P-51 Mustangs or B-20 Bombers or developing new classes of ships. Or, you know, actually in a completely clandestine fashion, developing an atom bomb that was drawing something like 25 percent of the nation's gross industrial power consumption. So. And we managed to keep that quiet. I find that -- well, except from the Russians, of course. I mean, they knew exactly what was going on. But anyway, you get my point.

So without further ado, I'd like to turn the podium over to Tom, who is going to be talking for 12 minutes exactly before I have to bum rush him off. His comments will then be followed by Tim, and then we'll go to Shahnaz, who will interrogate them. And I will sort of sit up here and listen with a thoughtful expression on my face. Thank you.

LTC. MILLER: Thank you.

So at the risk of making anybody choke on their lunch, I'll just give you the -- quickly, when I decided on the topic to look at this year, I mean, really, the gambit was there. Brookings really gave me the flexibility to look at anything I wanted. And defense industrial base is not something that is routinely looked at, at Brookings. But they opened it -- they opened the door and said go forth and look at it.

Really, this turned into kind of a primer of the paper I worked on for officers, civil servants that are going to go to either their service staff, OSD, the Joint Staff. Because when I was in that position, and I just came from that position, I found myself needing to have a lot more depth in the knowledge about the stakeholders in the defense industrial base, and the public-private mix and the argument that goes there, which wraps back to the stakeholders. And really, what's the future. And what's the future in a post-OIF/OEF environment.

In kind of articulating the defense industrial base, it is a huge enterprise.

That's an understatement. But it helps to think about, maybe, a manufacturing industrial base that builds a new weapon system, which gets most of the attention, frankly. And maybe a sustainment industrial base, realizing that a company can be in both. It can obviously provide to both. But it does help to think about a sustainment piece for weapon systems that are already fielded and are not grabbing the headlines like the JSF or another brand new weapon system that's in the headlines all the time.

So if we look at that sustainment industrial base, why would that be important now? Arguably -- well, not very arguably, the future of the defense budget, there's not going to be large acquisition programs except for a few. And of those acquisition programs, they come in, typically, they're lower numbers of weapon systems that are purchased, more reliability, and we keep them longer. So there's going to be a smaller pool of end items to work on, to maintain, and to sell to the government.

At the same time, the weapon systems we have now we're going to keep longer. You know, I could list them, I could list any one of them, and all of you know all the cases from the tanker to anything else, we're keeping weapon systems far beyond their original lifecycles. And often the company that built most of those weapon systems has long gone. There either was the merger of the, you know, after the last supper in the '90s. That's pretty well known. But the sub-tier below the, I built a plane, ship, or tank level, those ebb and flow as well. And determining what an American company is, is pretty difficult these days.

So when I went through my research I was looking for a place that really would discuss, you know, trying to look at the broad -- the entire sustainment animal was too big. So I picked out the depot-level maintenance piece because I had seen less articulation there than I thought was necessary before. And as I dug into that, legislation always comes into play.

I mean, if you think -- not to go through all of them, but there's two big ones to think about. One is called core. It's in Title 10. It's that the Services have to retain core logistics capability to meet JCS scenarios. That sounds pretty simple, but it's not nearly as straightforward to calculate that as you might think. That's done through hours. The Services calculate those hours and they figure, I need this many hours to sustain, you know, to be able to fulfill that JCS scenario. So that's hours.

There's another statutory requirement, often referred to as 50-50, which 50-50 is the ratio of the defense -- of the depot-level maintenance funding provided by the Congress. Not more than 50 percent of it can be used for contractor repair for depot-level maintenance. Now, it's 50-50 now. It used to be 70-30, then it went to 60-40, and it's been 50-50 since 1997. So -- which was largely a result of after the Cold War, the United States military was looking for a way to retain capability with a declining force structuring, and going to industry for a lot of the things it had done organically in the past was one way to do that.

There's many more aspects to look at. If you're interested in this subject I would really encourage you to look -- to watch for an NDAA-required study that LMI is doing for the Congress, which is really a soup to nuts look at this subject, which will start to come out as soon as October.

When we talk about Congress, a boss of mine once said -- and I found it to be true over and over when I looked at this -- was thinking of the Congress as a singular position is a big mistake. It's easy to understand how someone in Congress from Washington State or Texas would have a different view on the public and private mix of the defense base as someone from Oklahoma, Utah, or Georgia. There are different constituent concerns, and that definitely plays into the equation.

So what's the risk? Why even look at this, other than it happens to be interesting for a logistics officer to look at this. Why even look at this?

If we have the environment I described before, with a decreasing number of weapon systems being sold, I'm a major defense contractor and I need to -- I want to maintain my industrial capability, whether that's the skilled workforce, the capital equipment. Not just the wrench turning industrial capability, but the intellectual capital, I mean the design engineers that are truly the jewels of industry that will go somewhere if you don't retain them.

Where can I migrate from if I don't build a new weapon system? Maybe I can migrate into sustaining the weapon systems that are already out there. Maybe that can get me through the drought of acquisition that could be in a post-OIF/OEF environment; and it's coming. Well, there's tension there. There's tension between, you know, industry that's looking to hang onto that capital -- and the United States Government, frankly, really needs industry to have that capability. We rely on that. And the Title 10 responsibility the Services have to retain that as well, and the responsibility to have the access. As a military service, I've got to have the access for weapon systems' support for the war fight.

So, you've got this tension brewing. You're going to have more limited resources in the future. And basically unless there's a vision and a strategic process to determine where that capability should reside, you're going to have an unvectored scramble for those resources, which is not going to benefit either side.

Now, I'm not talking -- I want to be clear, I am not talking about fencing off government work. I think that's too easy a mark that a lot of people fall into. And I don't think it's about jobs, frankly. The discussion will be about jobs because that's easy to measure. It's easy to measure how many positions this would be, for instance, with insourcing. DoD's looking at insourcing in a significant way, and it's easy to measure it: X-number of jobs goes with this to bring this capacity to a depot.

But really it's about capability. Because, really, what does the Department of Defense need to have access to. It's not -- capacity can ebb and flow, but if I don't have

low observable capability or if I don't have precision manufacturing capability -- it should be about the capability and not necessarily the jobs program. That's easy for me to say; that's hard to do. It's hard to measure. And there's plenty of stakeholders that are -- that no one would be happy if this vision was articulated in an effective way because it's going to take from everyone.

But I think it's really -- it's the risk we see that's in front of us. And I think that's why the vision needs to occur, or we'll have knee-jerk reactions. And some of these providers that we rely on now will make a capital investment. It won't be the right capital investment. And then they'll exit the market and they'll just leave. And the government won't be prepared.

So, to wrap it up, I look forward to your questions at the end of the session.

MR. MURADIAN: Thanks, Tom. Over to you, Tim.

COL. CHYMA: Thank you. Good afternoon. My research topic area was rapid acquisition. And I chose that because I'm interested in a better understanding of the relationship between rapid acquisition and deliberate acquisition. And also I think it's very relevant because we have an obligation to meet the immediate needs of the war-fighters that are in fight today, but at the same time meet the needs to modernize the force, and able to do both in an increasingly resource constrained environment.

My method of research was to review the existing regulations, policies, and statutes that provide the framework for acquisition. I also reviewed some recent studies that have been completed on the subject area, and I did some small number of interviews.

Before I get into it, I'm going to hit three really key areas. And that is, talk about deliberate acquisition, talk about rapid acquisition, and then talk about a process that links the two together. But before I start talking about them individually, I want to talk a little bit about what's common between them.

In defense acquisition, regardless of if you're talking rapid acquisition or deliberate acquisition, it's a team effort. It's complicated and it requires a large workforce with a broad area or a broad range of functional expertise, who are entrusted with billions of dollars to translate a need into a materiel solution.

Additionally, regardless of if you're talking deliberate acquisition or rapid acquisition there are three key processes that have to be synchronized in order to be successful. That's determining the requirement, resource allocation, and acquisition. And each of those processes has their own sets of regulations, procedures, staffing timelines, and chain of decision-making authority as well as oversight. But what's important is that the workforce that implements those processes and the leadership that provides leadership for them, they have to synchronize. They have to collaborate in order to be successful in getting a materiel solution out to the field.

Now, the first thing I'll talk about is deliberate acquisition. Deliberate acquisition essentially is institutionalizing an operationally effective, suitable, supportable, and safe materiel solution, but it's done at the expense of speed. And I say that because when you go to institutionalize something, especially in an organization as large as the Army, for example, that represents a significant investment in commitment resources. So it's going to require decision makers to -- they're going to want to have comprehensive analysis. They're going to want to have comprehensive testing and be assured they're getting the right thing. It also means that that process is going to be more risk averse.

So generally speaking it'll take about five to six years from the time they identify a need or a gap until the time you see a materiel solution. And that's if it's a COTS, or a commercial off the shelf-type item, or a modified COTS item. If it requires additional maturing of the technology or requires extensive integration with other capabilities or systems, you're talking nine-plus years.

But to understand why it takes that long, you need to look back at the processes. So, again, you've got requirement determination. You've got resource allocation acquisition. In the deliberate process you've got the Joint Capabilities Integration Development System, or JCIDS, for requirement determination. That's a need-driven process that is staffing and analytically intensive. And so the time it takes to do the analysis, which is comprehensive, is going to be dependent on the investment involved, the complexity of the technology, or the complexity of the need, and visibility.

But once you get beyond that and you initiate your initial documents that then need to be validated and approved, that staffing process is anywhere from 9 to 12 months, and that's being optimistic. So it's 9 to 12 months to get to a validated and approved requirement, which is then prioritized and competes for resources in the PPBES process, Planning, Programming, Budgeting, Execution System. PPBES is a calendar driven process that is on a two-year cycle that occurs on the even year. So we're all aware we're in 2010. We're identifying the funding that we're going to need beginning in 2012.

Well, if you look at those two processes you're talking at least three years from the time you determine you have a need until the time you've got the resources, when it transitions into the Defense Acquisition System. The Defense Acquisition System is event-driven. It's by developmental phases and decision points. Now, unlike the other two processes, arguably the Defense Acquisition System is the most flexible and agile. Because explicit in its regulations and policies, is it empowers the milestone decision authorities and the program managers to exercise judgment and discretion in structuring their programs to be tailorable, responsive, and innovative. And they're supported by their strategic partners in the contracting, logistics, and testing community because they have the same type of language in their regulations and policies, and that is to tailor based on the needs of the program to support that program.

But once you get through all that, from the time you get the resources to the time you have a materiel solution, now you're talking about two to three years. And why is that? Because you're going to do a competition, you'll down select from the competition, you'll conduct comprehensive testing, both developmental testing and operational tests, and that information there then supports the decisions on how to proceed with the program. It also supports the type classification materiel lease activities that occur. But at the end of the day what you have, it is an operationally effective, suitable, supportable, and safe materiel solution.

Now let's look at rapid acquisition. Rapid acquisition, unlike deliberate acquisition, accepts risk, and accepts risk in the areas of performance, supportability, and integration. But it does so for the sake of speed. Generally speaking it'll take about 7 to 15 months from the time you identify a need to the time you get resources in place until you get a materiel solution to the war-fighter who's in the fight. But to understand why you have that disparity, you need to go back and look at the processes.

It has the same process: requirement determination, resource allocation, acquisition. But in the requirements determination process, in the case of the Army we use Operational Needs Statements. Those are initiated down at the war-fighter level by the units who are engaged in the fight. When they determine that they have a capability gap, and it's usually derived from a combat survivability deficiency such as loss of life, or it's determined to be necessary for mission success or failure, they put it -- they codify this in an Operational Needs Statement or a Rapid Equipping Force 10-Liner, which is the way to communicate that to the operational chain of command. It's the operational chain that does the validation approval, and that eventually gets up to the Army G3 level, or in some cases the Rapid Equipping Force.

But it's at that level where it's approved and resources are committed. The

resources that are committed are supplemental funding or supplemental appropriations. Supplemental appropriations is annual funding. It's available in the year of execution. So that's how you're able to get quickly from the need in the field to having resources in place.

But then you transition to the acquisition. And this is where I want to make an important point. The acquisition workforce that supports rapid acquisition is the same workforce that supports deliberate acquisition, and they're following the same regulations, policies, and statutes. The key difference is, is that urgency of need is determined by the war-fighter. It's that urgency of need that then serves as the rationale for accepting risk. It's also the basis for seeking waiver, abbreviating -- deferring requirements or abbreviating requirements that are normally prerequisites under regulation and policy. So it's that urgency of need that's the critical driver.

A practical driver is the maturity of the technology. A commercial off the shelf item that's in production is going to be faster than a commercial off the shelf item that's going to be modified, or if it's something that's prototyped and not yet in production. So those are -- that's a practical driver.

Another thing to consider is, in rapid acquisition, is that you're talking generally small quantities relative to institutionalizing something. So you're talking small quantities that you're not going to type classify. You're doing an urgent materiel lease, and typically you're doing abbreviated testing. And all that together allows you to do things more rapidly in being responsive to the war-fighter in the fight.

So that's -- those are the two: deliberate acquisition and rapid acquisition.

Now I'll talk quickly about the CDRT process. The CDRT process stands for Capability Development for Rapid Transition. It's a process that has emerged in the Army and it is co-chaired by the G3 of the Army, who represents the Operational Needs Statements, approves those. And then the Training and Doctrine Command. Training and

Doctrine Command are the ones who are responsible for implementing JCIDS within the Army. So now you're bringing together the rapid requirement generation with the deliberate requirement generation. In that process, what they do is they evaluate the rapidly acquired capabilities and put them into three bins. They determine if they're enduring, meaning they should be institutionalized; or they place -- or they should be support, meaning that it's unit specific or theatre specific and there's no intent to institutionalize it; or they determine that the capability is no longer needed and it should be terminated.

For those items that are determined to be enduring, the intent there is then to take the lessons learned, the experience gained from the field, and put that at the appropriate entry point in the JCIDS process, so you're accelerating where that is in that JCIDS process. And then it goes through the validation approval process, gets prioritized for resources, and it eventually gets in the Defense Acquisition System for institutionalizing across the Army. So that's the linkage between rapid and deliberate.

The thing that I want to also emphasize is, you know, doing rapid acquisition we need to do on orders for the war-fighter in the field. And I think everybody agrees with that. But the other benefit of doing it is that because of the lessons learned and the experience gained, you have a better concept of employment, you have a better understanding of the basis of issue, you should have a better defined performance requirement, better refined cost estimates, and better refined logistics support estimates. And all those should help serve to reduce the risk on programs of record as it gets institutionalized.

But the last thing, in summary, what I would just say is I want to emphasize that rapid acquisition is as much about the rapid validation and approval requirements and the available funding as it is about acquisition. And it's the urgency of the need as determined by the war-fighter that allows that to happen. Thank you.

MR. MURADIAN: Great, Tim. Thanks very much.

Shahnaz?

LTC. PUNJANI: Okay, I was really -- I didn't do any of my research on acquisition. I have a background in acquisition. I was just picked because I have a lot of opinions about the subject.

So one of the things I did is I picked up this week -- the HASC actually just recently approved their Defense Acquisition Reform Panel report that just came out. And it was actually a pretty short report for HASC, 53 pages. And it did kind of a nice little summary of all the problems that we've seen in defense acquisition. It's slow. It's pedantic and parochial and fiefdoms, all that fun stuff that we all have to deal with.

So getting back to what Tom and Tim were talking about, when we look at the defense industrial base, there was a discussion about the outsourcing versus the insourcing in the paper. And one of the things -- some of the numbers that they brought up with in the paper were, from FY 2001 to 2008 the purchase of goods and services more than doubled to $388 billion in the Department of Defense. In that time period the workforce stayed fairly static at about 126- to 129,000 people. So we doubled how many things we bought, but we didn't increase the number of people that we were using to buy them.

So what happens is we have to go by expertise. So we go, we buy contractors, support contractors, to help us execute all of these contract actions. Because we don't get to waive, in the deliberate process, we don't get to waive any of the requirements that are levied upon us. Those requirements were primarily based on something went wrong, there was another hearing, now we have another requirement. God forbid somebody died and now we have a new requirement for something that we have to test that we never had to test before. So deliberate acquisition is because we have learned through the years all the things that can go wrong, and we had to levy a requirement every

single time something went wrong.

So we did a lot in terms of putting a lot more expertise out there in the contractor world. Unfortunately, at the same time, what that meant was that we lost a lot of expertise inside the government. So in, for example, in the depot maintenance field, a lot of that is contractor run, contractor expertise; that's where all of that sits.

So we're going out to buy, for example, when we had -- when we were adding the MC-130H Talon II we were adding an air-refueling pod to the wing of that aircraft. We wanted to get the data to actually go, "what are the stress -- what is the structural analysis of the wing?" And when we originally bought that airplane, we didn't have the data rights or they'd been lost. And Lockheed said it was going to cost us X-millions of dollars to get it. So we didn't have it, Lockheed didn't have it, so instead we had to extend that program and do an extensive 18-month test program because we didn't have the data anymore. We couldn't get the data and we couldn't afford it.

That's just an example of outsourcing is great, but it also has some other effects. Another thing to think about when we look at insourcing versus outsourcing and this move to transition -- and what they're talking about is increasing civilian and military authorizations by 4,700, and by 2011 they should be up by a total of 10,000 personnel. Okay, so, where are these people going to come from? If they're coming from colleges and entry-level positions, that's great. But that really is a jobs program because we don't have the 15-year experience base that we would be looking for when we're trying to buy new systems and when we're trying to -- say, for example, a Joint Strike Fighter. Reliability, maintainability is a big issue on these aircraft. The people that are actually -- know how to maintain these systems would be in the depot and we would pull them into the very beginning of these programs to tell us what were all the problems you saw in F-15, F-16 that will help us on the Joint Strike Fighter.

Those people aren't there anymore. So how do we, kind of, get over that as well? So that's a big -- the defense industrial base in building capacity, capability and quality in our personnel is a very big issue.

On the rapid acquisition side -- deliberate acquisition, I've been in many of those deliberate acquisition programs. And they do take a very long time. Rapid acquisition does have a lot of advantages. And I'll tell you, as an acquisition professional, I love to work rapid acquisition programs. I love to say that this is the number one priority for the Secretary of Defense.

One of the programs I worked was Massive Ordnance Air Blast, which was -- it started, actually, in about 2002 when the Air Force Research Laboratory Munitions Directorate, they had this idea. They just wanted to build the biggest conventional bomb ever. And they were just so excited and jazzed about the concept. I remember them coming in, oh, like, we're going to put it on a C-130 and we're going to drop it over the ocean. And they were just thrilled. This was long before Secretary Rumsfeld had heard about it. And then time goes on, and then we end up going into Iraq. And all of a sudden the AFRL guys go up to -- come up here to DC and they talk to the Secretary, and the Secretary says I want it.

The Air Force secretary says, whoa, you're going to kill programs if we do this.

Secretary Rumsfeld: I want it.

And so what happened is that all of Eglin Air Force Base test assets, as well as the munition guys, Munition Directorate guys at Air Force Research Laboratory, all built together this huge -- the whole complex was focused on one thing: how do we get MOAB built, how do we get it tested, and how do we get it out into the field.

And I'll tell you, when you can put on your performance report I worked

Secretary of Defense Rumsfeld's top program, and they said we did a great job, that is something that the acquisition professionals get really jazzed about.

So in a lot of ways, you know, both of these things -- but how do we make rapid acquisition happen. Again, having that organic expertise -- and Eglin had a -- actually it had a really good record at that because we had built GBU-28 for Desert Storm in the early '90s. So we had that example and that background to do that. Not every program and not every area has that.

That's it.

MR. MURADIAN: Thank you very much.

I'm now going to take my prerogative and ask a couple of questions. Why not?

First question I guess would be to you, Tom. I mean, one of the things that's often said about our weapon systems is that sustainability and actually lifecycle, we don't look at anything as a lifecycle cost issue. We look at it as an individual acquisition, you know, how much does the end item cost. And then we please ourselves by advertising production number 1295 as sort of being the advertised cost, right? I mean, it's sort of like your -- the first Ford Taurus was a $2 billion car. It doesn't become a $21,000 car until you get to unit number 1,700,000 or something.

What do we need to do from the outset to make sure that -- like the UK does, for example, which is now start looking at it as, "what is the entire cost of the program?" How much does it keep? Does that tradeoff of two knots of speed, for example, lead to an aggregate savings of X-fuel, which then drives fewer oil requirements for reserve -- lesser tanking requirements?

LTC. MILLER: And a great point because I think it comes down to what do we ask a program manager to do. How do we measure their performance? Cost, schedule,

performance. If it's cost, schedule, and performance, and a program manager knows they may have a Nunn-McCurdy breach if their costs go too far up, even though it may be a more reliable subsystem within the system, maybe the entire structure we have for measurement of performance of a program office needs to be re-looked at. When you go buy a new car, I look at the sticker price of the car. I don't think about the lifecycle costs throughout the life of that car if I'm going to keep it for six or seven years because really the analytical -- I think the analytical rigor could go in there, but frankly I don't think we ask program managers to perform to that level for the lifecycle.

MR. MURADIAN: Do you think that we should? As somebody who's been in that game for a while.

LTC. MILLER: I do, for a number of reasons. When you look at the JCIDS process, which we talked about, when I was on the Joint Staff, the sustainment look that was given, my office looked at that. By then the homework is done for years gone by. The key is to figure out pre-milestone A, way early, where can these trades be made? The problem becomes, you know, say it's fuel efficiency. Say I'm going to use composites versus metal. That decision can't be made too far down the road. The trades have to be made so early. And the logisticians have to be talking to the acquisition and the design engineer professionals so early, when it's determined if it's going to swim, fly, or walk, or whatever it's going to do, really early in the process those trades have to be made. Because if we make the trades later on, that would impact the cost across the lifecycle, it's probably too late. And I don't think we do it early enough.

MR. MURADIAN: Tim, let me ask you. I mean, when it comes to rapid acquisition, I mean, you sort of highlighted how many organizations and hands have their -- are trying to influence it one way or another. But then it becomes a rice bowl and turf issue, with the Infantry Center, for example, protesting it, or the Asymmetric Warfare Group, or one

of another number of entities. Having lived in it and seen it, what do you think are sort of the most concrete and immediate changes you can make to streamline the ability of a unit in the field to get the equipment? And also strip away, for example, some of the -- what some people have termed the unnecessary testing. You know, let's just get it to the best 75 percent of it, field it, and then get feedback from the field as opposed to going, no, wait a minute. You know, sort of like we did with Land Warrior. Everybody in the field really loved it. We pulled it and told them, okay, well, on the 2015, you're going to get a better Land Warrior. When guys were like, well, actually using it in combat will yield the best possible system if we just hold onto it, for example.

That was a really bad linking of an apple and an orange, but anyway.

COL. CHYMA: Well, I think our most important focus needs to be on the war-fighter who's engaged in the fight, when it comes to the rapid acquisition aspect. And an ad-hoc organization that's in the Army right now is Rapid Equipping Force. And that's an organization that stood up in 2002. And the benefit of the REF, it's not so much that it's about the rapid acquisition of equipment as much as it is they're tied into the unit that's downrange. And so it gets to what exactly does the war-fighter need. And it's not going through the other proponencies for items. It gets down to the guy who's getting ready to deploy or is deployed who says hey, I have a need for this.

And so you have this organization, the Rapid Equipping Force, which is able there then to capture those requirements. But the benefit of REF -- or an advantage of REF is that all the functional areas that you need to do it are under one organization. You've got the guys who are going to capture the requirement, you've got the technical expertise, the budgeteer guy, you've got the program management and contracting folks all under one organization. The decision authority resides with one person for approving the requirement and allocating resources. And you've got a senior acquisition guy who then supports him.

MR. MURADIAN: Bureaucracies don't like things like that.

COL. CHYMA: Right, it's a small -- and that's what the other thing is, it's a small organization which allows it. And that's something that the Army should embrace, I believe. Because it gets to get something to the war-fighter. Does that mean everything is successful? No. But you're talking about a relatively small commitment of resources at that point, and it allows you to put into the field those items that then can be looked at and assessed to determine whether or not they're something that should be institutionalized. In which case then it should go to the proponency for the, you know, who does the JCIDS process.

But that REF organization should be closely linked to the trade-off folks. And that's what the CDRT process tries to do, and have that linkage. So you have that, you know, getting something to the war-fighters in the fight, but then determining whether or not it's something that should go across the entire Army.

MR. MURADIAN: Shahnaz, let me ask you this question about size. You know, we were talking about growing the size of the acquisition corps, and whether or not we're going to get the right kind of capabilities, and the fact that the government doesn't know enough, you know, bizarrely. I mean, whenever you get into a position where the Air Force is getting into trouble developing a jet, the Navy's having trouble deciding what its future ship should look like, and the Army can't pick a rifle, you know you have a serious acquisition problem that goes way beyond just whether the industrial base is working on the right side of the street on this.

But do you actually need dramatically fewer people? I mean, this is something that former Navy Secretary John Lehman talks about all the time, is that during World War II the Bureau of Ships was 1,000 people and was buying thousands and thousands of ships. Now BuShips is, like, 20-some-odd thousand people and it's buying 5

ships a year. You know, fundamentally, are you setting the entire organism up in the wrong way? And don't you need to vest far greater authority -- a lot like Tim discussed in terms of the REF composition of very competent people in whom you vest a lot of trust and authority. I mean, you give them appropriate oversight, but actually I would imagine your oversight goes up with the fewer number of people who are doing this kind of thing as opposed to, like, vast sort of competing, six different organizations that are all trying to push in the same direction. I mean, isn't that actually a far smarter way of doing this than actually looking at it in terms of expanding the organism in a very dramatic way?

LTC. PUNJANI: The oversight is a big part, I really think, of what drives the size of our organizations. When you'll have a small program that has the same types of requirements as a large program -- and many of these requirements are tailorable, we don't have to do all the reviews and all the paperwork for every single program. But there are some requirements that are still mandated, certain types of design reviews. Those are expensive, time-intensive processes.

MR. MURADIAN: And congressional oversight, also, which is --

LTC. PUNJANI: And congressional oversight. I remember talking to somebody who is working Future Combat System. And she said she spent more time answering congressmen's phone calls, that she can't avoid and cannot ignore, than she ever got to work on her program. And this was before the program was essentially cancelled --

MR. MURADIAN: Well, she can ignore them, just not for long.

LT COL PUNJANI: Right. So even then, and this is before the program got cancelled. So, you know, the oversight, we always say it's going to be -- we'll try to make it less. But then something will happen. They'll go, look, see? We can't trust those people. Why did we let them go off and do their own thing?

MR. MURADIAN: Hearing that from a member of Congress is always, I've found, kind of amusing. We trust you in dark rooms with lots of money. You know. It's the military guys you can't trust.

Do you need, as somebody who's been in the testing business, do you need an entirely different way of testing? It seems to me, for example, that, for example, when we used to do flight tests, we would say like, okay, well, this doesn't work on it. Okay, fine, we'll write that out. We're still going to do the flight test.

Whereas now each flight test takes on such holy importance that it's like, well, everything's got to work. I mean, everything's got -- all the parameters have to be perfect for that flight test as opposed to being like, well, look, here are two bits of it that are down, right. So we're still going to do the test anyway on all the other nine things that we were trying to accomplish. You know, we won't accomplish 29 things on this test flight.

LTC. PUNJANI: We have --

MR. MURADIAN: Just at least start flying test flights.

LTC. PUNJANI: Right. The Air Force has this -- we call it the whole fly-fix-fly concept, which is a bad thing. We don't like to do that. But we do that. We fly it, we find it doesn't work, and then all of a sudden, you know, the program manager gets told, hey, your baby's ugly. And the program manager doesn't want that. They don't want to hear that. So that's why there's so much pressure on the test guys to go make sure everything works every single time.

And what happened was these test programs got so long that by the time it got to operational tests, the fielding decision had been made. AFO-TECH still hadn't written their final report, and that system was out and we'd already bought, we'd already paid for it, and it was on the assembly line. So tests became almost -- it de facto became irrelevant because the train kept moving and the testers were still trying to figure out how they were

going to fly that test flight.

MR. MURADIAN: Well, or all -- and then you go through successive generations of technology, as in the case of the F-22 where you had to start doing major, major, major work to the thing because it's starting to become old.

LTC. PUNJANI: Right. And then you've got to test all the software all over again. So.

MR. MURADIAN: Well, there are also subsystems issues.

LTC. PUNJANI: Right. Oh, yeah. Subsystem is big issues when you have unknown -- well, we have it with Microsoft Windows. You know, unknown features, undocumented features. We get -- we don't like it when that happens in our airplanes. It happens, but we don't like it.

MR. MURADIAN: I really like it when it happens in my office setting, though. I'm just kidding.

Did you have something to add, Tim?

COL. CHYMA: Just talking about the testing, I think it goes back to it's a team effort. When it comes, you mentioned about the testing piece, when you come to that point the testers are going to test to what the requirement is. Okay. And then they're going to report back on that on how well you perform. Okay. Then it's up to the program managers and the user representatives to then determine, okay, well, what are we going to do with that information.

And there's three key -- and there's three decisions: you're going to continue, you're going to modify, or you're going to terminate. So it's not the test community that should be determining that. They're just going to report back on what their -- what's been tested. The big thing is making sure that the test design and execution was not flawed. But then you have to go back and look at, okay, is there a design issue or is it requirement

issue or is it something that, okay, it's not 100 percent exactly what we wanted, but user -- is this good enough. And I think it's that kind of discussion and dialogue that has to occur with those -- the leadership of those organizations in order to move forward, you know, efficiently and effectively.

MR. MURADIAN: And now we open the -- to the -- yes, sir?

SPEAKER: My question is for Colonel Chyma.

SPEAKER: Chyma.

SPEAKER: Chyma. Chyma. I picked up a little bit on, you talked about acquisition, you said, well, but requirements are part of that, sustaining's a part of that. I'd offer disposal to that.

And I would say that -- I would suggest maybe another term for rapid acquisition might be agile resourcing processes. And by my count there's about 16 agile resourcing processes in the building. You focused on the REF. You focused on the 10-Liner, the ONS . But every service has one. OSD has them and so does the Joint Staff. When we conduct warfare, we do it as a joint force.

Has any of your research taken a look at bringing these 16 or so processes together with the intention to optimize the most ideal process with speed schedule as the priority? And instead of being connected with the unit in the ground -- unit at the ground, the Army unit, for example -- because, for example, an Air Force unit can't send in ANONS. Okay. However, the REF -- or let's take the case of MRAP. For example, Mick Sidick was the most ideal program manager to produce MRAP, not TACOM .

So, in other words, is there an avenue, by bringing all these processes together, through which it would be more ideal to get war fighting equipment to war-fighters by some sort of a cross-functional group that takes a look at all -- that looks at all those processes?

And then finally, what does the REF do after the war's over? In other words, if you want to institutionalize rapid acquisition, if you brought all these things together, how, for example, can war-fighters or sailors or soldiers plug into rapid acquisition in Haiti to access some of these capabilities that might be produced by Army?

COL. CHYMA: Thank you for the question. And I think you keyed in on it. It's the resource. You're not going to be able to do rapid acquisition, or deliberate acquisition for that matter, if you don't have resources. So the resources are the key. And right now we do use supplemental appropriations, but eventually that will go away, too. So it's a matter of having funding available in the year of execution, but to also have a process by which you then allocate it appropriately.

To tackle the first one is, this isn't unprecedented, but what's wrong with programming some amount of money in the year of execution to the normal budgeting process that's there for things that come up, that emerge, either operational needs or technical opportunity. And it's not unprecedented. The Army did this with the war fighting -- or the Warfighters Rapid Acquisition Program in the late '90s. And there was some amount of money, and it was supported by Congress and by the chief of staff of the Army. Some amount of money; it wasn't a lot. It was set aside for technologies that presented themselves as opportunities. So there's one way to get resourcing in place.

As far as how do you go ahead and allocate that, you need to have some disciplined process that does have criteria for what meets that, you know, what's determined to be rapid. And whether it's, you know, within the REF, you know, they're tied in the units. And I'll talk about them in a minute. But rather than specifying any specific organization, I would just acknowledge, yeah, you need to have some process and somebody that is there that has a disciplined process by which you then allocate the resources that would be programmed for that purpose. Now, how you do that, if you consolidate them all or do it by

functional area, I, you know, I really didn't get into that in the research.

But as far as talking about the REF that you mentioned and their application beyond wartime, is I considered that, too. And I said the key to -- the nice thing about REF is they're connected directly in with the units. And when the war ends, that should be an avenue for the units or -- and also the S&T community. In other words, have an organization like REF, who then is tied into industry, the S&T community, into the units, who can see opportunities that present themselves, but then had the resources available to act upon them.

And that's just a, you know, it represents a small commitment. Not everything's going to pan out. Not everything's going to be successful. But it allows you to at least try it in small quantities, limited exposure, and you're not committing yourself to a materiel solution. But then if it works out, you have a path to get into a deliberate process to get institutionalized.

MR. MURADIAN: Good thoughts.

Yes, sir? Oh, yes, go ahead.

LTC. PUNJANI: I just wanted to add one more thing. You know, the Air Force has the battlelab concept where it kind of is that bridge between the S&T and the operator community. They're funded directly out of the operator community and their whole purpose is to look at easy wins, easy gains, things that are small, cheap, and easy to transition to the field that will actually hit a high existing need. And the battlelabs have been around for a long time, so it has a wartime function as well as a peacetime function.

MR. MURADIAN: Yes, sir?

SPEAKER: Thank you -- (Inaudible). This might be a very timely symposium because when US is fighting three wars, not two. One in Afghanistan, Iraq, and one at home here because many people are turning to al Qaeda or joining the forces there.

And now, also, Osama bin Laden is challenging the United States and the global community in a new message. And China is building up. We are not talking much about it. May be a future threat. And finally, this morning when I was in the White House, President Obama, Secretary Gates, and Secretary Clinton, they announced a new treaty, reduction of defense and nuclear arsenals with Russia. And now -- and finally next month, we have a big 43, 50 heads of state from around the globe are coming in an international symposium on nuclear arsenal direction.

So what do we do or make out of this, and where do we go from here as far as dealing with Iran, also, finally.

MR. MURADIAN: You asked a lot of geo-strategic questions that I'm not sure an acquisition panel is necessarily going to be able to easily address.

SPEAKER: (inaudible)

MR. MURADIAN: But, you know, I mean, I'll say -- if I can take the moderator's prerogative and, hey, I'm the reporter, so the people can criticize me all they want. You all do anyway. I'm just kidding.

Look, I mean, I don't think you could say that people aren't keeping their eye on the China ball. I mean, I think it's something that is getting more and more attention as every year goes by. There are those who say that it should have been -- the interest should have happened a lot earlier. I think I would fall into that category. That it's certainly a country that's not an enemy. Obviously, it's the leading United States or a leading United States trading partner and a massive holder of American debt. At the same time, it is a rapidly developing country that will seek, as the United States developed rapidly, to assert itself, sometimes with very sharp elbows as the United States did throughout its history.

I just don't think that intellectually we're as comfortable about how that's going to play out, just like it wasn't particularly comfortable in London or Paris or a number of

other places around the world when we were developing and they were going, hey, who the heck do these guys think they are. Invariably, I find historically that buses tend to pass -- I'm not sure that in 1912, if you asked people in London whether their time had passed, they would have answered yes. I think that they would have thought that that's not the case. And invariably in these things I think that these shifts happen and there are -- folks tend not to realize that that shift happened until actually they're looking at the taillights of the bus going past them. So.

Yes? Please.

LTC. PUNJANI: I told you I have a lot of opinions.

MR. MURADIAN: Add.

LTC. PUNJANI: So, you know, even though we whine and we cry about the state of our acquisition system, we still don't need -- we need to keep in mind that the US military is still the best-equipped military in the entire world.

MR. MURADIAN: Excellent point.

LTC. PUNJANI: And it still has a great deterrent and strength capability across the strategic. So, you know, our issues that we see internally, I don't see that really impacting the strategic stage, because the US military is still the best one out there.

MR. MURADIAN: Agreed.

Yes, sir.

I mean, I don't know, I mean, I yield the balance. I mean, I don't, you know, I -- we -- the --

SPEAKER: (inaudible)

MR. MURADIAN: My thoughts on Iran. That's good you asked me. I'm just getting -- go ahead.

SPEAKER: Thank you. (inaudible) Company. I have a question about the

COTS, commercial off the shelf. I think it started early 1990s, and there was the expectation of the relatively low acquisition cost and rapid introduction of the proven technology. But we are seeing some problems, like rapid configuration control -- I mean, configuration changes, and also it's a black box. So COTS supply, yeah, really controls design, and military cannot.

Now one lifecycle almost over since the early '90s. How do you conclude about COTS acquisition and COTS benefit?

MR. MURADIAN: Can I just start off on this one? Yeah, I just think it's not that great of an idea unless what it is you want to buy is very clearly defined and doesn't really involve a lot of modification. But virtually everybody wants to modify it. So we buy an Anglo-Italian helicopter that repeated analysis of alternatives have concluded is should be the presidential helicopter. I mean, that's what they've concluded; I'm not making that up. And then we get in there and we decide we're going to completely reengineer the aircraft because we don't like the aluminum it's made out of or we don't like -- you know. So if you didn't like that, you might as well just hold a competition.

It's the same thing with Littoral combat ship. It's not an Italian yacht anymore, by a long shot. And the new vessel rules that were created to try to facilitate it as a COTS-ish non-developmental or minimal developmental idle . I mean, these things just don't work unless what it is you're going to buy, I suppose is sort of a UH-72, which is really a commercial helicopter that's kind of painted green. I mean, I'm not trying to be negative on the aircraft, at all. But it, you know, that was the least amount where people can point to it as a COTS success, but then the critics say, yeah, but it doesn't have even remotely the kind of capabilities you need out of a military helicopter. And the answer is, well, it wasn't supposed to be a military helicopter, it's a commercial helicopter to move people around and ferry a couple of stretchers and things like that. But, you know, it's not a mil-spec aircraft.

So, you know, I think it's a checkered -- you know, I mean, my view is just

go ahead and, damn, expend the money and develop and build what you want to build, and at least exercise design teams a little bit, but.

Go ahead.

LTC. MILLER: When I came in the Air Force, I remember we'd get blue vehicles painted mil-spec blue in the Air Force. And then I remember the first time we got a vehicle that probably came out of GM or somewhere that was just painted blue. It wasn't mil-spec blue, but somehow it still worked as blue.

So there's that extreme, which surprised me. This was Cold War --

MR. MURADIAN: There were a whole bunch of people on the flight line looking at it: does it work?

LTC. MILLER: Is that the right kind of blue?

But that seems like a, you know, that's one extreme. The other extreme is an integrated circuit card. And so the black box, the box, the commercial off the shelf box that you talk about is a concern because where did that circuit card come from? And that may not be a big deal if it's for, you know, something that's not related to targeting or to some other sensitive system. But if we don't buy -- if we don't have reliable sources of supply and we rely purely on COTS and don't have sources of supply that we've kind of thought about the unintended consequences maybe a decade from now, we may not have many options for buying integrated circuit card for the targeting system in a missile or radar or something else.

So there are programs. The DoD uses the Integrated Circuit Card Foundry Program. That's kind of a piece I didn't talk about. But there are partnerships that the Department of Defense looks at and needs to look at more for maybe we don't need to have all the capability in the Department of Defense, but maybe we need to put the seed money to have the partnerships. So kind of along the warm base and having a foundry or a reliable

source for us in the future.

MR. MURADIAN: Do you have anything to add?

LTC. PUNJANI: I always have something.

MR. MURADIAN: You've got something. Go ahead. Speak up.

COL. CHYMA: Going back to what you said, you know. You said you need another requirement for the COTS item. And that's important because people need to realize when you do a performance based COTS-type competition you need to know your requirement because what you're going to wind up with is something that's not going to exactly meet your requirement. Okay. Because it wasn't designed against your requirement. So you have to understand that, that it -- and it goes back to understanding what's 80 percent versus 100 percent.

The other thing is, when you're talking COTS, for a performance-based competition you go and you award a contract for a large quantity of items. If you don't buy the technical data package, when you get further down the road and you start talking about sustainment or you want to do a re-compete of the same item, you're kind of caught in a conundrum.

So there's a lot of things to think about. There's a goodness in COTS, but there's a lot of things you need to be thinking about before you go that approach.

LTC. PUNJANI: I remember being over at ASOC and one of the maintainers was all excited because he found a 486 processor on eBay, because that's what they needed and there were no other vendors to supply them. So that's just an advantage -- that's just an example of how COTS can get you in a bad place.

Some of the things that, you know, that people are looking at and designing to help work that black box issue, is what we like to call open systems architecture, so that you can have the black box a plug-and-play. But now you're seeing your developmental

item now becomes the integration piece between this black box and that black box. And I know a lot of people go, hey, this COTS solution, that's 80 percent of what we needed to do. And then I watch that program as, you know, supposedly, what, 20 percent of the effort turn into 80 percent of the dollars as what it was spent to figure out how we were going to integrate that COTS item that should have been fairly simple. And then by the time the program was over, that vendor's no longer making that piece. So now we got to go back and find another one.

So open systems architecture is supposed to help. That design philosophy is supposed to help that.

MR. MURADIAN: One of -- I mean, and obviously, I mean, there were a lot of very positive attributes in terms of subsystems and rates of advancement, etcetera. I mean, you know, there are certain things you can capitalize on there. But a big problem is the rates of advancement on some of this stuff. The weapon systems that we have stay in service for a long, long, long, long time. You were talking about 486, talk about 80-86 or 80-88 chips that guys are still relying on and need. So, and the question is, right, obviously the speed of the chip changes now the fundamental operation and the speed of the system.

So, I mean, the thing that I'm sort of continuously -- come back to is it's a rather enormous problem because -- well, take, for example, when the entire COTS revolution started happening. Guys had components that worked from vendors that were long established, and then everybody suddenly went COTS. So these guys, under pressure from each of the military services, broke longstanding arrangements, went to commercial vendors. The commercial vendors said, I'm sorry, my chip is not designed to operate under 120 degrees. And I'm not modifying it for you. That's not my job. So here are the chips, have a nice day.

And so, you know, some of these guys were like, well, let me go back to the

old guy that I just fired.

Oh, yeah, he's going to help you out trying to get that chip fitted into your system.

So it's laws of unintended consequences. I mean, I think that acquisition is a little bit faddish. So we had the COTS fad because we thought we could do it on the cheap. And, you know, I mean, you know, to a degree, I mean, you look at the tanker competition, and I kind of want to see a fly off between these guys. I mean, I want to know before I buy 179 airplanes whether are you really going to work? Are you going to be five tons over? Do you have wing flutter? Can you actually do this? As opposed to, ah, it's just a -- it's an airliner we're modifying. You know, it's right, because they were designed as airliners without a lot of margin. I mean, this isn't a KC-135 that was built like a brick you-know-what, and you could bolt any sort and manner of things to it and it would still be fine, you know. You know, but less so, I think, nowadays, so.

Yes, sir. He just beat you by just a second.

MR. WARREN: One of the troubles that we often have in the military is we talk about how the deliberate system is too long. Matter of fact, you highlighted here that already, for one of our new aircraft, we already have modifications coming out and we haven't even got the airplane yet.

So my question is, is that really an issue? Should we bring down this nine-year process down to something lower? Is that money well spent? Or is that a red herring? Is it really, since we're going to keep the vehicle for -- or the piece of equipment for 30 or 40 years, that, in fact, it's better to be risk adverse and, you know, go for risk avoidance and keep the extended timelines.

COL. CHYMA: I've thought about this a lot. I don't see that you're going to be able to significantly reduce the amount of time in the overall process. But what we need

to do is collectively -- again, it goes back to work -- acquisition is broader than just acquisition corps; it encompasses a lot of people. And I've mentioned the three processes. And those three processes are only as effective as the workforce that implements them and the leaders that lead them. Okay. So we need to have a -- if you're going to reduce time, you need to have the people who are working the processes better understand those processes and better work together. And that's where you're going to seek savings of time.

I don't know that I would -- if you look at the processes, there's a logic to them. And it's the leadership, people are technically competent in those processes and in the understanding of the regulations and policies, who help navigate that workforce through those things in order to be rapid, in order to drive down the amount of time it takes.

So I see a lot of it as it's more of a leadership issue and it's also a workforce issue in the standpoint that you need a trained, experienced, and educated workforce that understands all that, and how they work together. But to say that we're going to be able to shave off this amount of time, the way I see it is it has to come from the leadership and the workforce implementing those processes. And there's a logic to it. So.

MR. MURADIAN: Sir?

SPEAKER: Thank you. Great panel, by the way.

You know, philosophically, our whole acquisition system is built on the free enterprise system to foster competition with the view towards competition will produce the best product. And I think historically that's been true. But as we look in the 21st century and we see fewer defense contractors, less real competition, is the burden of trying to get to that competitive end, is it really producing the kinds of products that we need? Or do you think that the whole system really does need to be looked at from a zero-based approach, to be rethought in a very fundamental way?

MR. MURADIAN: It's all yours. Grab it.

COL. CHYMA: Okay. I mean, that's a hard question, actually. And we've seen historically how competition is getting tighter and tighter because we're getting fewer and fewer companies. I think the gist of your question is how much is a -- how much do we need to do, from an acquisition perspective, to encourage competition and to broaden that. Is that the gist of your question?

SPEAKER: Well, how will you really see a benefit from all the effort that we put in to try to foster competition. Or at the end of the day, is it more smoke and mirrors than actual benefit to the war-fighter?

COL. CHYMA: Yeah. I think that's a long-term -- to see the benefit of it is a long-term prospect because it's not something, I don't think, you're going to see turn overnight. When you go to try to create that competition, inherently that's going to cause the whole process to slow down. And by the time you get through that whole process, it's going to be some amount of time before you're going to see whether or not did that competition drive down unit cost or sustainment cost or everything else.

So that's a hard question to answer. It's not something that you can do overnight. It requires looking at trends over a long period of time, I think.

LTC. PUNJANI: From a competition standpoint, from a, you know, as a buyer, competition's always great. You know, if this vendor ends up being a bad play or a bad act or, it's always good to have another guy out there who can build that system for you. And that's something that you really can't figure out; where's the cost-benefit analysis to give you that. It's really hard to say, okay, you know, Buyer A was going to charge me 10K for this part; Buyer B was going to charge me 12K. So I go with Buyer A. Buyer A's a bad actor. They don't supply on time. I walk in, they're surfing the Internet and they're not -- I'm not getting my part on time. And then so now Buyer B, at least I have an option. So it's, you know, if, depending on what it is -- I know some of this issue also comes up with the two-

engine strategy on Joint Strike Fighters, what's driving some of that commentary. In the long run, competition's always a good thing. And to have another vendor out there that can supply a system is always better than just having one. Because when the future comes and they're looking at how much money they're going to need in the future, it's much easier to go, I'm going to charge you twice as much money because I'm the only game in town.

And like, you know, and like Tim said, we won't know that for another 15 years, if that was smart or not.

SPEAKER: Notice I didn't say Joint Strike Fighter.

LTC. PUNJANI: I know you didn't.

LTC. MILLER: And just real quick on that. And we have this debate on the engine issue, actually in our office. I would just say that the analytical rigor versus emotion needs to go into the having the second, whether it's an engine or a plane or whatever it is. We might live in a different world now than we did in the '50s. I think many of us would agree to that. So looking at it with the same paradigm we had before, it may be emotional. And it may -- but I would say just go back to the rigor. Is it really -- how long will it take to payoff? You know, if I'm buying that hybrid car, do I do it because I feel good about it or do I do it because it's really going to save me money? Or am I going to sell the car before it's going to start saving me money? And I think that's the determination, sir.

MR. MURADIAN: I think it's a very good question. I mean, you want a competition wherever you can get it. The issue is are you getting it, really? And what is it you really want? And then are you having a synthetic competition? And then does that synthetic competition actually make sense at the end of the day?

It's a lot like buying a car, you know. What extra are you willing to pay for that Delta capability that you may actually never use, don't need, or drives a whole bunch of other requirements.

Which some people argue is what's happening with the tanker right now. That DoD is just looking at it and saying, I've got MILCON call -- you know, I've got all these other considerations and I just, you know, I want to replace an airplane that carries 120,000 pounds of gas in 64-63 Ls . One carries 200,000 pounds of gas and carries 19 pallets. The other guy carries 230,000 pounds of gas in 32 pallets. So it's not like saying that -- I mean, they're both really, really more capable than what they're replacing. So, you know, the only -- it's not that one is better.

I mean, I could come home with a minivan that doesn't fit in my garage. It's no longer a $21,000 car; it's a $200,000 car because I've got to rebuild the garage around the thing or figure out another place to put it. So.

All right, we're done?

Ah, yeah, we're done. Thank you very, very much, everybody. We really appreciate it. Thanks to the speakers. Thank you, Peter. And a healthy thank you to Heather . Thank you very much. (Applause)

MR. SINGER: I want to thank our group again.

And we're going to take a five-minute break to reset the table. But, again, be back in five minutes.