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P R O C E E D I N G S

MR. O'HANLON: Good morning, and welcome to Brookings and SEIU. But this is a Brookings event on defense policy. We're very glad to have you here. I'm Michael O'Hanlon, the co-director, along with retired general, John Allen of the Brookings Defense Center. General Allen's doing some other things at the moment, as you may have noticed in the news. So I have the privilege of handling this event by, by myself. But I have some very distinguished panelists that I'll be able to ask some questions of, and then so will you after a half-hour or forty minutes of our own discussions up here to kick things off.

We're talking today about a topic that many of you are familiar with. And I know this crowd is a mix of some defense specialists and some broader aficionados to the public policy debate. And we're trying to speak to both, technical issues in how to use the concept of performance based logistics in order to save money and improve the efficiency of Department of Defense activities and improve the availability of equipment. So it's not just about dollars and cents and the bottom line. It's about making equipment more dependably available in a more efficient way.

But we're also trying to ask the question, if the Department of Defense employs this concept more widely, how much could it save over time, and to what extent does that allow DOD to be a little more efficient, how does that affect the broad debate about the defense top line and whether we can live with sequestration, for example. I'll tell you my own view upfront, although I'm not supposed to be emphasizing my views in the initial take.

There's a lot of money to save, but I don't think it's going to make sequestration feasible in any realistic way. That's my view. Others may have different views. You're invited to come back to that question at the end. But we're going to begin

with some more technical discussion of what is performance based logistics. Some of you already know. Others just may have a vague sense. We'll try to explain where it's being employed already today within the Department of Defense and then where else it might be employed.

But today's topic is also fair game for other subjects within the question of defense reform, defense efficiency. So if you want to talk in the Q&A about base closures, or strategic sourcing or other ideas that may allow the Department of Defense to be more efficient in how it spends the taxpayers' dollar, feel free. So let me now, if I could, turn to the panel and give a brief introduction of each. We really have a distinguished group here with a lot of expertise in how to make performance based logistics work for the Department of Defense and also, how to think about it in broader terms as a matter of defense reform and efficiency.

Sitting immediately next to me is my good friend Jay DeFrank of Pratt & Whitney and United Technologies. Jay has appeared at Brookings events in the past before, talking about various topics from the F-35 program, to many other issues that interests him and his company and all of us. And I'm thrilled to have him here again with us today.

From Sikorsky Aircraft Technologies, which is part of United Technologies as well, next to Jay is George Mitchell. Not Senator Mitchell, but for today's purposes, better yet, than the former senator because his experience in the same set of issues is quite distinguished and quite longstanding within the United Technologies and Sikorsky worlds. And he has a specialization in aircraft in general, helicopters in particular, as well as a number of other subjects.

And then finally, to sort of bat cleanup and help us link some of these specific examples that we will have heard about from Pratt & Whitney and Sikorsky to the

broader defense debate is Allan Banghart, who's at Deloitte Consulting Firm that does a lot of work, both to improve DOD's way of handling taxpayer dollars and to be a good custodian of the nation's fiscal dollars for all of us. So Deloitte has been at the forefront of helping DOD get more innovative, more efficient, and take good ideas that may have been manifested in one or two or three programs and generalize them. And so, he is the lead person on performance based logistics at Deloitte and will help us think through the question of how many other programs might this be applied to, what are the pros and cons. Obviously, if this were a silver bullet, it probably would have been employed everywhere already. So there presumably are some obstacles and some difficulties and maybe the concept works better with certain kinds of programs than others.

I'm about to turn things over to Jay. Let me just say one more word of broad introduction and then Jay can have the liberty of correcting me. But I want to again sort of bring in those of our longstanding friends of Brookings who may not be as familiar with this concept as others. And the main idea, as you know from when you get your car fixed, most traditional maintenance services, whether it's in the private sector, in the normal day to day life of most citizens, or in the Department of Defense, are essentially a fee for service. So, if something breaks, and you pay a company or you pay a federal depot to fix it. And historically, the Department of Defense has done things more or less that way as well. Again, I'm oversimplifying. The three guys to my left know a lot more about this, and they can correct me. But I'm trying to make the link between the broad, you know, debate and typical understanding of maintenance and then PBL.

So historically, that's the way things are done. Something breaks and you hire somebody to go fix it. PBL said however, what if we can incentivize a company to actually anticipate when things may require longer term maintenance, when they may be about to break or which kinds of repairs can best be grouped together and be done

altogether, so that if we do these things in a thoughtful, forward leaning, forward looking kind of way, we can actually package a lot of maintenance and repair into sort of a schedule, thereby leaving equipment more frequently available because the repairs don't happen at random moments when you're least expecting them. You try to anticipate when the equipment needs to be refurbished. And you also do it when the engine is already off the plane, and you try to do a number of things at the same time so you don't have to go through that process of reattaching the engine and then, you know, flying it for a few more hours until something else breaks. You try to anticipate these sorts of difficulties so that you make the plane more frequently available but also make the repairs more economical. So that's the logic. And then you incentivize the contractor to do this by paying them not for how many hours they have the piece of equipment in the shop, but for how many hours the piece of equipment is operable to the Department of Defense. So by changing the incentives in that way, you're able to get a win-win for the contractor and for the Department of Defense and for the taxpayer. So, with that imperfect primer on PBL, I will now depend on Jay to correct any flaws I've made, but more importantly, to give us some examples of where Pratt & Whitney has already had some success with this, as we begin the discussion. Over to you, my friend.

MR. DEFRANK: One thing I would want to queue off on is you mentioned not looking for something to make sequestration feasible. You know, the whole thing with sequestration is it was by design supposed to be such a bad idea that it wouldn't be acceptable to anybody. And it still is that bad an idea, and shouldn't be acceptable to anybody. So, nothing that I'll be saying today will be framed in terms of offsetting sequestration because the reality is sequestration should be overturned and if savings are needed in the department, then there's a far more rational and effective way to do that. But that does get us to the point of pressure on the defense budget. You

know, we're coming off of more than a decade at war, two different conflicts. Now we're in this state of not really war, but not really peace, an unstable situation. Our equipment is, is in need of recapitalization. Our forces need to be restructured for the modern world. So there are a lot of demands on the defense budget right now, sequestration, or no sequestration. The department had already gone about cutting the budget significantly before sequestration was improved.

And at other Brooking panels, we've talked about this. There are a lot of solutions that the rational person could take looking at the defense budget that seem like no-brainers. Like you need to divest infrastructure, you need to retire aging assets and that something has to be done with the personnel part of the budget.

But all of those are politically untenable and so they're not really at this point in time, in the realm of the doable. There's a lot of pain and there's constituencies associated with each that magnify the pain with those things. So that drives to other types of solutions. And we're talking today about performance based logistics and that's an example of one where there should be relatively little pain for significant gains. And the reason for that is, is that it drives savings and improves performance, as Mike said in his introduction, by incentivizing contractors.

So, for example, if you were the government and you came to a contractor and said I want to maintain a certain state of availability and I'm willing to pay you for that amount of availability of my assets. I want to be able to fly my aircraft, say, in our case, we build aircraft engines. I want to be able to fly the C-17, for example, 90 percent of the time I need it, I want to be able to walk out and get in that aircraft and fly it. And I'll pay you a certain amount of money to do that. The government then is no longer in a transactional model where it's buying spare parts for the airplanes and paying to have wrenches turned and to manage a supply chain, and all of those other aspects that

in the old transactional model, it paid for.

And in the transactional model, we made our money, mostly through the sale of spare parts in terms of the maintenance arena. We never really made, and still don't make much money in terms of the wrench turning aspect of the maintenance. But we get paid to manage the supply chain and to provide parts. But in a performance based logistics model, we get paid to provide readiness. So the government customer tells us what level of readiness they want and we provide that. And we assume all the risks and all the costs associated with that. So, if we use too many spare parts, it's on us. If it takes too much time, if we have problems with the supplier, it's not the government's problem, it's our problem. What we've shown, and I think all of us will make the point today, it's well documented, that you can save the government in this, get a better state of readiness and actually drive intangibles, like innovation. And I'll give you an example from the commercial sector along these lines.

Everybody knows about BMWs. They're nice cars, they're high performance vehicles in the luxury sport category. Well, BMW had a great reputation as a luxury performance car, but a terrible reputation in terms of maintenance. And they wanted to really drive their market share, but the reputation for needing a lot of pricy maintenance was holding them back. So they changed their model where they would now provide all the maintenance free for the first four or five years. I think it started as four, moved to five years. Everything, oil changes, any maintenance that your engine requires is free for the first five years. And they would absorb all of those costs, so that the owners wouldn't have to worry about maintenance costs. Well, what's happened, in order to do that, and do that economically is it drove innovation so now, they invented a type of engine oil that only has to be changed once every 12,000 hours. They've got their engineering so finely tuned that you're not getting all the metal fragments and stuff

that you used to get in your oil that would hamper the life of the engine. So it's driven innovation in those areas and it's driven sales too, so that they rose to the point of the number one car manufacturer in their category by doing that.

Well, performance based logistics for the military works much the same way. Just as they absorbed all the risks for those first five years, the contractors absorb all the risks. Now, where's the savings in that. There have been a number of studies and I'm going to be very cautious of Mike's guidance of that, to avoid absurdly huge numbers, and I'll leave that to our colleague from Deloitte. But, that but means I'm really going to do it.

You know, the Proof Point study from DOD, which is about a decade old so getting a little bit long in the tooth said that it was possible to save between 10 and 20 percent on the logistics by just moving to a PBL model. Now, those are big numbers. The department spends $170 billion in 2013, $170 billion on logistics. Now, I don't, I wouldn't claim that that 10 to 20 percent can be applied to that entire $170 billion portion of that. It can be applied successfully to portions of it. So, if easy math would have been well $17 billion to $34 billion a year, and I've actually seen people use those numbers. I don't know that I would make that claim.

2010, AIA put out a study and said that it would be possible to save $32 billion by going to performance based logistics. Again, and I don't know if Deloitte provided the data for that study.

MR. BANGHART: We did Proof Point, though.

MR. DELARK: Okay. So, I mean, you know, these are substantial savings that should be available by moving to that. Now, if I look at our own experience with it, with the C-17, where we've had a performance based logistics program with the government, in a little over a decade, we've been able to save the government $3 billion.

We've reduced the shop visits by 1,000, so 1,000 fewer shop visits and we increased the time on wing of our engines three-fold. So it's win-win and win in that category for the government. Now, and you'll hear how Sikorsky has done this and others.

But those type of savings should be available across equipment type of programs by implementing this. So the question is, it seems like low hanging fruit. It seems like a no-brainer. So what are the obstacles? Why isn't it already DOD's policy? And the reality is, it is DOD policy. It's in Better Buying Power one, two and three. It's in the DOD regulations. But it's only being implemented in a half-hearted manner. It doesn't really have a champion and an enthusiast that's really pushing this hard within the department, or from the Hill. And the question is why.

And the answer to that is a mindset that's focused on contractor margins, on costs and pricing. You know, the phrase that I hear and you may have seen my quote in political, chasing the last dollar to the last bolt, trying to determine the price. It's the concern in the government that are they really getting a fair price for the taxpayer. Are they becoming victims of profiteering or of contractors trying to get ridiculously high margins at the expense of the taxpayer. But the reality is in a performance based logistic environment, all of that is irrelevant. Because if you set the price and you're saving money, whether the contractor makes money or not, or what the percentage of the margin is irrelevant, the taxpayer and the department still is saving money. And, it's getting better performance and it's driving better readiness rates and it's driving innovation.

And so it requires a culture change, or a different mindset in order to fully embrace this. And we see the same restrictions holding up things like commercial off the shelf or other things too. That concern with cost, contractor price and margin, which has become a cultural issue in DOD. So I think with that, I'll let it go and turn it over to

George.

MR. MITCHELL: Thank you.

MR. O'HANLON: Actually, George, I'm going to ask one follow up to Jay, just because I want to make sure for the general audience, we get this sort of primer material on the table too. And maybe you wanted to go in this direction. But just to follow up on what Jay said, I want to ask, so Jay, to make sure that we get savings out of any given program when we apply PBL, does that mean that the standard way to apply it is first, after a piece of equipment comes into use, to operate it by a fee for service model for a couple of years, develop data on how much it tends to cost and only then solicit a PBL contract. And therefore, you can really document, individually, case by case, that you're saving money for whatever specific engine or aircraft or helicopter or ship or what have you. Or, are there ways to anticipate what those costs are and be fairly confident and say you can go right to a PBL from the get go?

MR. DEFRANK: I think that it's possible now to go right to a PBL from the get go. If you can, if you can reach an agreement with the customers as to what the readiness rate that they want is and what they're willing to pay for it, you can do that. Now, with the cultural issues, the way you described, is certainly one that would probably be more palatable. But there are, you know, particularly, if you take something like the C-17, it's basically a commercial, off the shelf product. It's a PW2000 engine that powered the Boeing 757. So you have that type of data that you can apply. But then, the good aspect of a PBL is when you incent the contractor, it tends to actually get better because of that innovation element you saw with BMW or that we applied in the C-17 too. So the data that you contract it at, use to come with your original agreement is actually only a snapshot in time. It actually tends to improve and the benefits tend to improve also.

MR. O'HANLON: Excellent. Go ahead. Now, George, please, over to

you.

MR. MITCHELL: Before I introduce myself, I'm going to try to answer that last question a little bit differently. At Sikorsky Aircraft, we have a relatively new product called the S-92, which is a commercial aircraft. We have about 350 that are in the field. And each of those aircraft leaves the factory with a total assurance program, which is a commercial version of a PBL. So right out of the gate, those aircraft leave with a free, free maintenance program, similar to BMW. And the value that we gain as the OEM manufacturer is that those aircraft are instrumented, they have health monitoring systems onboard. The operators are able to download their data to a laptop computer nightly and that data is analyzed and sent back to us. We then look for trends and patterns, whether it be vibration, thermal expansion, you know, departures. And we use that data to predict and proactively maintain that product, so that, you know, we get a very high utilization on aircraft.

So if you were a fleet operator, the key to make money commercially is to have fewer helicopters, not more. So having a proactive maintenance approach where when the aircraft is down overnight, you're able to maintain something in advance of it actually breaking, you can almost ensure a 95 to a 96 percent aircraft availability, which allows the operator to have fewer aircraft in their fleet. And they're saving millions of dollars of capital expense by not having to buy four helicopters to do the mission of three. So they buy three, they fly three every day. They don't have to have that fourth one sitting out on the tarmac consuming capital, taxes, resources, maintenance, consuming parts. So it really becomes a very economical, analytical, working smarter than harder type analysis. So hopefully that helps. But we're doing the same thing with the DOD.

MR. O'HANLON: Thank you. And now, please over to you for your opening.

MR. MITCHELL: Now, it's my turn? Okay. Thank you.

MR. O'HANLON: And thanks for being here.

MR. MITCHELL: Good morning, everyone. Thanks, Brookings for having me here. It's a pleasure to meet all of you. My name is George Mitchell. I'm a vice-president at Sikorsky Aircraft, responsible for military after market. I have the pleasure of having within my business a portfolio of two successful PBL programs. One is a joint venture with Lockheed-Martin. It's called the Maritime Helicopter Support Company. It takes; it services 450 Navy Seahawk helicopters. We also have a Sikorsky only program on the CH-53, heavy-lift for the Marine Corps, 200 aircraft. It's also very successful. This year, we were selected to be one of the top nine DOD suppliers to the U.S. Navy as part of our MISCO partnership. Our PBL has won many awards over the years. We're now going into our eleventh year of PBL. We're currently going through contract renewal for the next five years. It's been a very good success story.

The Navy has grown our PBL from one part number, back in 2003, to today; it's up to 1,600 part numbers, covering literally the tip of the blade to the tail of the aircraft, all of the components on the entire aircraft. As you heard earlier, really the benefit to the customer, which in this case is the U.S. Navy, U.S. government, is that we really get paid to keep aircraft available, so material availability is the metric. You have to have the right metrics in a PBL to make sure that end user gets what they're really requesting or wanting. So, in our case, it's parts supply, it's repairs, it's supply chain management, it's reliability, obsolescence planning, a lot of the things that quite frankly, the government may not be that good at. So, they've outsourced to us and we're very effective at it.

Our partner, Lockheed-Martin takes care of the avionic components on the aircraft and we take care of the physical, mechanical helicopter. So, all in all, we've

got about 15 years of PBL experience at Sikorsky. Overall, the Seahawk PBL has saved $60 million since 2003. It was verified via University of Maryland independent survey, study, commissioned by the Navy. And, you know, it continues to prove, like today, right now, today we have one backorder. And that's an item that a soldier went to the shelf and there was an empty shelf. There's one item that they're missing.

To put that in context, when we took over the contract back in 2003, there were 800 backorders. It's not unusual to have none. We have full supply on every part number that, that the service may need. We get paid by the flight hour, so depending on how much the aircraft are used, there's a band that determines the price. So that the goal is having common metrics that really impact the end user to make sure that the contractor, in that case, it would be us, are incentivized and motivated to meet the metrics that are important to the end user, aligning the contract to get to that end, and everyone working in the supply chain to achieve that goal.

MR. O'HANLON: Excellent.

MR. MITCHELL: Thank you.

MR. O'HANLON: I've got more questions for you, but I think I'll wait and ask Allan to give his opening, and then we'll come back and talk about this a bit more. So, Allan, thank you for being here as well.

MR. BANGHART: Yeah, great. Thank you very much. I co-lead the Deloitte Defense Supply Chain Practice, long title, so, and I spent the better part of the last four years up to my belly button in PBL so I am fairly well exposed to it. I'm a career DOD logistician. That's all I've ever done. I wasn't a PBL advocate. I was sort of ambivalent about it until I, we began supporting OSD, and I've become a little bit of a zealot and you'll probably catch that as we go through here. But you start to look at the facts.

I'm going to answer, or at least attempt to answer your question and maybe echo your point, Jack, about in terms of the dollar savings that are available. We took a look at 21 weapons systems back in Proof Point, which was actually completed at the very end of 2011, January, 2012. So it's not quite that old. There were only 15 of the 21 weapons systems we looked at had at least moderate adherence to the PBL tenets. So we were given systems to take a look at which really weren't PBLs, which was very instructive, because as we ranked them from the most adherent to the tenets to the least, you could see the benefits starting to trail off fairly dramatically. So by the time you got down to the bottom of that list, there were really, uh, costs went up.

Interestingly enough, the services got exactly what they were looking for. They weren't looking for cost savings, they were looking for performance. And they did get what they were looking for. But we saw a savings that ranged, for at least moderate adherence, from the mid single digits up to 70 percent. Now, think about that, okay. And so, there's always a danger when you throw big numbers out on the table that you get in trouble. And so as we were going through the dialog with the OSD folks we were working for, we had some recommendations about the range of savings that would be available to the government.

And when you're talking about $150, $160, $170 billion a year in spend and then you apply that percentage to it that gets to be a real scary number. Now, obviously, you're never going to put all of your equipment under PBL arrangements. There's reasons why you wouldn't do it. Brand new, emerging technology, I think the F-22 is a good example of one that is sort of easing its way into the PBL arrangement. But let's say you cut that in half to $70 billion or $75 billion, and let's say you take 20 percent of that, that's still a really big number.

Again we were, in our report, we put in there 5 to 20 percent savings.

We think that's conservative. The work that we've done for the government since Proof Point was completed indicates that that number may be conservative. We are seeing real major savings opportunities out there. And those are savings as a cost per unit of performance, right. Okay, as opposed to absolute savings on a specific part. One of the complaints that we would hear is that well, you know, my part went from $100 to $120 after PBL. Yep, in the meantime, between failure went from 100 hours to 1,000 hours. Okay, so now you're buying them one-tenth of the time that you did before, because industry came through and improved the reliability of it to drive down their costs to serve, right. So I mean, so, it, they work.

So that, that particular debate is really over. The facts are out there. Everyone of the 15 weapons systems that had at least minimal adherence to PBL tenets saw costs and performance improvements, every single one. So, so why hasn't there been broader deployment of PBL I think is the issue. There's really two things that we observed and that we're working on right now. And the one of them is the skill sets of the organic workforce, okay. To put a PBL in place, you need to understand, is if you're a DOD government employee, you need to understand a couple of things. You need to have a fairly deep understanding of the PBL strategy itself. And then you need to understand how to incentivize industry, which is foreign to government professionals, okay. And then you have to behave like that as you go through the contract negotiation process.

And as it turns it, it's not that there are no strong PBL professionals in the, on the DOD side, or in the government side. There are, but it's a very small number. And having been around this program now for the last four years, you can almost identify the people who really get end to end, the range of this thing. It's a very small number, a couple thousand, maybe, right. And you simply can't broadly deploy when you have that

limited kind of a workforce of folks who really understand it.

The other half, the other big impediment in addition to skill sets, is establishing the conditions within the department which will incentivize the organic workforce to embrace those new skill sets, to engage industry and to press on with a PBL. And there's some impediments to doing that. There are budgetary impediments, there are control impediments, there are perceived core and 50/50, perceived core and 50/50 impediments. There are all those things out there. And we also, if you go back to 2010, which was the original reason that OSD engaged us, a lot of really nasty things being said by some fairly significant folks about performance based logistics. That was the whole idea of Proof Point, was to just talk all the comments that were not substantiated by fact off the table and get the facts out there, whatever those facts might be.

So, that, the public debate about PBL being effective has really gone away. That does not mean that every senior executive in the Department of Defense is wildly enthusiastic. It doesn't mean that every senior executive in the Department of Defense understands and has embraced or internalized the strategy. Things, they've already been mentioned here. Caps on profitability, worrying about profitability and building those kinds of constraints into a PBL contract really make it much more difficult and prolong the process. And, oh, by the way, to the extent that you, the government attempts to hold industry down, they're holding down their cost per unit of savings. Cost per unit of performance savings opportunities. It really, it's a balancing act. It's not the government giving more profit to industry. It's the government asking for a reduction in cost per unit of performance, and in return for that, allowing industry the opportunity, not given, but the opportunity to earn, you know, a better profit margin.

It works. There are impediments. Workforce skill sets, which, oh by the

way, you would expect. These folks have been doing this transactional logistics for the last 30 years or for however long they've been in the government. You would not expect them to understand PBL. And the other one is establishing the conditions within the department to fix it.

You made a comment about, maybe it was Jack, about not having an advocate. I, my sense is there's been a real sea change inside the Department of Defense over the last six or seven months or so. Secretary Kendall, Secretary Estevez, and Secretary Peters have all made PBL top of the list of things to do. I think you mentioned the Better Buying Power series, Mr. Kendall, Secretary Kendall, excuse me, almost never speaks publicly without mentioning performance based logistics. He has levied a requirement on the services to, and the agencies that (inaudible) acquisition executives to report the status, progress with respect to PBLs on a quarterly basis. So we now have the most senior acquisition executive in the department who is looking at the numbers of what's happening. So I think that's a good thing. Secretary Peters just awarded a contract to help build the services skill sets, PBL development skill sets, so I think that's a very positive thing. Again, I think we're headed in the right direction, I think we do have strong advocates in the Department of Defense.

And then, the final point, this is not going to happen overnight. Now, think about a workforce that on average is 50 years or, or 48 years old and has been doing transactional logistics since the day they came in. They became successful doing transactional logistics. And now the department is asking them to abandon that skill set that made them so successful, okay, and embrace an entirely new one. That's going to take some time, okay. I think we're on the right path, but this is a three or four year journey, maybe a four or five or six year journey to get, to turn the ship around and heading in the right direction.

MR. O'HANLON: Excellent. Very clear and helpful opening presentations. Now, there are three general topics I want to bear down on a little bit more with your help and then we'll go to the audience for your questions. Let me just mention what they are. First, I want, I'd like to relate this issue of PBL to other ideas in the reform debate that are sometimes mentioned and ask you to explain the linkages. I'll come to that subject in a little bit. But I'm thinking about things like strategic souring within operations and maintenance, but also the idea that we shouldn't have limits on what percent of maintenance is done by the government depots, the 50/50 rule and so forth. So I would like to get to that in a minute.

And I also again, want to bear down more on this question of just how many dollar savings are really available. So, you mentioned $170 billion a year, maybe half of that being more realistically an area we could apply this concept to. I'd like to just help people understand those numbers a little more. But I want to begin, so that's my second topic. But my first, I want to begin with this, is to actually air out, for the benefit of all of us, a little bit of what the critiques of PBL have been historically and are there any cases where it's actually not a good idea. And are there any cases, even if the critiques have been generally incorrect, are there any kinds of programs, new technologies, unproven technologies, where the contractor would be at too great of a risk, perhaps, to promise in advance exactly how much it will deliver in terms of mission capable rate for a given price.

Are there any cases where PBL is not a good idea? So, just to rephrase that question and then maybe we can just work down the panel. Can you give us -- a two part question. Can you give us a little sense of what critiques of PBL historically have been made that are actually wrong. But also, the flip side, a couple of examples of where PBL may be not be applicable, if there are any. And maybe we can start with Jay and

just work down.

MR. DEFRANK: Sure. Well, I think I'll focus on four of the, you know, what we consider the myths of PBLs. The first one is under a PBL, the government can't determine if it's getting a fair price for that. I mean I think that's been an impediment. That's one of the ones that I talked about earlier, we'd been talking about as to what margin is acceptable, which is a mindset from the cost plus environment where many contracts are done where the government fixes, you know, they determine your cost and allow you to make a certain profit about it. And that's the mindset for a long time. PBLs, actually your margin is irrelevant because that's not what the government's controlling, but it's a difficult mindset. And so the government has to accept that it can get a fair price. So we've talked about the metric being availability, readiness or performance, hence the performance in performance based logistics. And the government is going to have to be comfortable with the fact that that metric is good enough in the margins, or actually part of the incentive that drives some of the other positive aspects of it, such as the innovation side of it and the efficiencies that come along with it.

So that would be one. The other one is it stymies competition. And in, to some extent, if you look at competition with competing companies, there could be some elements to that. But it, it's different, because actually some of the greatest benefits in performance based logistics is when it's performed by the OEM because you understand the technology and the innovation benefits that you get are often greater with the OEM. But you're actually competing against yourself, because you make a commitment that you're going to be able to deliver something at a better price and then you actually have to go out and do it. So you're competing against the commitments that you've made.

MR. O'HANLON: OEM, by the way, original equipment--

MR. DEFRANK: Original equipment manu- thank you, Mike, for that. So

that's the second one is that it stymies competition. The third one is that it erodes the core, or the skill set that Allan mentioned before too. But actually, in our experience, it doesn't affect it because you're not contracting to do the wrench turning, the basic technical, mechanical skills, at least in our case, we're not. We're contracting to provide the readiness, which means manage the supply chain, and the, the basic logistics associated with that, and the spare parts stream associated with that. And that goes to the 50/50 side with the government having the skill set available too, which it's still inherent because you do a PBL in partnership with your government customer. We're each doing what's most efficient and the services that you're providing are services that aren't inherently governmental when you do it. So I would say those would be the four prominent myths that we deal with regularly with PBLs.

MR. O'HANLON: George?

MR. MITCHELL: I would echo the profitability. I think back to the Deloitte study a couple of years ago, Proof Point. I think that was one of the things that was the misnomer, where egregious profits were used as a term that were circulated in the press. But ultimately, I think the missing piece of that equation is the investment that companies make. There's a tremendous amount of capital reinvestment. There's a tremendous amount of three to five years worth of supply chain activity where parts have to be committed, inventory carrying, cost of money where in the first year of a PBL, it's not very profitable at all. But by the fifth year, after you start realizing some of those strategic investments, the reliability improvements, the new design and engineering projects that you took on in the first year start to reap benefit in years three, four and five, where you're not replacing components on wing as often.

So the way a PBL works is it's basically like the BMW model where, you know, the traditional model is you just keep throwing parts at an air vehicle or a vehicle

on the ground when they break. What a PBL does is it brings a new level of thought to the process, where you'll learn from those repairs. As components are failing, you do an analysis to figure out what can be done to make that part more reliable. What can be done to make that part stay on that vehicle longer. And the benefit to the end user is a more reliable product, a product that's available, they put the key in it, and they drive it whenever they want to.

So there's a lot of goodness that comes from being able to use the equipment that you've purchased. But really the key, I think the missing link to some of the misunderstandings on PBLs is the amount of investments that companies have to make to have a successful PBL. To the tune of millions, that that cost may not be directly (inaudible) 15 reportable. It could be in overhead, it could be in corporate capital. So there's a big investment that gets lost in the profit analysis.

MR. O'HANLON: Thank you.

MR. MITCHELL: You're welcome.

MR. O'HANLON: Allan?

MR. BANGHART: So in terms of systems or subsystems or components, which might not be good candidates for PBL today, one of them is emerging technology. If the commercial industry is unable to forecast demand anywhere in the neighborhood of what kind of the failure rates are going to be, probably not a great candidate for a PBL, maybe a PBL light. There are ways that you can deal with that in the contract.

The other, sort of at the other end of the spectrum would be a weapons systems that's going to exit the inventory in the next two or three years. This goes back to investment issue, right. If you've got a weapons system that's not under PBL and that's going to exit the inventory, and you have to go through 15, 18, 24 months to put a PBL in

place, you may be wasting your time.

But having said that, there's some, in the DOD, there's over a thousand systems, there's several thousand subsystems and there are hundreds of thousands of reparables, okay, hundreds of thousands of reparables. And today, at least when we last took the inventory, there are about 90 performance based logistics agreements in place. Now, those cover, some of them cover multiple subsystems, several of them cover lots of components, right, so it's not like it's one component. But our estimate of the number of systems, subsystems and components that are covered by a system, so the spread between where we are today and where the department can go is huge.

I mean and you don't have to go from a few systems all the way up to a thousand plus systems. You only have to go to 300 or 400 where you're way up in the many billions of dollars of savings on an annual basis.

MR. O'HANLON: Fine. Now that, so this next topic, I'd like to ask you each to say a word about. I don't want to -- there's no way we could do justice to this, but I would like to just get your quick thoughts on how to understand this topic relative to some of the other big picture ideas that are out there in the defense reform and efficiency debate. And again, I mentioned earlier, one of them is certainly the question of eliminating the cap on what percent of maintenance can be done by the private sector, and therefore what percent has to be done by government depots. And sort of an obvious link but maybe one of you wants to speak to that. I'm not asking each one of you to speak to all of these. But a second topic I'll put on the table before turning over to you and maybe starting this time with Allan would be this notion of strategic sourcing, which the Government Accountability Office and others have written about.

The basic idea that if the DOD would get more systematic and buy things in bulk and decide to, instead of the silly simple analogy is instead of getting 17 different sized

paper clips from 17 different producers, just get two types of paper clips and make general use of them and get them at a discount because they're buying in bulk. I don't know if strategic sourcing is something that is subsumed within PBLs, or if it's a separate topic of defense efficiency reform. But that would be my question on that one for anybody who wants to speak to that. So if I could start with Allan.

MR. BANGHART: So if you, strategic sourcing, public private partnerships, performance based logistics are all sort of tiered down the same thing. The umbrella topic, the way we look at it, the umbrella topic is strategic sourcing, clearly public private partnerships and PBL play a role in that. In terms of the broader implications, and I'm going to give you a specific example and this applies to the 50/50 and core also, is that in a BAE was doing ALQ-126, excuse me, FRC Jacksonville, Fleet Readiness Center, Jacksonville, the Navy activity was doing the repair for the ALQ-126 organically, at the depot down there.

Back in 2005, they put a PBL in place with the OEM BAE, so now BAE became the integrator and got to decide where those repairs were going to be done. BAE made a rather significant investment in a couple of things. One, they leaned out their own production lines. They sent a team down to FRC Jacksonville and helped leaned out their production lines. And then they spent a fair amount of money taking a look at high demand, low mean time between failure parts to drive up the mean time between failure to drive down their costs to do repairs, which would drive up their return, right. It worked exactly the way that it was supposed to.

The interesting thing about this was is that after the PBL was put in place, there was actually more work being done in FRC Jacksonville than there was before. And the reason is before, before the PBL when the production line at Jacksonville reached capacity, they just shipped the work to BAE to be done up there. They contracted out on

a transactional basis. Post PBL, because their production lines had been leaned out and the quality of the product that it was putting out was better, basically BAE subbed the wrench turning back to the NAVY. So, it was a win for the depot, more production, it was a huge win for the Warfighter. They went from about 48 percent material availability to 100 percent material availability, win for the service because of the service aspect of it. And it was a win for BAE because they made a pretty decent bottom line. So that was one where we got the industrial base aligned around this particular one and everybody came out ahead.

MR. O'HANLON: Okay. George.

MR. MITCHELL: It's a great example. We have a similar experience with the Fleet Readiness Center, East, which is in Pax River, Maryland, I'm sorry, Cherry Point, North Carolina, 53s, and same exact story where we've end loaded more work into the Navy depot after PBL than they had before by leaning out their process, by teaching them new ways to repair parts, to bringing technology from the OEM to the government facility. We have people that are co-located at the site that manage inventory and make sure that they have the right parts. We also work very actively with the Navy for other OEMs if there are shortages or parts that they need to get their items repaired. So it ends up being a win-win.

And as far as 50/50, you know, there are examples like we have a partnership with Corpus Christi Army Depot where it's almost 0/100 where the depot does all the repairs and what's left over for commercial repair has been waning since we're in a period of reducing operating tempo reductions. So in that case, it's not really a winner for industry, but you know, it's sort of the reality of where we are right now with the decreasing budgets. But ultimately, I think there's an opportunity to revisit, to re-explore the 50/50 and try to make the best, the best decision for the taxpayer. You know,

wherever the lowest costs should be, it should be a competitive environment. The depot should have to compete and be as cost effective as well.

MR. O'HANLON: Just one clarifying question before we go on to Jay. Based on what both of you have said Allan and George, I think I hear you saying, please correct me if I'm wrong, that even though very few people in your line of work, or mine, or most economists, most technicians, would advocate the 50/50 rule because it's essentially an artificial straightjacket imposed for political reasons. Nonetheless, there are things you can do, even within that rule that allow for a lot more use of this PBL concept.

MR. BANGHART: Oh, absolutely, yeah. All of our PBLs have government partnerships. So it's part of the deal where, you know, bringing the technology, teaching, sharing the work, in most cases the depots are lower cost labor, so you're able to get a benefit by using the organic capability at the depots. So it definitely is a partnership. You know, it sort of turns into win-win, to your point about it's a jobs program for the local area, as well as a way to improve readiness and get aircraft and ground vehicles to a higher operating tempo.

MR. MITCHELL: Yeah. I mean what we saw is was that the public private partnership actually is a 50/50 improver and a core improver, right, because we see work moving, and historically people would say, well, I've got 50/50 or I've got core issues I've got to deal with. Okay, fine. Get a PBL and drive the work into the depot, right. And it's every, it can be used every bit as much as that kind of a tool as the other way around. In fact, it gives you the opportunity to really tailor the larger industrial base. You know, commercial industry and the government, figuring out where the work ought to be done, okay within the constraints of core and 50/50, and have it done most efficiently there.

MR. BANGHART: So back to my earlier point about the key performance

parameters or like what's in the contract. That definitely can be an item that's added to the contract where one of the contract requirements is a certain percent of work that should be loaded. And in all of our cases, we've exceeded that goal by probably a factor of two to three.

MR. O'HANLON: Okay.

MR. DEFRANK: I don't know that I have a lot to add to the answers that were there, but I think that one of the key elements that you heard that were stressed by both Allan and George was this concept of partnership and PBLs work along the lines of a partnership. And we do what is most efficient for each of us, so that you're able to maintain the core skills that are a key part of the depot aspect and 50/50, so that the government has those skills inherent, organically. But they work with us and they learn as George made very clear, you know, we work and lean out what the government is doing. Our engineers work with people and there are manufacturing experts and we apply best practices that we learn, both in our commercial and our military business, Pratt & Whitney were 75 percent commercial, 25 percent governmental. And in fact, even on the commercial side, there's a big movement now to fleet management plans, which are basically PBLs for the commercial products. And even with our very newest products, you know, we're introducing a whole new family of jet engines, the geared turbo fan engines, and a lot of the, a lot of our commercial customers are opting for the fleet maintenance plans right away even with the new technology, much like the BMW, so that we assume all the risk of the cost.

But like George mentioned and Allan mentioned, it's a long term commitment. You know, you often, and this is one of the impediments with the government is we need the willingness to make the long term agreements, because it's not cost effective on a year by year basis. You need those additional years to reap the benefits and to make the

capital investments required the innovation side of it.

MR. O'HANLON: Which, by the way, I think underscores a point we've all been touching on, which is that with sequestration looming in fiscal 2016, as much as we're hearing enthusiasm for the concept here, this is not a panacea that's going to, as you said earlier, help us live within sequestration, because a realistic goal for 2016 is going to be a lot less savings than what you might get to in 2020.

So let me use that as a segue to my last question and it's again this sort of top line question. Which, from a Brookings point of view and in terms of why I was excited about the idea of having this panel, is ultimately a key question for us, trying to link this kind of a very dynamic and exiting new idea, not totally new, but hopefully new with some of its support and its credibility and the data behind it, to link this to the defense top line debate, and just how much can we save in broad terms. So I want, a couple of you have already hinted at your overall best guestimate, but let me put it to you in this way. We're talking primarily about the operations and maintenance budget. And I'm going to leave aside war costs on the grounds that they are going down and they're a lot less than they used to be anyway, although that admittedly pushes numbers up a little bit in the short term.

The operations and maintenance budget today for the Department of Defense, I think is in the range of $180 billion a year. Of that $180 billion, there are different ways to subdivide it. And as most of you know, a big chunk of that money is the civilian workforce. Now, some of that civilian workforce is doing maintenance, so it may be a piece of the pie we can save money in by using PBL. But to first order, that's a little harder proposition, that takes a little bit more of a longer term perspective. Some of that money is also used for military health care and now again, much of these are overlapping categories because some of the $80 billion for civilians is also part of what goes towards

DOD healthcare.

My point is that let's say now I'm up to about $100 billion in costs that is not really getting to the direct equipment maintenance issue yet. It's about half of the ONM budget that is for other things, military healthcare, civilian workforce, and then of course, smaller things like recruiting, certain kinds of activities at bases and infrastructure. Some of that is covered out of construction budgets. Bottom line, when I do the math in very rough terms, it looks to me like about half, maybe a little less than half, of the overall operations and maintenance budget is really for equipment maintenance and repair.

So I think the base from which we're beginning this discussion is roughly let's say, $80 billion a year. And of that $80 billion, there's a certain small fraction that we probably don't want to apply PBL to, even in a perfect world, for the reasons that Allan highlighted. So now we're down to let's say about a $70 billion number, which I think, Allan, is the number you gave for the sort of the size of the pie that you began thinking we could apply PBL to in the abstract. I guess what I'm doing is sort of agreeing with you, but trying to get to that number through a back of the envelope calculation.

And then, just as a provocation to the three of you, now, if I could ask you to go down the line, starting with Jay, first of all, you can challenge my $70 billion a year number if you want. But if I now apply the PBL concept to that $70 billion, and I hope that I can get let's say 5 to 10 percent savings, maybe even more, over time, what that means is in the short term, I probably can get a couple billion a year more in savings from using PBLs much more broadly. Maybe by the end of the decade, I could be closer to the range of $5 billion to $8 billion maybe even $10 billion a year, relative to current expense. Those are my numbers. But I'm putting that out as a deliberate provocation to ask you to give us your numbers of how to think about the pot of money that may be saved, and

therefore used for other purposes, either for readiness, for equipment purchases or to reduce the deficit if we were to apply the PBL concept more generally.

So again, my hypothesis is we're looking at medium to long term savings of $5 billion to $10 billion a year if we apply this concept comprehensively, but I would be very curious for your numbers.

MR. DEFRANK: So I'm not going to actually push back on your number. I'm going to reframe the question in another way. Let's say that the savings that are possible are $5 billion to $10 billion as you say, which I think is conservative but reasonable. The question is where else are you going to save that kind of money in the defense budget and with what pain. And then, what could you do if you had $5 billion to $7 billion in the budget. For example, we're working on a replacement engine for the Blackhawk helicopters and the Apache helicopters. It's a program called ITEP, Integrated Turbine Engine Program, or our version of it is called ATEC. What that engine does, the cost of that program minus life cycle cost, but the cost of that program is roughly $7 billion to outfit the, all of the existing Blackhawk and Apaches, roughly 7,000 with brand new engines. These new engines, by the government's requirement, have to be able to deliver 25 percent better fuel burn and 50 percent more power.

So with that, with our $7 billion that say we're saving this way, and the reason I'm going at it is you have tremendous life cycle costs savings, you know, in terms of fully burdened fuel, if you're saving 25 percent of the fuel burn on 7,000 engines in the U.S. fleet and you get 50 percent more power so you can operate from high hot locations and now you no longer have to use big Chinooks for small payload missions up there. You've saved a lot more money. So your $7 billion that you saved through PBL, rather than cutting someplace else, you're getting something that just drives all positive behaviors, innovation, readiness and savings and performance. And you can invest it in new

technology that further gives you greater savings. So it's a, to me, it's a savings that multiplies itself when it can be used for other things, when you consider the opportunity cost and the other alternatives.

MR. O'HANLON: Great. Thank you. George?

MR. MITCHELL: It's actually a difficult question to answer. I mean I know that our real life experience, I would just do the math. It would be about 10 percent, which is right in line with where you were going. What I don't know though is sometimes the numbers, the government savings numbers are not known. So what I can tell you is that from the fact that we have three successful five year contracts, we're going on what will be our 15th, 11th through 15th year that we are providing significant savings every five years incrementally down a stair step of savings. So I can't answer, because I don't know. What I do know is that the $60 million number that I quoted earlier has actually been published. So that was the result of a government, internal government analysis.

But I know in my gut that it's providing tremendous value. Contract values are decreasing. It is a far 15 environment, so we have to show our costs. Our costs get ratcheted and reset every fifth year. So it's, the first year of that new five year contract, the whole game starts all over again, back out on the supply chain, trying to get lower costs, better reliability. So it's a win-win from my seat.

I agree with what was said earlier about reinvesting. Our company is spending a lot of money in the raider technology. We invented a new aircraft called the X2 that set a speed record a couple of years ago, 260 knots. With that technology, we're building out our own company funding an aircraft that would fit the size of the armed aerial scout for the U.S. Army. That aircraft is going to go into flight tests probably in the next six weeks, this year. And that aircraft will revolutionize the Army mission. It also sets us up nicely for our company, as well as technology for faster, higher payload and

those aircraft will be fielded between 2030 and 2050, so quite far away. But in the short term, those savings can be reinvested and be force multipliers, to the earlier point.

MR. O'HANLON: By the way, that's a standard helicopter going almost as fast as an Osprey, right?

MR. MITCHELL: It is. It's a co-axial main rotor with a pusher prop and it'll carry, it's scalable, so it can be a heavy lift mission or a light scout. And the aircraft that we're building as a prototype will carry eight operators. It will fly 250 knots, and we're going to prove that technology in the next, this year, in a few weeks.

MR. O'HANLON: Thank you. Allan?

MR. BANGHART: Yeah, in terms of the savings, it's an interesting one and you know, I think the tangential savings are particularly important. And when we took a look at the savings of pre-PBL versus post-PBL in the Proof Point study, we only calculated the cost that we could put our hands on, right. And so particularly in the government, the activity base, in the DOD anyway, the activity base costing is not as strong as it might be. And so there are a lot of unidentifiable costs and unidentifiable benefits. None of those were included in the savings, which indicated single, middle single digits up to 70 percent savings.

The other thing that wasn't included in our savings, and there was one, there was a tip to tail PBL that we took a look at where the OEM said you need X number of these at this level of availability, but if we give you this level of availability, and extra 10 percent, you need about 10 percent fewer aircraft. Right, okay, and the service bought that. And they've been able, it's been a hugely successful PBL. So but none of those cost savings, the two extra aircraft, it was a fleet of 20, the two extra aircraft that the crews, the fuel, none of that stuff was factored in the savings that are out there.

Going back to your original question, what's the number? I think $10 billion in the

long run is a conservative number. In the long run, in the long run. I need to emphasize that.

MR. O'HANLON: As an annual, repeatable recurring savings?

MR. BANGHART: Annual, repeatable savings, right. But it's, that's in the long run. This goes back to the workforce skill sets and the speed of advance. We just, you can't transition as big and complex a workforce as the DOD has overnight. It just isn't going to happen. This is got to be in it for the long haul, put our head down and press forward.

MR. O'HANLON: Excellent.

MR. DEFRANK: Can I ask, Allan, a question?

MR. O'HANLON: Sure.

MR. DEFRANK: Allan, when you were doing your analysis of the potential savings, did you look at things such as the cost, to the government, of the current way of doing business in terms of determining cost and price data? It seems that there's an army of people out there whose mission is to determine what our costs are and what the pricing should be and if you move to the PBL, it would seem a lot less of that would be required.

MR. BANGHART: Yeah. So that's a great question, and the answer is yes, we did. And it sort of goes back to my activity based costing and the absence of really having a strong understanding what their own costs were. So, we did take a look at it. It just made our findings even more conservative than they would have been otherwise.

MR. O'HANLON: We've got about 20, 25 minutes for your questions. I want to take three at a time, and then we'll go down the panel, hopefully go through a couple of rounds. I would appreciate it, if you're able, to direct your question primarily to one person. If that's not possible, I understand. But why don't we begin up here in the front

row. We'll just work across the front row for the first round, since we've got three folks here, and then we'll work back.

MS. WORTHEIM: I'm Mitzi Wortheim with the Naval Postgraduate School. I worked for Art Cebrowski in '91 when we were trying to do all of this stuff. I was a part of the group that brought activity based costing into the defense department, so I love hearing. My question is first of all, why is there not a camera here today. This is for you. This is such an important story that the public needs to here. And I mean I kept trying to figure out how, where I would want to publish it. And it think you have to figure out a way to educate the voter, so you build up the support for these very interesting ideas that you're putting out. And I have lot of other questions.

MR. MAUCIONE: Hi, I'm Scott Maucione with Inside the Pentagon. I think this predominantly goes to Mr. Mitchell. I was just curious why are companies willing to make the risk of doing the PBL. You said that in the beginning, it really doesn't, it's not that profitable until later on. In the end, you need to make a profit. Is it worth it, that much?

MR. MITCHELL: The answer is yes and really--

MR. O'HANLON: Let them take the last question and then we'll go down.

MR. MITCHELL: Oh, I'm sorry. Sorry.

MS. ERWIN: Thank you. Sandra Erwin, with National Defense, also question for Mr. George Mitchell. You talked about your new helicopter design and all that's great, but the reality is, you know, in the military is all aging fleets. And we've heard from the Army and the Navy, especially that they're having real difficult time with costs with modernizing the fleets because industry tells them that the numbers are too low, that you have to have higher numbers to get cost efficiencies to modernize

helicopters. So I guess the question is that seems to be the reality with working with the military is you have to have small numbers. So is there a way to break out of that death spiral as they try to modernize their helicopter fleets?

MR. O'HANLON: I'll begin and then we'll just work down. Very quickly, I don't make decisions on cameras. We invite people to be here if they wish. Thankfully, we have the best part of the media in the form of very serious print media here. And, and I would also say that we are very grateful to have this kind of eloquence on this kind of a topic. To be honest, a lot of people, you know, a Brookings audience kind of pool of attendees would tend to say that sounds a little too technical for me. But I think these guys have helped make it come alive. And it links to the big top line debate and the nation's fiscal debate, which is why I'm excited about it, why I wanted to have this event. Which by the way, is my decision.

MS. WORTHEIM: Does Brookings not have (inaudible)

MR. O'HANLON: Well, let's get into that kind of stuff later, if you really want to get. The important point, the short answer is no, I don't have them. I don't have them at my beck and call. The important point is we are highlighted the subject, which by the way, is not a subject that think tanks typically highlight. But with the kind of eloquence we've got from this panel, I don't think this will be the last time that we're able to do this, because what these gentlemen have helped me do today is to make this issue feel real, feel like it's understandable and feel relevant to big pictures issues. So give us a little time. This is a first step. Thank you.

MR. MITCHELL: Okay, first question. So the answer is yes, PBLs are attractive to OEMs, to original equipment manufacturers as well as big companies because there's a lot of intel, a lot of information gained back from getting field data from your products that it can help you improve future designs. So when I talked about the

aircraft, that's built off of millions of flying hours of Blackhawk experience. So having, the Navy's been, thank you, yeah, the Navy's been the leader for PBLs from my perspective. They've been very proactive and I think they saw the future 10 years ago. So they moved very heavily into the PBL arena. The Army has been a little bit not quite as quick, but they're getting around to it.

So I think what's in it for the OEMs is one is we want to see our products actually work. So it's to our best advantage, a PBL really brings out the best in a company and makes sure that your product is utilized. So the scenarios we've painted with fewer aircraft available, 100 percent of the time really speak volumes for the reliability and durability and usability of your product. You don't want to leave it to someone else to say you know, I've got 50 parts shortages so half of my fleet is parked today. You want to be able to see your product going. So there's a sense of pride, there's a sense of making money and also learning from your products so that you can reinvest that know how into future designs.

And to your question, ma'am, you know, we have a very successful partnership with Corpus Christi Army Depot. And what they're doing there is they're taking old UH60A aircraft that were built back in the early 1980s and remanufacturing, recapitalizing those to modern day to UH60L aircraft. And that activity is being done with lean manufacturing, a lot of our involvement. We have 125 people that are co-located at the depot that work hand in glove with the army associates. And it's really a good program for us. It's not a PBL program. It's a depot partnership. It's PBL like. It's a great, tremendous public private partnership. But what we're able to do is get year over year material cost reduction, which saves the Army money, so it allows them to modernize more aircraft.

We hit a high water mark of 55 aircraft three years ago. Due to budget

cuts and sequester last year, they ended up cutting back to about 38 aircraft. But when those aircraft leave that, that production line, they're basically factory new. So that's one thing the Army is doing to reset and keep the aircraft viable. They also have other programs. You heard about ITEP, the engine. You also have the L-digitization effort that's underway to make those aircraft look more like the modern day UH60M. So there's a lot of activity underway.

MS. ERWIN: (off mic)?

MR. MITCHELL: Well, that's a tough question also, but I think in this environment, it's extremely difficult to get on contract, so I can't emphasize enough, you're talking like two to three years to get a contract. So companies are either forced to go ahead and invest in advance of a contract to position themselves to be successful on the first day of contract award, or it's a wait it out. And over those times, fortunately, the cost of money has been pretty low. So, there's going to be some escalation but I think for the most part, it's just more of the not getting anything done activity and more frustration with having to keep proposals active for a longer period of time doing recertifications, more DCA audits to keep the process alive, to eventually you'll get a contract. So not the direct answer, but sort of the pain we live in, being a contractor.

MR. O'HANLON: Allan, do want to add anything this round or wait for the next round?

MR. BANGHART: I'll wait.

MR. O'HANLON: Okay. So let's go to the second row, and I've got three there. So we'll just keeping our way back. This is nice and succinct, so maybe we can just do it this way. All three of you, please.

MR. DREW: Hi, James Drew, from Inside the Air Force. The Air Force is obviously looking to recapitalize with the combat rescue helicopter. Could you please

talk about future sustainment constructs that you want to see with those and whether you see that being performance based logistics. Also, they want to replace the Huey, their Blackhawk replacement for that. Just talk about what you want to do in terms of sustainment for that.

MS. SELIGMAN: Hi, it's Lara Seligman from Inside the Navy. This question is for Mr. DeFrank. I was wondering if you could talk a little bit about the F-135 program and how you plan on driving costs down there, whether you're planning on using a performance based logistics approach. And then, more specifically, could you talk about the engine fire that occurred this summer and can you give us an update on where you are with that, where the investigation is and where you are in terms of retrofitting the test aircraft with an interim fix.

MR. RABINOWTIZ: Hi, I'm Dave Rabinowitz and I have a question basically for anyone who wants to answer. In military hardware most of the actual wrench turning, especially in the field, is done by military personnel, not by contractors. With the PBL, how do you handle the issue of finger pointing when something goes wrong?

MR. BANGHART: What we've seen in a number of the PBL arrangements, is the KPI, or the key performance indicator, what the industry is being paid for is availability of a replacement material, so that when the artisan either in the field or the depot or wherever, reaches out his hand, the part fails, or the component fails, or the subsystem fails, is that available. That's a pretty typical KPI. And so, if you have a nice clean break in terms of roles and responsibilities, which needs to be embedded in the contract, it's not difficult to do.

MR. MITCHELL: I'll give you a real life example of Seahawk, SH60-romeo, Seahawk, main rotor blade, at four blades per helicopter, we were seeing a larger volume of repairs coming into our repair center. We map by month the quantity and

what's in the yard and what's got to flow through. And we're seeing a very high build up of blade repairs. So we began analyzing, we had our engineers to launch an engineering investigation as to what was going on, what could we do from a reliability standpoint to make the blade more robust. And low and behold, the simplest of problems. There were footprints on the blades. Literally, like boot marks. So, you know, we partnered with the Navy. So we went out with the Navy, and we reeducated all the maintainers. We launched our field service reps. I have people that work for me, 129 around the world, that are co-located with our customers. A simple e-mail blast with please go retrain the guys with the wrenches, so that once they get the blades off the aircraft, they secure them in their cans, their boxes before, and low and behold, the problem was solved. So it's not adversarial. It's really working together, a true partnership, getting the word out to the poor guy on the boat, ship, wherever he is that's doing maintenance.

MR. O'HANLON: So you mean the foot, that the feet were actually slightly bending the metal?

MR. MITCHELL: Well, it was actually crushing the core. So, they're actually composite, must like a lightweight boat. And if you put enough pressure, you'd actually dent the material. And it's a simple repair, but it is a repair. So once we did the analysis, we were able to diagnose what the problem was and get the word out.

MR. O'HANLON: Have a go with the other question.

MR. MITCHELL: Yeah, so CRH is a great program. We just won that program. CRH is structured that for the first five years, it's going to be a total contractor logistics support program. Not quite a PBL, but PBL like, almost a PBL. So within the first five years, when the aircraft are new, we'll provide 100 percent of the material to all of the 12 locations that the CRHs are deployed. Over the course of the five years, we'll do the maintenance at those bases, and with the goal that in parallel, the Air Force will

also train alongside our mechanics and our field service engineers to have organic capability. And by the sixth year, the plan right now is that the Air Force with take over. Our hope is that once we get the program rolling, and the Air Force is happy with it, we evolve into a PBL partnership. But that would be something in the future.

Now, as far as the Huey replacement program, there are about 65 aircraft that are fulfilling that mission today. There's been talk of using surplus UH60A, or A to L, the aircraft we were talking about earlier as a possible option. So I know that we've worked with the Air Force of late to try to put together some ROM estimates as to if that's feasible, what it would cost. So nothing has been decided at this point, but it is a very, it's a perfect mission for a Blackhawk, it's the right sized aircraft. It's common, so you have a warm supply chain. It would be a low cost, similar to the Army, so you get scale. It really makes good economic sense, but it's not a goal program, no.

MR. O'HANLON: Okay, time for one last round. So let's do three more if we could please. So we'll do the third and fourth rows. And I think what we're going to do is, I think I see five hands. If I could apologize to my friends here, to take notes on whichever questions are for you, we'll go through all five and then we'll be done. So we'll start over here and then weave our way across, please. And please, just one question apiece if you don't mind, for this lightening round.

MR. SEBASTI: Hi. My name is Mu Sebasti. I'm a government student at Georgetown University. Earlier, Mr. O'Hanlon and Mr. DeFrank both commented on their views on sequestration. I just, I'd appreciate if I could get a broader view of whether or not you think sequestration is reconcilable with PBL.

MS. YOUNG: My name is Lei Young and I was here all (inaudible). First, I appreciate your presentation, and now I want to ask you if you can answer the real problem that concerns us is that I think you know the department, almost any agency,

have a lot of abuse and waste. And you know that can be saved, the problems. Why can't they save themselves, or you can advise them or criticize them as an individual or as a professional, to tell them the process is wrong and they should change it. And I want to have some kind of comparison, the problem of privatization or outsourcing or private partnership. And I think you should come from this direction to say why this portion is wrong. Because I know a lot of abuse and waste and misleading that can occur from all these areas, rather than within the department or agency themselves. So I just wonder if you can say one of the main basic example is the Iran-Contra. See if you can save those abuse of the service, and that can be a tremendous help and that can be more transparency at least, the official record, they should be there in the agency, but in the private, you cannot exam their books or anything. And it can be a lot of false statement or concealment or cover up. So I just wondered if can comparison of this type of things.

MR. O'HANLON: Thank you. John.

MR. EVANS: Thanks. I think this is probably best for you Allan, just if I could ask. John Evans from Brookings. You talked a little bit about upfront costs, whether that is NRE or something else that drives that technology innovation. I think, I would ask you, do you think based on what we've got going on right now with our acquisition programs, that they are going to be agile enough to make PBL a good option as we move forward. Because I think we all have seen how things tend to bog down. We are kind of penny rich and pound poor, the way we spend money at DOD. And I think Sikorsky should be applauded for what they've done with X2 and S97. I mean taking that on and, as an army aviator I've seen the benefits of that. But could you just comment on whether or not you think the process is going to remain agile and flexible enough for us to embrace PBL, whether we need to.

MR. O'HANLON: Great. Jason.

MR. TAMA: Jason Tama, also from Brookings. I think it's a similar follow on question to John's. Maybe it's to George, or anybody else. We've talked solely about the ONM savings, but should there not be, with the logic and the results we've seen, should there not be a long term savings on capital acquisitions as well, because I think George, you talked about in the foreign military sales department and nobody's really talked about that. Thank you.

SPEAKER: Bob Einhaus from Brookings, and Al, this is really much for you. A big part of the maintenance budget is certainly the ship account. But I think of some of the issues with ships as far as deferred maintenance, as far as that last tactical mile. In other words, a part in (inaudible) can still be two weeks from getting to the ship. And also, the tiered readiness that a lot of ships are in that we can't necessarily afford 90 percent of that readiness all the time. So how could that model work for a ship, specifically I think of something like you'll have a scheduled maintenance period that then gets delayed because that ship has to double deploy kind of thing? So as far as contract, as far as those costs to the business to have to plan for those things really doesn't work. And it just seems to me that PBR seems to, PBL seems to crumble with those issues.

MR. O'HANLON: Great. Thank you for the questions. I'll take a stab at the first and then just pass the baton, and we'll each answer whichever ones we would like as we wrap up. So very quickly on sequestration, first there's an important distinction here. Sequestration as an actual way of cutting a given year's budget, and sequestration as a shorthand for a reduced level of defense spending. The first, sequestration, in other words, chopping off a certain percentage in January, of the previous appropriation, makes everything a disaster. And it probably is particular, others may correct me, particularly pernicious in some sense for PBL, because PBL is designed to incentivize a firm to do these upfront investments and then you get the benefit once that's been

completed. If you have a more traditional maintenance contract and you apply sequestration, what you get is you just get a shoddier state of your fleet of equipment. You do less maintenance because you have less money.

With PBL, it seems to me you're interrupting what's designed to be, what's conceptualized to be, an integrated process that requires some upfront investment to then really reap some benefits down the road. So I think it's one more argument against sequestration. It prevents you from doing strategic planning of any type. And PBL is a version or a form of strategic planning. And so I think it's particularly pernicious in that sense.

Sequestration as a shorthand for reduced defense spending, by contrast, I may not be in favor of it. Others may or may not be in favor of it, but in theory, once you know what the level is going to be, it doesn't impede you from doing PBLs. You might just have to retire some equipment; you might have to have a smaller force structure, whatever. But within that new force structure, you could still do PBLs. So I think you have to make that distinction and that's the way I would answer your question.

MR. DEFRANK: I think to add on to what Mike is saying and we may be saying the same thing is, I think one of the greatest impacts of sequestration on PBLs is that inhibits long term agreements. And for PBLs to be effective, you need to be able to make the long term agreement so that you do the investment up front, take the risk and then realize your savings as you move down. And so I think that's one of the more significant impacts with the Budget Control Act sequestration aspect. I agree with Mike's answer on the other part. Can we go to other questions?

MR. O'HANLON: Yes, whichever one you want.

MR. MITCHELL: Can I add to that? I tend to take a human factor approach to answer that question. I mean the customers that I deal with were impacted

dramatically by sequester. They had 14 furlough days. Corpus Christi Army Depot opted to take 14 long weekends, basically reduced their capacity by 30 percent right out of the gate. Nothing got done. You couldn't get a contract. It was very, very disruptive. So I hope that our lawmakers get together and find a solution because it's not fair to the people that are working. There are other ways to get the cost reduction. I know what private industry would do. You all work in private, for, you know, for a private company. How would your company cut costs? Would they do what our government did? Probably not.

MR. O'HANLON: Back to the lineup of questions.

MR. DEFRANK: I wanted to address the waste and abuse question that you had. I think one of the best ways to address that is through incentives to eliminate it rather than trying to hunt it out. I think trying to ferret out every element of waste or abuse in an organization the size of the Department of Defense is an all but impossible task and the cost of trying to do it is extensive as well. But if you incentivize, if you build in the right incentives, PBLs are a good example, where the contractor has to accept the risks and the costs and is incentivized to drive them down because as they get the cost down, they quite simply make more money. And so they work that out.

But that can be applied more broadly through the department and then measured through general metrics. You can't measure everything, but it's like if you have an automobile, you have a certain number of limited gauges that with the information they give you, gives you an idea that your engine is behaving properly and you're able to drive your vehicle. And so with a relatively limited number of good metrics and the right incentives, you may not get every last element of waste out of an organization like the DOD. But I think you can substantially drive it down and manage it.

MR. O'HANLON: Thank you. George.

MR. MITCHELL: Well I think the next few questions are sort of linked. I mean the one thing that I, kind of back to what a private company would do is you have to know your costs, actual costs. So we heard earlier about some of the things that were not included in the Deloitte study because they're just either covered through a public work budget or other ways or color of money within the system, quote unquote, the system. So the first step would be to define the actual costs. And then once you know the actual costs, then you can get to work to try to improve it, whether it be through lean manufacturing or other methodologies, supply chain management. So I think through better cost control, knowing your costs and then controlling the costs would be a tremendous step forward.

MR. O'HANLON: Excellent. And finally, Allan.

MR. BANGHART: Yes, a couple of points, one on the issue of acquisition and contracting community's agility versus the staying power to go forward. I have to tell you that's the $100,000 question. Secretary Kendall has engaged the contracting and acquisition community at the most senior level and made it clear what his direction is. It's broad deployment. He's here for two more years, okay. Secretary Estevez and Secretary Peters are lined up right behind him in driving that forward, so I think we have the right leadership at the top driving that. But it's, we live from administration to administration. And so for us, in terms of pushing this forward, that is one of our number one concerns, is does this have staying power. I don't really know the answer to that question. We do know that there are still some folks, particularly in the acquisition and contracting side who continue to focus on how much profit industry makes. Okay. It's the wrong metric. It doesn't make any difference. In fact, where we've seen some instances, not specifically where folks are willing to pay a higher price to make sure they could suppress industry profit or cap it, which I've got to tell you does

not make a whole lot of sense.

The second one was the issue of maritime applicability of PBLs and does it make sense or does the model fall apart there. Absolutely not. We're doing some work with a commercial maritime firm right now whose ships are underway essentially all the time, right. And we are putting in place a PBL for their most expensive equipment. And the other one, which is really kind of interesting, we just completed a small PBL engagement with NASA for the International Space Station, right. There is nothing more remote and hard to get to than the International Space Station and they are pressing forward to put together a PBL arrangement on that right now.

MR. O'HANLON: Thank you all very much for being here, and thanks especially to the panel for making this potential arcane topic really come alive and seem important to the broader public policy debate. Thanks for what you do. (Applause)

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