Reform Recommendations and Budget Implications

With Admiral Gary Roughead, Ellen Lord, and David L. Norquist, Moderated by Michael J. Boskin

MICHAEL J. BOSKIN: We've talked about lots of things. We have a remarkable military with great capabilities. Our adversaries and potential adversaries have been gearing up in a way that reduces our advantages. We have a lot of ideas about what the problems are and about what some solutions are. I think everybody wants us to have a stronger national defense and security system than we do. We've had many great ideas. But of course, none of this happens unless some reform happens. That is going to be the purpose of our next panel.

We've heard people complaining about the Pentagon, people complaining about Congress. The White House has sometimes been mentioned. Obviously, the American public has to be educated and brought along on a lot of this stuff. From my standpoint, we have a lot to improve, but we should be proud of many things we've done, and we should take those lessons and try to apply them.

MACKENZIE EAGLEN: I'm going to start with some potentially good news. There is a competition underway for a major contract at the Defense Department. I wasn't tracking it until recently, but it's a traditional defense company against a software company for a major defense acquisition program. Put it on your calendar the day that this happens. We don't know which one is going to win, but it's Palantir versus Raytheon. The construct of the contract is, build the

software first, and then we're going to build a truck. At least on the Palantir side, that's how they're doing it. Anduril is going to then build the truck after Palantir builds the software. It's remarkable. Watching who wins will be very interesting to the future of many questions we've been talking about.

I raise that because the Defense Department spends most of the money that goes in when you put aside the cost of labor. It goes back out the door in terms of purchases of goods, labor, IT, technology, and software. The discussion and the reform are often on one part of that pie, the purchase of things. That's not what the Defense Department predominantly buys anymore. Ask David [L. Norquist] and Ellen [Lord]. It's services, labor, IT, and software. Everybody wants to reform the purchasing of things. In fact, we're at the point now, as James Cunningham highlighted, that the three-decade modernization squeeze is here.

We don't buy enough things is not the problem anymore. I'd argue it's been over-reformed. There's been too much reform about procurement and not enough on every other part of the defense budget. The bottom line of my paper is "you're only serious about reform" if you're talking about two things. Reforming Congress. I can't do that, so I'm not going to talk about it, but Congress needs reforming, particularly appropriations. You're only serious about reform if you're talking about taking something away. What rules, regulations, and laws are you going to sunset, expire, scrub, and get rid of or end? Anyone who says, I've got ten thousand pages of this acquisition reform act to give you, I say, there's the door.

We don't need more additive band-aids to the problems that plague the Defense Department. What are you going to take away? Everything needs to be scrubbed for what needs to go away, what needs to end, and what needs to be sunsetted. Laws, rules, regs, everything.

That's where we are in the reform space because this is a department that's under constant reform, internal and external, as you saw in my paper. I use the term a little pejoratively later in my paper, "Defense Reform Theater." Not all of these efforts were that, of course. I say it meaning, often reform is for reform's sake to justify defense toplines, and politicians understand that. I get the politics of it, or at least that part of the politics of it. I'm no Mac Thornberry.

We are now at the point where saying fraud, waste, and abuse are the problem. Or these efficiencies and night courts are going to get you the dollars to buy new and more defense strategy. Not true. Too much of the defense budget is on autopilot. It's calcified. It's essentially fenced and fixed, so anything you want to do has to be additive in dollars. You want more strategy? You

need more money because that's just where we are. Too many constituencies, too many things that are immovable objects inside that budget, absent some sledgehammer, five-year effort where Kumbaya, all of Washington agrees—it just doesn't happen.

ROGER ZAKHEIM: I don't view myself as a reformer, and I wish reformers would not view themselves as reformers so much as they view themselves as builders. I think if the approach that reformers took was how we could build up the military, I think there would be far more alignment with the strategy, which of course, is the focus of my paper. This conference is rethinking defense budgeting. And I'll note that it's not rethinking the defense strategy. That's important because we ought to have a strategy-driven budget and not a budget-driven strategy. And I argue that if you analyze the current defense strategy and its predecessor, the one Secretary [Jim] Mattis put forward, that was a go-big strategy, there is no way to look at that strategy and come out with a conclusion that somehow we were not going to be a superpower, a major power that could operate in the three dominant regions of the world.

That is, you can't look at those strategies and come to the conclusion we're going to be something less. And if that's the case, we have a serious math problem. Now, one of the errors or elements that really is missing in each of the strategies, and not just the past two but as far back as I've been able to review since the NDS were [made] public, is that they never talk about budget. And so, what you have is a huge gap between the means and the ends. And so, throughout our discussion today, I have not heard anyone suggest somehow we should have a different strategy, a strategy that aims to do less. In which case, the focus on the budget should be how do we get more? Which, of course, is where I land. Now, we've done this before in terms of seriously resourcing a strategy and being committed to resourcing a strategy, building up a force. You have to go back forty years to the Reagan administration.

And James [Cunningham] hit on this in his presentation. Commanders in chief have done one of two things. They've either employed the force in armed conflict, or they've taken a peace dividend. In the intervening time between Reagan and where we are today, we have never consistently invested to build up the force to meet the strategy in peacetime. You can argue that we did invest in the force in Iraq and Afghanistan, but that was off-budget on the supplementals of the overseas contingency operations, and it wasn't lasting. And we've done away with much of it, and certainly, we didn't build a force to deal with the strategy we have today.

ADMIRAL GARY ROUGHEAD: Here are some thoughts from over the years around what I have been involved in. One of the issues we face is a perception problem. Yes, 76 percent [of the public] think we should spend more on defense. But you also have people that look at the topline and they can't believe you can't get done what you need to get done. It's really important to begin to pull away what I would call the investment account from the total budget, because I think that aligns with how people associate things to a budget. And right now, we have views skewed because of the cost of personnel and the cost of operations. So just changing how we talk about it would be important.

I would also say that because of the way we've evolved, the acquisition process has, in my view, become much more process and compliance driven than outcome driven. A program manager is going to get rewarded for checking the process boxes and will be forgiven for things that may not be delivered on time or may not deliver what they said they would. It's more, the reward is on that. I think it's also important, as we think about the budget and acquiring things, in particular, to keep in mind that it's really a bifurcated process. We have the need to determine what it is that we need, the budgeting that goes into deciding what we think we should spend on it. And then we have the acquisition process and have created an acquisition corps, and we've invested heavily in that acquisition corps with training, and they stay in that community. They have repetitive assignments, and maybe they move from program to program, but we have those who are on one half of the equation, who are there just in a haphazard way. And others may say no, there's more process to that. But I think we need to look at that. And I'm going to comment a bit on the budgeting and the requirements side.

I think Eric [Fanning], you mentioned it in different words, but the DoD still thinks of itself as the center of the universe, particularly as it comes to technology. And they'll be the techno tourists that come out to Silicon Valley and then go back, and they've been enlightened, and they can talk about technology, but it's no longer DoD that's in the driver's seat. Particularly in R&D if we want to do reforms there. One of the things that has to happen is there has to be a rationalization of the extensive laboratory enterprise that exists within the department. Tackling it is probably one of the hardest political things that you're going to do. But we acknowledge here that most of the R&D is occurring outside the department, yet we are spending a lot of money on DoD R&D infrastructure. We have a lot of human resources associated with that

enterprise. It would be good to just rationalize and question how much we're getting out of it.

This is not on the uniform side. I agree with Mike [Admiral Mullen], there is huge overhead within the civilian force, but we've also made it very onerous for people in industry to be able to come in and out. And I would venture to say if you were to go into the acquisition appointees in the Department of Defense, very few would have had extensive P&L [profit and loss] experience in running businesses and enterprises. The inability for those types of people to come in, go out, and not relinquish a great deal of wealth is a problem. And we've got to figure out how to do that.

Now, going back a little bit on the uniform side, particularly on the budget and the requirements, I think one of the most damaging things to the competencies and the experience within those who play in the budget and requirement process has been the need to adhere to the incentives for promotion within the Goldwater-Nichols Act. If I'm a young officer and have repeated tours in budgeting in the Pentagon, that's a good thing for our acquisition system. It's not a good thing for your promotion, because if you don't get that joint box checked, you're not going to get promoted, plain and simple. So what are we rewarding? And I think we have to be able to reward both. Goldwater-Nichols has done wonderful things for joint warfighting. But it has turned into a personnel system that is corrupting what we're all talking about here today, which is how we can become better acquirers of things.

The other thing about the acquisition force is that it's driven on the basis of a promotion system. And if we were to look at a lot of the programs within the department, the program managers are going to be assigned in ways that do not hinder their opportunities for promotion. They're not being assigned to programs to stay there until certain milestones are achieved. The argument I would get was, if this person doesn't get one of the milestone tours, they're not going to be able to get promoted. Outcome be damned, we're going to get the individual promoted. I would ask anyone here in Silicon Valley, would you move someone who you had made responsible for a key product and pull them out halfway through its development?

On the industrial base, there's a lot more talk about what's needed to improve it. But I think we have to realize that the workforce in the industrial base is also bifurcated. There's what I would call the technical side and then the undervalued trade and skill side. And the country has not incentivized people to become welders and electricians and occupations like that. That's a

very serious problem. And oh, by the way, a nuclear welder at Newport News is probably going to be knocking down around $200,000 a year. Not a bad profession.

The other thing that would be a healthy exercise is we are talking about how to improve ourselves, but China has become the manufacturing hub of the world. And as you look at their military equipment, it's starting to get pretty good. And I think it would be a good exercise for those in the acquisition communities to study how China is acquiring things and building things, and the quality processes they put in place. I look at their shipbuilding, both military and commercial, they're doing pretty good. So are we looking at them as a competitor in an industrial sense? That could incentivize and could stimulate some thinking on our part because they're not minor league anymore, in my mind.

Obviously, and we've talked about it here, it's far too hard to move new ideas and to allow the deployment of those new ideas. They get trapped in a very extensive and well-seasoned test and evaluation process. But it can inhibit getting those systems out to the school of hard knocks for people to try, for the young operators that we have to experiment with them, to bring it back so you can make improvements. It just takes far too long to do that.

And the other thing I would say, particularly as we think of what I would call the big breakthroughs, and this goes back to the process emphasis that we have: We're no longer betting on horses, we're betting on a process, we're betting on some technical specifications. But I just thought about what I consider to be the three really revolutionary changes that have taken place in military technology and how they transformed warfare in a significant way.

The first one was the Manhattan Project, which created nuclear warfare. The second one, being very parochial, was the nuclear submarine. And I would say the third, again, from a naval perspective, was integrated air and missile defense that's best manifested in the Aegis weapon system. What did those three things have in common? They had one person in charge of everything. [General Leslie] Groves for the Manhattan Project, [Admiral Hyman] Rickover for the nuclear submarine, and [Admiral] Wayne Meyer for Aegis. I was in a meeting, and Meyer said, "Never let people or money stand in the way of getting it done," because he could pull the threads on every single one. So on the big things, I really think that's the model to use, to bet on the horse. And that horse may not work out and gets fired, so put another horse in. But the idea that you can just move from program manager to program manager,

I think we're going to be wasting a lot of time. And oh, by the way, before Groves did the Manhattan Project, he also built the Pentagon in sixteen months. So if we can find another Groves, we may not have to have another conference, Michael [J. Boskin].

ELLEN LORD: So we were asked how do we achieve defense budgeting reform? I believe it takes fanatical focus and a bias for action. So what I'm going to do is talk about three areas that I believe deserve our focus. And then I challenge each and every one of you, as a call to action here, what can you do personally in the circles in which you travel, whether that be family, friends, and/or professional, to move this whole process along?

I want to address three things. One is overall communication. Two is adopting and buying commercial technology. And three is enabling allies and partners.

So to start with communication, I believe that we owe it to the US public to help them understand that we as a nation enjoy all of the economic benefits and security because of our national security efforts. Our economic security and our national security are very tightly interwoven. And it's hard to tell that story without relevant vignettes. I believe we all have the Ukraine theater as a fantastic example to talk about our near-peer threats, the way that commercial technology has been mobilized, and the art of the possible. However, you can't tell a story and have it be credible without the data behind it with a few facts and figures. And I think a lot of that has been provided here today.

Why is it important to tell this story? Because, frankly, it's a choice to get involved in national security. It's a choice for a student to study national security. It's a choice for a graduate to go and take a job in national security. It's a choice, once you've served in government or been in business, to come back and be part of the community trying to move things forward. And frankly, it takes reinforcing. It takes really having the feeling that you're part of something important. And I think all the people in this room can do that.

I think we also tend to communicate, we as a group writ large, to one another a lot. We think of Congress, and we typically think of [congressional committees]. We think of the executive branch. We might think a little bit about academia from time to time. We think a little bit about the investment community; venture capitalists, and private equity now. But we're not thinking as much about our neighbors and our friends who work in the telecommunications industry, or in the energy industry, or in a whole variety of

others that have national security challenges. And I think it's up to us to distill a few stories to make it real to them.

And then what do you do with that? We cannot compel Congress to change, and we cannot compel the executive branch to change without all of our citizens speaking up and articulating what the problem is to those people that they're voting for to put in office. So we need to really activate the average American to have the lexicon to talk very simply about this in a three-minute conversation, in a 30-minute conversation, or for experts in a three-hour version. So what can each of you do to activate your communities and tell the stories with what we've heard here today to get the process going? Because I think only then will we have reform.

The second point I want to talk about is the fact that fifty, sixty years ago, most of the critical technology was developed by the government and rolled out. Well, now we've flipped that script. It's really the commercial sector that's developing most of our innovative technology, yet we have not adjusted our planning, programming, budgeting, and execution processes. Perfect example: our systems today, most of our large warfighting systems, I would say, are hardware enabled yet software defined. So hardware is becoming the commodity. We know how to buy hardware to a degree. But we are treating software like it's hardware, along with discounting the fact that it takes infrastructure to develop software.

So I think when you're in the executive branch, you like to point at Congress all the time and say, "Oh, Congress is constraining us." What I learned, being totally ignorant going into DoD in 2017 as to how government really works, is that Congress actually has put a lot of reforms out there. What has not happened is that statute has not been translated into policy and then again into what they call at DoD implementation guidance, which means the procedures to operationalize policy. And then, even if all of that is done, we have fallen down in terms of training the workforce on how to do this.

So there are a lot of things that can be done, but the DoD workforce is not trained to do them, and they're very risk averse because there are few incentives to assume risk. And one area where I think DoD as part of government could be a little bit more like industry—it's not a one-for-one translation, but in industry, when you run a business, you have lawyers that are smart about different aspects of your business. You seek their best legal advice, and then you use your business acumen to determine what you're going to do. You do

not take their advice and implement it wholeheartedly with a few extra caveats to make sure you are not going to get in trouble. That is an issue in government, and we need to tell stories about how things are done in business and what are smart risks to take.

We talk about software being incredibly important in this age of digital engineering, with AI and machine learning, and how do we procure it? We have software pathfinder projects from Congress. The BA-8 authority addresses that we are constrained by colors of money: research, development, testing, and evaluation, procurement, or operation and maintenance [O&M], where you basically go to jail if you use the wrong color of money. And there's one-year money, two-year money, and three-year money, which causes you to do all sorts of unnatural acts at the end of the budget year. With the software color of money [BA-8], you can do the development, the production, and the sustainment with one budget line, one type of money. Why is this important? Because if you are doing contemporary coding, you are developing, producing, and maintaining on a daily basis and hopefully running your testing overnight. Yet we haven't caught up at DoD. And this is not all, "Yeah, Congress, bad DoD," but I think the issue is we're not talking about what we need to change in our procurement system to efficiently acquire software to quickly field capability to the warfighter. We're not effectively communicating examples of new authorities that allow practitioners to learn. We are not adequately developing the workforce to adopt new procurement practices.

I like to talk about creative compliance. We have generated a DoD program management and acquisition workforce that is motivated and rewarded to act like a pilot. And when you're a pilot, it's really important to go through that checklist, as everybody knows. But you know what? When you are a businessperson inside of DoD trying to work with technologists, you have to use what I call "creative compliance." You have to figure out how to do things legally, but utilizing the minimum number of steps, so you can get out of your own way and deliver capability downrange at the speed of relevance.

There is a lot we can do to tell stories to communicate about how we smartly adopt some commercial practices and how we can buy commercial services and goods. And there are authorities to do that. The dilemma is most of these are band-aids and workarounds. So our challenge is, how do we scale those authorities? We have the Defense Innovation Unit, we have the Strategic Capabilities Office, and we have the Rapid Capabilities Office.

You know what? Those groups have no special authorities. They just get a lot of senior leadership attention, they put the best and the brightest there, and they convene and get things done. We need to tell those stories to really spur everyone on to use these.

So finally, allies and partners. We know, and again, Ukraine is a great example of this, that we do not currently have the capability and capacity to manufacture everything we need. And the general public doesn't understand that a company just can't say, "Oh gee, I want to build a new plant. That's a good idea. We'll go ahead and do it." They have to go to their board of directors, and they have to have a business case analysis. They have to show there's going to be a return on that investment. Well, if there is not a demand signal that shows what's going to be purchased over a number of years, they can't make that business case.

So we're working through that, but we have allies and partners that want to develop manufacturing capability, and we are rather constipated in our system in terms of getting going with this. We have a lot of policies that require multiple agencies to approve exporting technical data critical to manufacturing weapons. Let's look at Australia. We have AUKUS [security partnership among Australia, the United Kingdom, and the United States]. Everybody thinks of nuclear-powered subs, as they should, but there's quantum capability, munitions, and other technologies and products called out in Pillar 2 of the policy. We have a little bit of an easy pass to get through some of the ITAR [International Traffic in Arms Regulations] regulations, get the technical data packages over there, and let the Australians use their capital to develop indigenous capability, not only to build weapons to help us against China, but also to help bolster what we have for our inventories and forward deploy and have all the distributed logistics that we need. Yet, we are not telling the story. We are not allowing lawmakers and those in the executive branch to understand what those authorities are and how to implement them, how to be actionable, and how to respond to the Australians and make this work.

So just a whole number of examples there. And I will finish with saying foreign military sales are a tortured process. But you know what? You can get in the fast lane if you know how to work it. Again, we're not telling the story. We're not getting it done. We can sell very complex weapons through direct commercial sales channels and perhaps have a little bit of a hybrid case with a little bit of FMS [Foreign Military Sales] or some of the critical technology.

We're not telling the story of how you can do that, and it's been done for decades, and it's been done very, very successfully.

So with that, I will just say I think if we ourselves individually take it upon ourselves to tell stories about what the art of the possible is, we can make a huge difference, not only for our communities, not only for our nation but for our allies and partners as well.

DAVID L. NORQUIST: First of all, I appreciate everyone's willingness to spend an entire day with me talking about the budget. The withdrawal symptoms are going away. I'm really feeling back in my element. So thank you for doing that for me.

A couple of quick comments on things people have already said; one about the importance of the defense industrial base and the importance of including that and its capacity as part of our plans for what we're looking for in the future because often that's not there. Roger [Zakheim] made a very effective point about funding to the strategy. You really put yourself at risk when you have a strategy that's in excess of your funding. You create some real vulnerabilities. Oriana [Skylar Mastro]'s comments about strike missiles. Long-range strike is one of the major things we emphasized when I was in the department. And of course, Elaine [McCusker]'s always wise comments about all the fun things that are funded in the defense budget that are not defense.

We've talked about a lot of reforms, so what I want to spend my time on here is, why do some reforms succeed, and why do others fail? And [as] I was trying to think how to go through this, Admiral Mullen gave me my perfect example, which is, for twenty years the Department of Defense said to Congress, "I have no interest in auditing the Department of Defense." And he was rightfully frustrated with the amount of money that the department spent in that time. But the only correction I'd make is they didn't spend that money on the audit. They spent that money to not have an audit. In fact, one year, they spent $770 million to avoid having the audit but to show Congress they were very, very, very serious. And they hired outside consultants to come in and advise. But the thing they didn't do was to actually have the audit.

So, then, when Secretary Mattis and I were confirmed in 2017, we started the audit. The audit itself is only $200 million a year. And here's what they found in the first couple of years: $2.7 billion in navy supplies that the navy

did not know it had because people hadn't logged the parts into the supply system. So when you looked for the part, you couldn't find it. We had V-22s [Osprey tilt-rotor aircraft] that were grounded because they were waiting on the private sector to produce spare parts that the navy had but didn't know they had.

Just using the navy as an example, in 2017, 5 percent of the buildings on the navy's books did not exist. They had been knocked down and didn't come off the books. The navy uses those numbers to allocate budgets to bases. They also use it when they're answering BRAC [Base Realignment and Closure] questions about whether they have too much capacity. But 5 percent of those buildings had been gone for years. They also found an entire warehouse they didn't know existed. One had a UAV [unmanned aerial vehicle] inside. Others had parts for airplanes the navy had retired several years ago.

The other thing the audit did was cyber testing. People don't realize this is an important part of a financial statement audit. But they attempt to penetrate your business systems, your logistics systems, and your payroll systems. People in DoD are discovering vulnerabilities in their systems. They weren't being caught by our normal internal cyber controls, but the auditors found them, and the auditors would ding them for it.

And then, from all that, one of the things you have to do to have an audit is the auditors want your universe of transactions. "Give me all the transactions so I can pull a sample." Well, we didn't have that, so we had to create it. We had to politely go to different people and say, "Will you share your data with us?" As Bob Work [former deputy secretary] would say, this is an incredibly unnatural act in the Department of Defense. Now, we did it the right way, which is we didn't say, "Can I use your data to go beat you up in the POM [Program Objective Memorandum] process?" Since everyone would wisely say no. We sent sweet, innocent accountants who said, "I have this thing called the audit. Would you mind sharing your data with us?" They'd let us hook up the information, and then we'd extract a copy of the data on a regular basis and then make it available to the original owner but with training and advanced data analytical tools so they could better run their operations. So, these numbers are probably a year or two old, but 23 billion transactions pulled from 220 systems across the Department of Defense come into a system called Advana that only exists because of the financial statement audit.

So the question is, how did we go from nineteen years of what rightfully created frustration among senior leaders and was viewed as wasting money to

a system that now is one of the key tools the deputy secretary pulled out of the comptroller's office and elevated to her because it was central to her vision of how to run the department? Well, there are a couple of things. First of all, under the previous approach, it clearly didn't have support in the Department of Defense. DoD had no clear vision that there was an upside to the audit. When people talked about the audit, they talked about the financial statement as if the stock was going to be bought or sold somehow. And the answer is, it won't. If anyone's curious, by the way, the largest asset on the financial statement of the Department of Defense is not ships, not planes, it's Treasury bills. The department owns over a trillion dollars in Treasury bills because it has a $2 trillion pension liability. Before 2017 there was no credible measure of progress, because they didn't hire auditors to come check. DoD hired consultants, and then they told the consultants how to write the reports, and the purpose of the reports was to be able to send them to the Hill. So there were metrics, right? And the Hill somehow didn't find that satisfactory, because it didn't seem to fix anything.

Part of the reason I believed we needed to start the audit is I had spent a period of time over at Homeland Security [DHS] as their CFO. There we didn't have a choice. They already had an annual financial statement audit. DHS consistently failed the audit. They didn't originally even have department-wide financial policies and procedures. But DHS now has a clean opinion. In fact, they have had a clean opinion for ten years running. And the only way they got there was they had an audit every year, whether they wanted it or not. And the auditors were frankly quite helpful. They'd come in and explain why you didn't have your property books right and what you were skipping in the inventory of your buildings. For example, if you want people to conduct a credible real property inventory annually, make it easy on them by including the GPS [Global Positioning System] location data in the property books.

So what I wanted to do today was to walk through the rules that I have used in my career for when you drive a change in a process, how do you make sure it goes well? Because a lot of folks here have tremendously good reform ideas. And the answer is the audit was a good reform idea that wasted money for nineteen years, despite individuals along the way trying to do the right thing.

The first thing to remember is that the bureaucracy is going to resist reform, because that's why you made it a bureaucracy. We don't ask the people who do payroll to innovate different ways of paying people in different amounts

at different times of the year. We want it the same way every day, all the time. And that's what they do. And also, in the federal government many of our rules are in law. So even when you find the rule that's the problem, the time of fixing it has this extra cycle built in, and everyone gets to play. If you have experience trying to reform health care or the commissaries or the PXs [post exchanges], you'll discover there's a very large number of people who have an opinion on these topics.

In addition, in DoD's case, it is legitimately complex. Delta [Air Lines] has about eight hundred airplanes. It's a very large, very complex operation. DoD, just counting attack and fighter planes, has about 3,400. Never mind helicopters and everything else. So the audit task is extraordinarily complex.

So what are the key lessons? The first lesson is when you decide you're going to drive change, you need to ask a lot of questions. And people think, "I do that, so I get buy-in." No. It's lovely that you get buy-in. The reason you're doing it is you'll learn a lot. It's like a really cool murder mystery. The first suspect is not the guilty one, and the thing you think is broken is not the problem at all. And until you drill into that, you don't see it. It's what makes reforming a bureaucracy fun.

The second lesson is you have to scout out for obstacles. Nadia [Schadlow] brought this up in her topic. Just a couple examples. We have classified stuff. We have things that we can't even explain how to wrestle with unless you have a clearance. And the federal accounting standards advisory board was filled with uncleared people. So we had to go get them all clearances. Now, they very nicely all signed up. They all got clearances so they could help give us guidance on how to handle certain things in the Department of Defense that have that. We also know that in the private sector, the moment the auditor knows you've failed, they're going to stop auditing. Well, that's kind of pointless, because we knew we were going to fail when we started the audit. So we had to change the rules to say, "No, please go on. Find as many mistakes as you can. Find the cyber vulnerabilities, find the data problems so we can fix those."

Third, you've got to know the mechanics of the process, whether you're in the acquisition world or something else. It's technical. It's hard. You've got to have people who understand it. In addition to CPAs, we had to have people with direct experience with financial statement audits. So we brought people from outside DoD. The CFO of the navy was someone we brought from the coast guard who had helped get the coast guard to a clean opinion, because

there weren't many people in the navy who had actually seen a clean opinion or been through a financial statement audit.

Fourth, you need schedules and plans. This is why people have earned PMPs [Project Management Professional certifications]. You need to know, "Who's going to do what, by when?" The biggest weakness before the audit was measuring progress. People couldn't show what they had accomplished in the previous three years. Now, they may have done something great, but you couldn't tell it to the Hill. You couldn't prove it to your own staff. You couldn't build support. So we put effort into documenting every time we found a savings. For example, the air force audit found uninstalled missile motors worth $53 million that were usable, that the air force had thought were unusable. We could show hundreds of millions of dollars worth of savings that dwarfed what we were spending on the financial statement audit.

Fifth, you will need a champion for change. Whatever you're taking on, there will come a point that it will not be solvable at your level, and you'll need to go up to the secretary and know that you've got backing, or you're going to need to go to the Hill or some other place. And those folks have to understand what you're doing and why you're doing it and be there to back you up as you do it. If you're lucky, you end up in a place where I did, where you end up moving up and being the champion. So then, when Elaine was carrying the torch on the audit, she could look at people and say, "Well, okay, I understand you don't want to do the audit, but let's go talk to the deputy secretary and see if he thinks the audit's important." So I got to play the heavy, and I didn't have to have too many meetings. But you can help move that forward.

Sixth, in our world, you also have to plan for the transition. It is going to outlast you. Whatever you are trying to do, if it's really worthwhile, it will only be obviously worthwhile when the next administration picks up the torch. They may rename it, or they may call it theirs. They may have thought it was theirs. It doesn't matter. If that idea dies every time there's an election, it's not going to be worth the investment. So I had the advantage when I was at Homeland Security, I recruited a very talented deputy that the Obama administration later nominated to be the CFO. So we had straight continuity with her carrying the torch. Much of what I did on the audit, I had picked up from what Mike McCord [under secretary comptroller/CFO] had started, and then I handed over to Kathleen Hicks [deputy secretary], who was very excited to pick up the data analytics and take it further.

Seventh, the last item on the list I have is you have to watch the incentives. Water doesn't roll uphill. So if you build a system where you need the water to roll uphill, you are going to spend tons of energy trying to force compliance. So with the audit, what we did was we made it incredibly easy for anyone who wanted to share data with us. And if you didn't, we just skipped you, and we went to the next person who wanted to. And we told that person, "You give us the data." We then added data analytics tools, such as Python, and the visualization ones, and we made it available to the office that had given us the data. And we trained their staff. And the Army started discovering they didn't need to wait for third-quarter or midyear financial reviews. They could see their unused funds earlier at a transaction level. So they started freeing up hundreds of millions of dollars for their leadership because of this tool. I'm told they ended up actually killing a commercial contract that was somewhat expensive because they were getting better analytics free from OSD [Office of the Secretary of Defense].

The whole point was to get people to want to join the train. And by making it easy and free and offering the training, all these groups in DoD who would never normally play came together, shared their data, and allowed us to do data analytics. One of my great joys with Ellen was I was hosting, as deputy, the DMAG [Deputy's Management Action Group], and there were no PowerPoint slides. Everything in this review of the department's metrics was coming straight from the underlying database: readiness data, personnel data, and maintenance data. So no one can say, "Well, Mr. Secretary, that's three-month-old readiness data, so we shouldn't look at it." The answer is, "No, this is what was in the system yesterday. And by the way, if it's inaccurate, your office is responsible for that data, so why don't you tell us what you're going to do to fix it?" It also freed up a whole bunch of weekends for majors who were no longer putting together PowerPoint slides for their boss.

But the main takeaway that I have here for you is there are reforms that could have succeeded and died in execution. And this is one that for years was hemorrhaging money, not making the type of progress it needed, and now has been the foundation not only of some of our biggest internal savings and process changes and cybersecurity improvements but the data analytics tool that it's created is the foundation for a whole series of reforms that are going to follow. And so, knowing how to do that and what the mechanics are for success is key to this. So I'm always happy to say what reforms I want, but I

really thought, given all the conversations we had, it was worthwhile to spend some time on what makes them work and what makes them not and what the difference looks like.

SECRETARY JIM MATTIS: One caution. What happened with this audit and its genesis is I was sitting in 1996 behind a man named Bill Perry, the secretary of defense up on Capitol Hill, as he testified in the House and Senate Armed Service Committees. The staffers there have a very long corporate memory that sometimes drives us half nuts. And I remember Dr. Perry said, "We're going to have an audit. We're going to do the audit." Years later, I was nominated to come back as secretary of defense only to find that there had been no audit. And then during the confirmation process you have to meet privately with everybody before you have your formal confirmation hearing in front of the Senate committee. And Senator McCain told me he was going to ask me about this, and he said, "I'm hard over about it." I said, "Well, yes, I last heard about that almost twenty years ago that we were going to do it, so I guess we'd better do it."

But then, after the hearing, I saw immediately after my hearing, even before I was approved by the Senate, I pulled Senator McCain aside and said, "You can be very volatile, Senator." We had known each other many years. And I said, "We're going to find things wrong when we start the audit. What I don't need you to do is start punishing us when we find things wrong. We're going to find it, we're going to correct it, but this cannot become something you beat me up with in public." And he was true to his word. I said, "Now, if you find something just criminal and stupid, I know what you're going to do, so here's your hunting license. No sweat."

But my point is that if you try to do reforms, try to anticipate the first, second, and third order blowup, and at least craft a way to get through it. And it's best if you do it, as Dr. [Condoleezza] Rice said, with some friends and allies. Get allies on the Hill. And they're not unreasonable up there, at least not on DoD's two authorizing committees. But when you get the bulk of them on your side, you can really do a lot of good on reform if you can sustain it. If you can, pass it on.

And an administration now that wants to basically divorce itself from the previous one has basically embraced the whole Trump administration national security strategy. I think they added pandemic and climate change, which I'm against, shouldn't militarize it, but everything else is still there. So

if a new administration carries through, whether it be a strategy or a reform, that's when you know you are successful. It's not when you get it through. It's when the next team carries it on through.

BOSKIN: I have a comment or two I want to make before we turn it over to Mac [Thornberry]. One is that a lot of our systems go through upgrades. So they may be thirty years old and they may be getting long in the tooth, but they're not quite the capability when they first came on. Apaches have been upgraded multiple times, for example.

It's a minor point, but when I was a young scholar at Stanford, I developed a bunch of capital accounts for the federal government, which was something very badly missing that's more been taken over by OMB [Office of Management and Budget]. They do an okay job of it. But during the Reagan administration, I was asked to brief the president about this, and President Reagan loved the idea because, of course, as you have a huge acquisition and defense buildup, you appreciate that that's the investment side of things. But [Secretary of Defense] Caspar Weinberger went ballistic when I said, "Well, we have to also realize it's going to depreciate and obsolesce, and we have to take that into account as well." And he proclaimed, "We're going to give the Russian secrets. We can't do it." And that killed the idea. Of course, we could have aggregated in a lot of other things. We tried to pick it up again with [Secretary Dick] Cheney and especially Don Atwood, who was deputy at the time. And we spent some time working on it, but it never took off. But I think the idea of what we're doing to build for our future is something that's worth separating out more clearly, for sure.

And Gary's comment about time and position and the importance of having a leader trying to do something for more than two years and rotating out, I think, is really essential. It was driven home to me by my father-in-law, a World War II submarine commander, who said that, in abbreviation, "Rickover was the biggest SOB in the navy, but he was the SOB the navy needed and needed for a long time."

ROUGHEAD: Maybe a little too long, Mike.

BOSKIN: Yes, that's true. You have to figure out how you transition the person out, not leave them there permanently. And then also, Ellen, I couldn't agree with you more about the public education, building public support, and we've

all talked various ways about how that's waned at the younger generation and schools. Jim talked about duty to country, et cetera. That's a vital investment.

Many of us have talked about Congress, many have said some very nice things about it. Others have had complaints. Everybody has frustrations. Democracy is a very messy institution. But as I think many of our leaders have said, it's not a spectator sport. You need to be engaged. So we couldn't have anybody better to talk about the view from Congress than Mac Thornberry. So over to John Rader for our final panel.