

Stenographic Transcript  
Before the

Subcommittee on Seapower

COMMITTEE ON  
ARMED SERVICES

## **UNITED STATES SENATE**

HEARING TO RECEIVE TESTIMONY ON  
MARINE CORPS GROUND MODERNIZATION IN REVIEW OF  
THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR  
2021 AND THE FUTURE YEARS DEFENSE PROGRAM

Wednesday, March 11, 2020

Washington, D.C.

ALDERSON COURT REPORTING  
1111 14TH STREET NW  
SUITE 1050  
WASHINGTON, D.C. 20005  
(202) 289-2260  
[www.aldersonreporting.com](http://www.aldersonreporting.com)

1 HEARING TO RECEIVE TESTIMONY ON  
2 MARINE CORPS GROUND MODERNIZATION IN REVIEW OF THE  
3 DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2021 AND THE  
4 FUTURE YEARS DEFENSE PROGRAM

5  
6 Wednesday, March 11, 2020

7  
8 U.S. Senate

9 Subcommittee on Seapower

10 Committee on Armed Services

11 Washington, D.C.

12  
13 The subcommittee met, pursuant to notice, at 10:00  
14 a.m., in Room SR-222, Russell Senate Office Building, Hon.  
15 David Perdue, chairman of the subcommittee, presiding.

16 Members Present: Senators Perdue [presiding], Ernst,  
17 Hawley, Hirono, Blumenthal, Kaine, and King.

1           OPENING STATEMENT OF HON. DAVID PERDUE, U.S. SENATOR  
2 FROM GEORGIA

3           Senator Perdue: Call the hearing to order.

4           The Senate Armed Services Subcommittee on Seapower  
5 convenes this morning to examine Marine Corps Ground  
6 Programs in Review of the Defense Authorization Request for  
7 Fiscal Year 2021 and the Future Years Defense Program.

8           We welcome our two distinguished witnesses this  
9 morning, The Hon. James F. Geurts, Assistant Secretary of  
10 the Navy for Research, Development, and Acquisition. Good  
11 morning, sir.

12          Mr. Geurts: Good morning.

13          Senator Perdue: -- Lieutenant General Eric Smith,  
14 Commanding General, Marine Corps Combat Development Command,  
15 Deputy Commander for Combat Development and Integration.  
16 Good morning, sir.

17          General Smith: Good morning.

18          Senator Perdue: The purpose of this hearing is to  
19 review the budget request in the context of how the Marine  
20 Corps is adjusting its ground modernization strategy to  
21 support the National Defense Strategy. Today, the world is  
22 more dangerous than any time in my lifetime. I agree with  
23 the National Defense Strategy that today we're facing five  
24 key threats in our national security: China, Russia, North  
25 Korea, Iran, and global terrorism. We face these threats

1 across five domains: land, air, sea, cyber, and space. As  
2 we speak, our country's adversaries are plotting to  
3 undermine us, overtake us, and, in some cases, eliminate our  
4 very way of life.

5 Our military remains the envy of the world, but the  
6 competition is picking up, and we cannot be complacent.  
7 There is no doubt the threats posed in our potential  
8 adversaries -- by our potential adversaries apply to Marine  
9 Corps ground units, particularly the roughly 21,000 marines  
10 stationed or deployed west of the International Date Line.  
11 I am particularly interested in the extent to which the  
12 Commandant's planning guidance has driven a reallocation of  
13 resources in this budget request, including in the key areas  
14 of ground-based long-range precision fires, command-and-  
15 control systems for degraded environment, air and missile  
16 defense, unmanned systems, ground mobility modernization,  
17 and emerging capabilities. I also look forward to hearing  
18 how the Marine Corps intends to modernize and field new  
19 equipment to meet the challenges faced on future  
20 battlefields.

21 This subcommittee will continue to work with the Marine  
22 Corps to build ground capabilities ready to defend U.S.  
23 national interests, and will continue to demand the best use  
24 of every taxpayer dollar. I look forward to our witnesses'  
25 testimony and the question-and-answer period that we have

1 before us.

2 I now recognize Ranking Member Senator Hirono.

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1           STATEMENT OF HON. MAZIE K. HIRONO, U.S. SENATOR FROM  
2 HAWAII

3           Senator Hirono: Thank you, Mr. Chairman, for holding  
4 this hearing.

5           And I welcome our witnesses, Secretary Geurts -- was it  
6 only 2 days ago?

7           [Laughter.]

8           Senator Hirono: -- we're back -- and General Smith, to  
9 this hearing. And this is to focus on the request for  
10 Marine Corps ground modernization programs. And we think  
11 that your testimony -- well, I thank you for your testimony  
12 and for your service to our country.

13           As the National Defense Strategy states, the primary  
14 challenge facing our Nation is the reemergence of long-term  
15 strategic competition with Russia and China, and this shift  
16 in strategic direction has important implications for our  
17 marines. The men and women who serve in the U.S. Marine  
18 Corps are vital to global operations critical to our  
19 national defense, and we must ensure they remain ready and  
20 capable of addressing contingency -- contingencies at a  
21 moment's notice.

22           Last year, General Berger released his Commandant's  
23 Planning Guidance offering his strategic vision for the  
24 Marine Corps. This guidance supports the National Defense  
25 Strategy and makes clear that the highest priority of the

1 Commandant is the future-force design of the Marine Corps.  
2 To support this effort, the Marine Corps will closely  
3 scrutinize and eventually divest legacy defense platforms  
4 and capabilities that do not support the Commandant's  
5 Planning Guidance. This new force-design effort ultimately  
6 impacts many of the Marine Corps ground modernization  
7 priorities that we will discuss today. I hope our witnesses  
8 can provide this committee with an update on these efforts.

9 Of course, once the Integrated Naval Force Structure  
10 Assessment, FSA, is released, it will provide insight into  
11 how the Marine Corps will operate as it faces the challenges  
12 of the future. Like many of my colleagues, I hope we will  
13 have that planning document from the Defense Secretary's  
14 office in the near future.

15 The readiness of the Marine Corps remains a priority  
16 for this committee, which includes making sure our marines  
17 field combat-effective equipment that is in proper working  
18 order. And, to that end, the fiscal year 2021 budget  
19 request makes targeted investments in the ground combat  
20 portfolio of the Marine Corps.

21 The budget includes a total of 2.9 billion for Marine  
22 Corps procurement, and nearly 1.3 billion for research,  
23 development, test, and evaluation ground systems funding.  
24 And, Secretary Geurts, as you testified last week before the  
25 House Armed Services Committee, you said, quote, "The Marine

1 Corps ground portfolio has shown significant progress over  
2 the last 5 years and is a top performing portfolio in the  
3 Department of the Navy. Programs are consistently meeting  
4 or delivering ahead of schedule, putting capabilities into  
5 the hands of the marines in the field today," end quote.  
6 That is good-news story, and I encourage our witnesses today  
7 to share with this committee the lessons that you all have  
8 learned.

9 And one of the most important Marine Corps ground  
10 modernization programs is the amphibious combat vehicle,  
11 ACV. The ACV is an 8-wheeled armored personnel carrier that  
12 will provide improved lethality and survivability to  
13 marines, and it will replaced the assault amphibious  
14 vehicle, AAV, which has been in operation for over 40 years.  
15 Guess we got our money's worth.

16 [Laughter.]

17 Senator Hirono: The Marine Corps had originally  
18 planned to procure two increments of the ACV; however, the  
19 initial vehicle demonstrated increased capability, and the  
20 Marine Corps made the decision to combine all variants into  
21 one family-of-vehicles program. I think that's probably a  
22 -- that was probably a very wise money-saving as well as  
23 very efficient way to make the decision. Thank you. The  
24 fiscal year 2021 budget request includes 479 million to  
25 procure 72 full-rate production ACVs. I would welcome an



1 update from our witnesses on the status of the ACV program.

2 The Marine Corps is also pursuing the joint light  
3 tactical vehicle, JLTV. And this is a joint Army and Marine  
4 Corps program designed to replace the high mobility multi-  
5 wheeled vehicle, better known as Humvees. The JLTV provides  
6 increased protection while ensuring vehicles are within the  
7 weight constraints to enable expeditionary missions. The  
8 fiscal year 2021 budget includes 382 million to procure 752  
9 vehicles. I assume you're on track for that.

10 In addition to the major ground vehicle modernization  
11 programs, the Marine Corps has prioritized funding in the  
12 fiscal year 2021 budget request for the expeditionary  
13 ground/air task-oriented radar, G/ATOR, as a replacement for  
14 legacy radar systems. The Marine Corps plans to procure  
15 eight of these systems this coming fiscal year. The budget  
16 request also supports improvements to the high mobility  
17 artillery rocket system and funding for research efforts to  
18 address the long-range precision-fire capability gaps that  
19 exist between U.S. forces and our adversaries.

20 What I have highlighted -- while I have highlighted  
21 some of the efforts that the Marine Corps is pursuing to  
22 field the capabilities the future force requires, the Marine  
23 Corps must also maintain legacy platforms that remain  
24 critical to addressing current threats. I hope that you  
25 will inform this committee how you are managing risk by

1 reducing and divesting of legacy platforms while  
2 prioritizing funding for new capabilities that will be  
3 fielded to the force.

4 I look forward to your testimony.

5 Thank you.

6 Senator Perdue: We now have time for statements from  
7 our two witnesses today.

8 Secretary Geurts.

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1           STATEMENT OF HON. JAMES F. GEURTS, ASSISTANT SECRETARY  
2 OF THE NAVY FOR RESEARCH, DEVELOPMENT, AND ACQUISITION

3           Mr. Geurts: Thanks, Mr. Chairman.

4           Chairman Perdue, Ranking Member Hirono, distinguished  
5 members of the subcommittee, thanks again for the  
6 opportunity to appear before you to address the Department  
7 of the Navy's fiscal 2020 -- or 2021 budget request as it  
8 applies to the marine ground systems.

9           Joining me today, again, is Lieutenant General Eric  
10 Smith. He is the Deputy Commandant of the Marine Corps for  
11 Combat Development and Integration, and we look forward to  
12 testifying in front of you today.

13           With your permission, I have a few brief opening  
14 remarks that I'd like to put in the record for the two of  
15 us.

16           Senator Perdue: Yes, sir.

17           Mr. Geurts: We thank the subcommittee and all of  
18 Congress for your leadership and steady support of the  
19 Department of the Navy. Our '21 budget submission delivers  
20 ground vehicle and weapons readiness while modernizing to  
21 deliver a more lethal force in support of the National  
22 Defense Strategy. It demonstrates our continued commitment  
23 to ensuring our sailors and marines have the equipment they  
24 need to execute our national security.

25           As mentioned by Senator Hirono, the Marine Corps ground

1 portfolio is a top-performing portfolio in the Department of  
2 the Navy. It's showing consistent delivery of equipment on  
3 or ahead of schedule, on or below budget, with performance  
4 above what we have as our threshold requirements. I'm very  
5 proud of the hard work both from the requirements side, from  
6 the acquisition side, and from our operating forces, as  
7 we've all worked together to get this portfolio where it  
8 needs to be so our marines always have the best equipment to  
9 do the job we're putting on their shoulders.

10 To highlight a few programs: last fiscal year, the  
11 Marine Corps leaned forward in fielding the JLTV, in  
12 partnership with the Army. We reached our initial operating  
13 capability 10 months early. We have over 500 vehicles  
14 fielded. And that partnership with the Army has been  
15 particularly strong and particularly beneficial for the  
16 Marine Corps and, I think, also for the Army. And that  
17 program is in really, really good shape.

18 The amphibious combat vehicle continues to execute on  
19 its baseline schedule and is going to enter initial  
20 operational test this fiscal year, with a full-rate  
21 production decision scheduled this fall. And recently, we  
22 completed all the live-fire testing for threshold  
23 performance on that vehicle, and we have met those threshold  
24 requirements already. So, that program is in good shape.

25 The G/ATOR radar, we've fielded 10 of those systems.

1 We're continuing to field those. We've made it through  
2 full-rate production decision. We're also working closely  
3 with the joint forces to ensure that it's fully integrated.  
4 And, to the degree that that radar can help other services  
5 in some of their requirements, we're partnering closely with  
6 those other services.

7 Our highest ground modernization priority is our  
8 ground-based antiship missile. That couples this JLTV, in  
9 an unmanned form, with a Navy strike missile. Again,  
10 leveraging things that are already developed so we don't  
11 have to spend money redeveloping things that already exist.  
12 This capability, when employed -- or deployed with our  
13 marines forward, gives them the opportunity to both protect  
14 our forces as well as extract a cost on our enemy, should  
15 they decide to do so.

16 These and the many other programs reflect a lot of hard  
17 work across the community and show the value of increased  
18 integration between the Navy and the Marine Corps -- the  
19 Navy, Marine Corps, and the rest of the joint team, and the  
20 acquisition and requirements teams, who, together, have been  
21 delivering these transformative capabilities into the hands  
22 of our warfighters.

23 Continued budget predictability and stability will be  
24 necessary to maintain this positive momentum. Thank you for  
25 the strong support this subcommittee has always provided our

1 sailors and marines and their families. And thank you for  
2 the opportunity to appear before you today. We look forward  
3 to answering your questions.

4 [The prepared joint statement of Mr. Geurts and General  
5 Smith follows:]

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1           Senator Perdue: Thank you, Secretary.  
2           General Smith.

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1           STATEMENT OF LIEUTENANT GENERAL ERIC M. SMITH, USMC,  
2   COMMANDING GENERAL, MARINE CORPS COMBAT DEVELOPMENT COMMAND;  
3   DEPUTY COMMANDANT FOR COMBAT DEVELOPMENT AND INTEGRATION

4           General Smith:  Sir, I think Secretary Geurts will --  
5   has spoken for both of us, in all candor, sir.  I'm just  
6   excited about taking your questions and give you some --

7           Senator Perdue:  Well, that --

8           General Smith:  -- answers, because we have some truly  
9   good-news stories to tell you on how we're best utilizing  
10  the dollars that you're gracious enough to support us with.

11          Senator Perdue:  Well, it sounds like it, but I never  
12  give -- I never want to do one of these hearings without  
13  giving the three-star in the room and opportunity to talk.

14          [Laughter.]

15          Senator Perdue:  So, thank you, sir.

16          General Smith:  Thank you, Senator.

17          Senator Perdue:  We'll start with that, General Smith.  
18  I'd like to talk about China.  I know last week you brought  
19  it up in a couple of answers to several questions.  It looks  
20  like the NDS is requiring, as Secretary Mattis called before  
21  he left, a maritime focus because of the way China has  
22  developed and because of the geography involved.  And you  
23  talked a little bit about their aggressive behavior,  
24  particularly in the first island chain.  I was -- I had the  
25  great opportunity -- I was very blessed to participate in a



1 flyover, part of a FONOP in the South China Sea late last  
2 year, and I was so impressed with what was going on there,  
3 both Marine personnel as well as Navy personnel. It was  
4 just a first-class operation. These young people are the  
5 best we have. It's amazing. I want to congratulate both of  
6 you on that.

7 I have a question, though, about how the Marine Corps  
8 ground programs support the NDS and the Navy in this  
9 reposturing toward the mission with China, and particularly  
10 in the first island chain.

11 General Smith: So, sir, thank you for that.

12 As you noted in your statement, sir, we've got about  
13 21,000 marines west of the International Date Line now. And  
14 that number fluctuates on any given day, based on exercise  
15 schedules, et cetera. So, we are currently present in the  
16 first island chain throughout the Pacific, the South China  
17 Sea in particular. Those marines are there now. They're  
18 there conducting exercises, such as Balikatan, Cobra Gold,  
19 et cetera. And so, the Commandant's vision and focus is  
20 that you have to be inside that first island chain, which we  
21 already are, in order to impose a cost on any adversary.  
22 Any. And what we are trying to do, sir, is ensure that  
23 those marines, as they are forward deployed inside the  
24 weapons engagement zone of any adversary -- in this case,  
25 you're talking about the first island chain -- that they're

1 organized, trained, and equipped to actually impose a cost  
2 on any adversary. So, when we talk about, sir, things like  
3 the amphibious combat vehicle or the ground-based antiship  
4 missile, paired with a stripped-down, lightened, joint light  
5 tactical vehicle that is robotic, that fires a antiship  
6 missile, those types of capabilities are redundant command-  
7 and-control architecture that can be independent from the  
8 overarching architecture. When we have those capabilities  
9 resident with us at all times within either the first island  
10 chain or anywhere within the Pacific, that is a threat that  
11 has to be reckoned with by a threat, as opposed to -- we  
12 would have to return to, for example, a base, pick up  
13 heavier, bulkier equipment, which is the legacy equipment  
14 that Senator Hirono discussed, and return to a potential  
15 fight. We can't do that. We have to take it with us, have  
16 it with us at all times. That's the concept, sir. And I  
17 think the programs that have been listed by yourself and  
18 Senator Hirono are exactly the kind of programs that are  
19 robust, resilient, and lethal, that the Marines have and are  
20 beginning to field within that first island chain. And this  
21 budget will allow us to fulfill that obligation to those  
22 young marines and sailors that are out there right now.  
23 They're just not as well-trained, equipped, and organized as  
24 they might be with this continued steady funding.

25 Thank you, sir.

1           Senator Perdue: I'm sorry. We're having a little bit  
2 of a problem with our timing. We're going to limit this to  
3 5-minute rounds, here. So, I'm going to assume -- we have  
4 plenty of time. We don't have a vote until noon, so these  
5 guys are going to have a full boat, here.

6           With that, though, I'll move to Ranking Member Hirono  
7 and her questions.

8           Thank you.

9           Senator Hirono: Thank you.

10          Over the past few years -- this is a question for  
11 General Smith -- this committee has heard testimony  
12 detailing the increase in lethality gaps between the U.S.  
13 military and our near-peer competitors. So, we actually are  
14 supposed to be decreasing the gap, but the gap is  
15 increasing. The National Defense Strategy also highlights  
16 this disparity and makes addressing the lethality of our  
17 forces a priority. Can you identify the investments the  
18 Marine Corps made in the fiscal year 2021 budget request  
19 that will allow the Corps to address gaps in lethality and  
20 effectively compete with a near-peer competitor?

21          General Smith: Yes, ma'am. Our number-one current  
22 unfunded priority-list item is the ground-based antiship  
23 missile. And --

24          Senator Hirono: Is that what? I'm sorry. The ground-  
25 based --

1 General Smith: Ground-based antiship missile --

2 Senator Hirono: Okay.

3 General Smith: -- which is the naval strike missile.

4 We're often asked, ma'am, What are marines doing with an  
5 antiship missile? And the response for us is actually  
6 fairly simple. We are the littoral combat force present  
7 within the Pacific, and in -- and specifically in the first  
8 island chain. And, as that force, we already can fire, in  
9 our coordination with the Army off of our high-mobility  
10 artillery rocket system, HIMARS -- we can fire an Army  
11 ATACMS missile that goes out couple of hundred miles. It  
12 makes sense to us that any force that is the littoral combat  
13 force should have a weapon system that can place a threat on  
14 an enemy ship. So, that ground-based antiship missile,  
15 which is highly mobile, small, fits on the back of a joint  
16 light tactical vehicle, which we'll test fire this June  
17 after a successful test in December of a -- we would call it  
18 a slug, but it's an inert round. We actually tested that  
19 successfully in December. We'll do the live missile in  
20 California in January -- I'm sorry -- in June. That  
21 capability causes any threat to have to take a step back and  
22 consider that there are potentially dozens of these forces  
23 scattered throughout the Pacific -- means that the sea  
24 lanes, in support of distributed maritime operations, are no  
25 longer free and open for them.

1           Senator Hirono: So, if this missile is so important,  
2 why was it not included in your fiscal 2021 request?

3           General Smith: Yes, ma'am. So, some of it, ma'am, was  
4 ARC'd, and some of it is -- we now have the capability,  
5 after a successful demonstration in December, to actually go  
6 forward. What we're trying to do -- we did fund it, parts  
7 of it. What we've asked for with the unfunded priority list  
8 is, we have to plan for success. And I believe we're going  
9 to have it in June. When that happens, I'll be able to  
10 accelerate the procurement of about 36 of these missiles by  
11 a year from --

12          Senator Hirono: Oh.

13          General Smith: -- from '23 to '22. That allows me to  
14 field this capability much faster than it otherwise would  
15 have.

16          Senator Hirono: That's good.

17          So, the Chairman asked you some questions regarding  
18 what's happening with, basically, China in the first island  
19 chain. And you say that you have a presence there. How  
20 many troops -- or how many people do you have in this part  
21 of the world, in the Indo-Pacific region? Did you say?

22          General Smith: So, on any given day, ma'am, there's  
23 about 21,000 marines west of the International Date Line.

24          Senator Hirono: Marines, okay. So, do -- does that  
25 mean that you have an obvious physical presence in this part

1 of the area --

2 General Smith: Ma'am, absolutely.

3 Senator Hirono: -- in the Indo-Pacific region? Have  
4 you ever had any encounters with Chinese forces in the first  
5 island chain --

6 General Smith: Well, ma'am, I would --

7 Senator Hirono: -- that you can talk about?

8 General Smith: Yes, ma'am. I would not say  
9 "encounters with forces." I -- my previous job, just about  
10 8 months ago, was the commanding general of the 3rd Marine  
11 Expeditionary Force based in Okinawa, Japan. So, those  
12 21,000 marines west of Date Line were the ones I commanded.  
13 Today, one of them is my son, who is forward deployed there  
14 now, so I have a little back-channel source of information  
15 to find out how we're really doing there.

16 I would not say "encounters." Certainly, we've seen  
17 very public accounts of unprofessional passages of ships and  
18 aircraft from the Chinese against our aircraft and ships.  
19 As far as personal encounters, we certainly see Chinese  
20 representatives at exercises, where they often send  
21 observers. They've been invited, in the past, to Rim of the  
22 Pacific exercises, based out of Hawaii often.

23 Senator Hirono: Yes.

24 General Smith: But, no encounters, per se, for marine  
25 ground forces there in the first island chain.

1 I would offer, ma'am, very quickly, that the best place  
2 for me to be was in any of our -- and I'll just say this  
3 publicly -- in any of our partner nations, the best place to  
4 be was somewhere about 2 weeks after a Chinese delegation  
5 left, because we would come in and actually offer training,  
6 assistance, and support. That was very different from the  
7 encounter that many of these countries had with Chinese  
8 delegations, which were much more forceful and less helpful.

9 Senator Hirono: Okay. That's good to know.

10 Regarding the ACV -- so, the initial variant exceeded  
11 the capability requirements, which is unusual, I would say.  
12 So, Secretary Geurts, what lessons, if any, can the Marine  
13 Corps apply to future acquisition programs, based on the ACV  
14 acquisition strategy?

15 Mr. Geurts: Yes, ma'am. And I applaud both the  
16 requirements testing and acquisition team. And what they  
17 did was, in our initial operational assessment of the basic  
18 variant, they tested that variant all the way to the next-  
19 increments level of capability and thought, proactively,  
20 that had, you know, we been successful, as we were, that  
21 would enable us to immediately go to that next increment, as  
22 opposed to having a costly second development program and  
23 then retrofit and retro- --

24 So, by proactively, I would say, being opportunistic,  
25 and if we're going to compete -- to the Chairman's point, if

1 we're going to compete, we have to be very opportunistic.  
2 They were opportunistic in preplanning, "Hey, let's test to  
3 the next level, let's not be afraid of it not working" --

4 Senator Hirono: Okay.

5 Mr. Geurts: -- because if it works, that opens a whole  
6 new acceleration path for us.

7 Senator Hirono: So, are you going to apply that test  
8 to the next level to other acquisition --

9 Mr. Geurts: Yes, ma'am.

10 Senator Hirono: -- programs?

11 Mr. Geurts: We've been --

12 Senator Hirono: Is that what you're saying?

13 Mr. Geurts: -- working very closely with the  
14 operational test community. On the Navy side, we had a  
15 missile program, and we worked in advance. If a missile was  
16 successful, we could suspend testing early, which saved us  
17 75 missiles and a lot of money, because it was successful.  
18 And, even on ACV and live-fire, we did some testing on the  
19 initial vehicle. That testing proved successful. That  
20 allowed us to cancel a test, where we would have had to blow  
21 up a low-rate initial production vehicle. And now we have  
22 another vehicle for the Marine Corps.

23 So, it's all about closing this distance and thinking  
24 forward of the problem, not reacting.

25 Senator Hirono: Yes. I commend you for that. So, you



1 have other examples where you've pushed things, the testing,  
2 so that --

3 Mr. Geurts: Absolutely.

4 Senator Hirono: -- you get the results you want  
5 without expenditure of unnecessary funds. Thank you.

6 I don't know where -- oh, here. I should pay  
7 attention.

8 Thank you very much.

9 Senator Perdue: Senator Ernst.

10 Senator Ernst: Thank you, gentlemen, very much for  
11 being here today. And, of course, we do regret the loss of  
12 our gunnery sergeant and captain over the weekend in their  
13 fight against ISIS. And our prayers will be, of course,  
14 with their families.

15 And, General Smith, I'd like to start with you, please,  
16 sir. The Marine Corps uses unpredictable deployments into  
17 INDOPACOM to keep our adversaries really on their toes,  
18 which is a good thing, and reaffirm and build relationships  
19 with our regional partners. And our competitors -- our  
20 near-peer competitors pay special attention when the marines  
21 deploy with all the equipment they would need for an  
22 offensive operation, regardless of the simplicity or the  
23 routine nature of your missions. So, how is the Marine  
24 Corps currently leveraging the use of technology --  
25 specifically, an area I'm interested in, autonomous

1 technology -- with conventional deployments to change the  
2 calculus and, of course, the -- disrupt the decisionmaking  
3 cycle of our adversaries? If you could detail that for me,  
4 please.

5 General Smith: Yes, ma'am. Well, first, on behalf of  
6 Major Dan Yoo, who's the Commander of Marine Special  
7 Operations Command, I know he would personally tell you  
8 thank you for the condolences on the loss of those two  
9 Raiders.

10 Ma'am, an example -- a specific example would be -- we  
11 run an evolution every year, sometimes twice a year, called  
12 ANTX, the Advanced Naval Technology Experiment -- Exercise  
13 -- pardon me. We did one at Camp Lejeune, just this last  
14 July, where we demonstrated a capability called LRUSV, long-  
15 range unmanned surface vessel. It's a 33-foot rigid-hull  
16 inflatable boat that's completely autonomous. We sent it  
17 from Norfolk all the way down the intracoastal waterway to  
18 Camp Lejeune, about 200 miles. It was completely  
19 autonomous, no people on board, controlled, actually, from  
20 Norfolk. When it got to the intracoastal -- or to Mile  
21 Hammock Bay off Camp Lejeune, it launched what we call  
22 "swarming technology," small Coyote drones, that can then go  
23 in and either lethally strike a target or observe a target.  
24 So, as we field that kind of capability, that's the kind of  
25 capability that we will then provide to those forces forward

1 underneath the command of Lieutenant General Stacy Clardy,  
2 who is my replacement out in 3rd Marine Expeditionary Force,  
3 so that these lighter, more lethal, resilient capabilities,  
4 as we develop them -- our rogue fires, vehicle-firing, and  
5 naval strike missile -- we would take those with us on  
6 exercises so that the things that are in the -- we call them  
7 Quadcons -- 40-foot shipping containers as we move to an  
8 exercise, that complicates an adversary's calculus, because  
9 if you don't know what's in that, it could be weights for a  
10 weight room or it could be a lethal strike missile; it could  
11 be drone technology or underneath that canvas could be MREs  
12 and water. That's how you calculate -- or cause cost  
13 imposition, because now an adversary has to observe  
14 everything. And, as we begin to get lighter and more  
15 distributed, in support of distributed maritime operations,  
16 with ships and personnel and smaller units, you impose a  
17 intelligence, surveillance, and reconnaissance, ISR, tax on  
18 an adversary because you spread out. And any of these  
19 capabilities could be lethal to them.

20 Senator Ernst: Right.

21 General Smith: Does that help answer --

22 Senator Ernst: Yes. It does, actually. And if you  
23 could, a little bit further, that LRUSV -- right? -- long-  
24 range unmanned surface vehicle --

25 General Smith: Surface vessel.

1           Senator Ernst:  -- okay.  Vessel.  Excuse me.  Okay.  
2   Got to get the Army out of me.  Okay.  So, with that new  
3   technology, autonomous technology, I understand using that  
4   along our coast here, but what about operating in a degraded  
5   environment?  Do you think that that has the capability to  
6   do that and perform just as well as it did here?

7           General Smith:  Yes, ma'am.  It does.  The technology,  
8   as you said, is not that complicated.  It is -- it's truly  
9   -- it exists now.  It's -- I say Buck Rogers.  None of the  
10  marines know what I'm talking about.

11           [Laughter.]

12           Senator Ernst:  I get it.

13           [Laughter.]

14           General Smith:  Yeah.  But, it -- this is not way out.  
15  This is technology that exists today.  So, transforming that  
16  into something that is useful in international waters --

17           Senator Ernst:  Yeah.

18           General Smith:  -- is not difficult at all.  Autonomy,  
19  most ships now operate off autopilot for the vast majority  
20  of the time, as do aircraft.  But -- so, not a hard lift,  
21  and not a hard technological challenge to make these things  
22  happen.  Not easy, and doesn't require no research,  
23  development, and technology dollars, but certainly not  
24  something that is a 5-, 10-, 20-year project.  This is --  
25  technology exists now, and, under the leadership of Mr.

1 Geurts, we'll be as creative --

2 Senator Ernst: Yeah. Thank you.

3 General Smith: -- as we can in our experimentation so  
4 we can get these things online and out to the warfighters as  
5 quickly as we can do that.

6 Senator Ernst: Yeah. Certainly. I appreciate that  
7 very much. And it's something that, in my subcommittee, in  
8 Emerging Threats and Capabilities, we continually are  
9 looking at ways that we can lessen the -- lessen the risk  
10 that will put our marines, our sailors, our airmen, and our  
11 soldiers into -- so, I appreciate that. That's good to hear  
12 about.

13 Can you describe the Marine Corps efforts to streamline  
14 information-sharing across the joint force? And would we  
15 come out on top in a potential conflict in the Asia Pacific?

16 General Smith: Ma'am, I'll start, and pass to  
17 Secretary Geurts.

18 So, for information-sharing, the overarching concept,  
19 the Air Force is currently leading an effort called JADC2,  
20 Joint All-Domain Command and Control. And the goal is, we  
21 -- you'll hear the term "any sensor, any shooter." And what  
22 that simply means is that a marine who's in the first island  
23 chain who observes or, using a UAV, observes, or using a  
24 radar, our G/ATOR radar, observes a target, should be able  
25 to pass that information seamlessly to an Air Force F-35A or

1 a Navy destroyer or frigate and/or a long-range Army unit  
2 firing PrSM. So, that capability underneath JADC2 is being  
3 tested and experimented. All the services -- I do a almost-  
4 weekly meeting with the other service three-stars to make  
5 sure that all of us feed into a joint all-domain command-  
6 and-control network that then has machine-to-machine  
7 discussions, machine-to-machine learning, so that we can  
8 truly have a ubiquitous command-and-control network that's  
9 out there. And then what the Navy has to produce underneath  
10 that, the naval grid, is when we are cut off from that  
11 overarching grid as a distributed maritime operation force,  
12 we would have the ability to still command and control  
13 within our own naval network. And we're working that very  
14 closely with Lieutenant General Lori Reynolds and Vice  
15 Admiral Kohler.

16 Senator Ernst: Right. Yeah.

17 Mr. Geurts: Yes, ma'am. And I think -- "autonomy," we  
18 think of sometimes in vehicles. We've got to think of it in  
19 the information. So, as we go from small teams widely  
20 dispersed, they don't have the time to do all the  
21 information sorting, and -- so, you know, getting the right  
22 information to the right person at the right times. And  
23 then also transforming from many marines flying one vehicle  
24 to many vehicles flown by one marine. So, getting away from  
25 a hands-on element and doing more of a mission, "Okay, you

1 swarm of UAVs, go do this mission for me" is where you're  
2 seeing that transformative thing. The -- kind of, the rip-  
3 off-and-deploy kind of R&D is out there. Our ANTX, we had  
4 1700 participants.

5 Senator Ernst: Wow.

6 Mr. Geurts: Three-hundred technologies have either  
7 gone into programs or are maturing out of that. So, again,  
8 it's getting the user at the point of need, closest to the  
9 problem, and we're seeing a lot of benefits from that.

10 Senator Ernst: Excellent.

11 Well, thank you, gentlemen, very much, Secretary,  
12 General. I appreciate it. Interoperability is key, and I  
13 know our law enforcement agencies started doing that right  
14 after 9/11. It's about time that our DOD get on board, as  
15 well. So, thank you very much. Appreciate it.

16 Thank you, Mr. Chair.

17 Senator Perdue: Senator King.

18 Senator King: Secretary Geurts, my first question I  
19 thought of when you were testifying about the success of  
20 these programs is, How did you do it? And you talked a  
21 little bit to Senator Hirono about testing, but did you also  
22 lock down requirements early and -- I mean, give me a -- an  
23 outline of how you accomplished the -- something which,  
24 frankly, hasn't been going that well in some of the other  
25 services.

1           Mr. Geurts: Yes, sir. And again, it comes on the  
2 backs of some programs that didn't do so well, so that  
3 caused us, I think, to take a step back. And my experience,  
4 whether it was at SOCOM or here with these programs, is, the  
5 closer you can link end-user and acquiror and technologists  
6 into a much more integrated -- having a conversation, and  
7 getting to integrated processes versus transactional  
8 processes --

9           Senator King: Right.

10          Mr. Geurts: -- the better you are. So, if you have a  
11 very transactional -- somebody writes a requirement and then  
12 hands it over the fence to somebody that go -- puts a bid  
13 out, then hands it over the fence to a contractor, that  
14 hands it over the fence to a tester -- one, that takes a  
15 long time, and, two, it's not --

16          Senator King: And if it's not --

17          Mr. Geurts: You're trying to manage downside risk --

18          Senator King: -- right at the end, you've got to start  
19 all over again.

20          Mr. Geurts: Yeah. You don't leverage opportunity that  
21 way, because opportunity has a hard time traveling through  
22 those gaps. And so, the -- I think the end reason the  
23 success was huge, we had a very focused program executive  
24 officer with a very empowered using team, and they worked  
25 together seamlessly. They each had their roles, but they



1 worked seamlessly, with one end in mind: get marines the  
2 best equipment as fast as we could.

3 Senator King: And did you have the same people  
4 throughout the process?

5 Mr. Geurts: We had many of the same people, but I  
6 think it -- I know we get in the debate of, you know, do we  
7 keep people there forever?

8 Senator King: Right.

9 Mr. Geurts: I -- there's a balance to that.

10 Senator King: Sure.

11 Mr. Geurts: I think we had the same --

12 Senator King: But, it does help to have some --

13 Mr. Geurts: -- we had the right culture --

14 Senator King: -- continuity.

15 Mr. Geurts: Yeah. There's continuity in the motions,  
16 continuity in purpose and culture. Some of that's driven by  
17 having the right leadership there for the whole journey, and  
18 we had some key leaders there for the whole journey. But,  
19 more of it's a mindset.

20 Senator King: And finalizing requirements and getting  
21 80 percent of the solution instead of 100 percent, I take  
22 it, is helpful.

23 Mr. Geurts: Yes, sir. And being very --

24 Senator King: With the past programs, the requirements  
25 keep shifting, the manufacturer keeps having to reinvent

1 things as they go along.

2 Mr. Geurts: Yes, sir. And being very pragmatic of not  
3 chasing -- you know, the programs that tend not to work well  
4 is, you have the big-bang theory, and you work for a long  
5 time to then prove if the big-bang worked or not, as opposed  
6 to doing a much more -- faster, incrementally funding. I  
7 think the 80-percent theory is going to go back to -- you  
8 know, from my SOCOM days, it's 20 percent, five times as  
9 fast, and just being able to quickly create iterations that  
10 then, at time of war or crisis, you can pull away.

11 Senator King: A new weapon that's still in the  
12 development stage doesn't do much good in a conflict.

13 Mr. Geurts: Yes, sir. I think the other trick is --

14 Senator King: General, do you want to --

15 Mr. Geurts: Yes, sir.

16 Senator King: I think the General wanted to --

17 General Smith: Mr. Secretary, if I may.

18 Mr. Geurts: Yeah, go ahead.

19 General Smith: Sir, just one other example. For  
20 example --

21 Senator King: Is your mic on? I'm sorry.

22 General Smith: Sir, it is.

23 Senator King: Yeah, okay.

24 General Smith: I'm using my Texas quiet voice. Sorry,  
25 sir.

1           Senator King: I didn't know there was a Texas quiet  
2 voice.

3           General Smith: Well, I'm from North Texas, sir. So --

4           Senator King: Oh, okay.

5           [Laughter.]

6           General Smith: So, sir, an example. When we've tested  
7 out the amphibious combat vehicle, the Marine Corps also  
8 made a commitment. We said, "We're going to take an entire  
9 infantry battalion," 1st Battalion, 7th Marines -- we took  
10 them out of our training exercise and employment plan, which  
11 is deployments and major exercises, and said, "Your mission  
12 for the next year is, you are the testbed." One single  
13 battalion. Because, otherwise, sir, if you move it from  
14 unit to unit, the same marines learn the same initial --

15          Senator King: Right.

16          General Smith: -- challenges, and, over 3 months, if  
17 you asked them, 6 months into a test, the things they  
18 worried about the first 2 weeks would have been found to be  
19 insignificant. So, we carved out an entire battalion, 800  
20 marines, for an entire year to do that test and eval. So,  
21 you got a steady state of feedback from lance corporal staff  
22 sergeants --

23          Senator King: Well, I want you guys to bottle this  
24 throughout the Defense Department, because we've had a lot  
25 of fits and starts and unsuccessful development,

1 particularly on the vehicle front. So, please share this  
2 information.

3 Secretary Geurts, do a little white paper, how to do  
4 procurement right.

5 Changing the subject. Is the G/ATOR program going to  
6 be at all useful with regard to hypersonics? Do you think  
7 that is at a -- is that going to be -- well, I think I  
8 stated it. Is it going to be useful in that situation?

9 Mr. Geurts: Yes, sir. And maybe in a different forum  
10 we can go into a little more detail with you. Happy to give  
11 you some information in that. But, certainly, it is a  
12 extremely powerful radar. In the initial fielding, we  
13 didn't populate all of the antenna array, so there is still  
14 some opportunity to grow that. We wanted to get the initial  
15 capability out there, kind of to --

16 Senator King: Well, I think one of our --

17 Mr. Geurts: -- previous point.

18 Senator King: -- most urgent strategic challenges is  
19 hypersonics, particularly to the fleet. And so, I hope we  
20 can stay on that.

21 Command and control, cyber risk. Centralizing command  
22 and control makes all kinds of sense, but it presents a fat  
23 target to a cyber-enabled enemy. I take it -- I am assuming  
24 that the development of these new systems takes cyber risk  
25 very much into account.

1 Mr. Geurts: Yes, sir. Part of our operational testing  
2 --

3 Senator King: The right answer was yes. I like --

4 Mr. Geurts: Yes, sir. Yeah. It's -- it -- part of  
5 our operational testing, we do that. Now, is it suitable?  
6 Is it effective? And then, how does it fare in the cyber  
7 realm?

8 Senator King: Thank you.

9 Thank you, gentlemen. I'm hoping to get back. I've  
10 got a few more questions.

11 Thank you, Mr. Chairman.

12 Senator Perdue: Senator Hawley.

13 Senator Hawley: Thank you, Mr. Chairman.

14 Thank you, Secretary, General, for being here.

15 Let me also take this opportunity to offer my  
16 condolences to the families of the two marines that you lost  
17 this past weekend -- on Sunday, I think it was -- and to say  
18 that we're grateful for their service, and grateful for  
19 yours.

20 General, if I could start with you, let's talk about  
21 intermediate-range missiles, if we could for a second. The  
22 FY20 NDAA prohibited funding for the procurement or  
23 deployment of intermediate-range missiles. If FY21 NDAA  
24 contains a similar prohibition, can you talk to us about  
25 what that will mean for your ability to field the long-range

1 fires that you need for your sea-denial mission?

2 General Smith: So, sir, I -- what I can talk about, if  
3 it answers your question -- I think it will -- is, what I  
4 actually have to have is the ability to reach out -- and  
5 I'll be cautious in the open setting, but to reach out  
6 hundreds of miles to place ships at risk. It can't be  
7 something very short. Hundreds of miles. Because if you  
8 look at the expanse of the Pacific, our current issue -- and  
9 Senator Hirono raised it -- is being, we would say, out-  
10 staked in range by the opponent, which we cannot allow. If  
11 the opponent can reach me at 1,000 miles and I can reach at  
12 less than 1,000 miles, that is highly problematic for a  
13 force who doesn't live inside the weapon. We operate inside  
14 the weapon in the engagement zone, but we are not  
15 permanently large-based, if you will, inside that. So, we  
16 have to have the ability to reach out hundreds of miles.

17 Senator Hawley: That's helpful. Thank you.

18 Can you clear up something else for me, General, in  
19 this same -- in a similar vein? The ground-based antiship  
20 missiles, the ground-launched cruise missile, your  
21 testimony, if I read it correctly, seemed to treat those as  
22 distinct capabilities. But, I was under the impression, in  
23 the public reporting, and also, General Berger's testimony  
24 last week suggests that the ground-launched cruise and the  
25 antiship capability -- I'm sorry, that the ground-launched

1 cruise missile, the GLCM, will have an antiship capability.

2 Am I confused about that? I mean, can you help me there?

3 General Smith: I'm pretty leery about saying that a  
4 Senator is confused, so I'll be careful there, sir.

5 [Laughter.]

6 General Smith: Sir, you're not. The ground-launched  
7 cruise missile, or GLCM, is a task that the Deputy Secretary  
8 of Defense has passed to the Marine Corps to have an  
9 operational capability very quickly for something that  
10 reaches out -- again, I'll just say hundreds of miles. That  
11 is a separate fielding, testing, and evaluation program now.  
12 The naval strike missile, which we call a ground-based  
13 antiship missile -- but, that is an existing technology now.  
14 The Navy already shoots it. So, for us trying to field a  
15 capability rapidly to show that General Berger's planning  
16 guidance has the teeth that it does, we'll pair that  
17 missile, which is existing now, with a JLTV. We call it a  
18 rogue-fires vehicle, a robotic vehicle. We'll pair that  
19 immediately. So, that ground-based antiship missile  
20 capability is currently naval strike missile. The ground-  
21 launched cruise missile or any other system ideally can be  
22 fired off of that same platform. So, the platform is the  
23 platform. It's agnostic as to what it fires.

24 Senator Hawley: Gotcha. That's helpful. Thank you.

25 I've heard some concerns that some of the Corps' long-

1 range precision-fires programs might be redundant to  
2 programs that are under development currently by the Army.  
3 Can you just respond to that?

4 General Smith: Sir, I just testified last week with  
5 General Murray, who is the commanding general of the Army  
6 Futures Command. And I would say they're not redundant,  
7 sir. There are always overlaps, which are wise, so that we  
8 have the ability to pick up missions. The Army is working  
9 on some longer-range fires through their, either, PrSM or  
10 their other systems -- precision strike missile. And we  
11 both share information. In fact, I believe much of what we  
12 gain from ground-launched cruise missile, as the lead for  
13 the Department of Defense on that, will actually wind up  
14 being passed to the Army. It may be a little too heavy for  
15 us. One of the keys for us, as the littoral force, is the  
16 light, highly mobile force. We have to calculate how much  
17 stick we carry with us, versus how agile I have to -- I can  
18 be, to get on board either aircraft or naval craft to move  
19 rapidly into and around the Pacific. A longer-range system  
20 may be ideal, but too heavy for me. So, as General Murray  
21 and I, as the Army and the Marine Corps, balance,  
22 coordinate, I'll have the shorter range, but more mobile; he  
23 would have longer range.

24 Senator Hawley: Got it.

25 I'm going to come back to a topic that you touched on



1 with Senator Ernst, I think it was, the JADC2. Can you tell  
2 us more about the Marine Corps's role in the development of  
3 JADC2?

4 General Smith: So, sir, the Air Force is actually  
5 developing the concept of JADC2. We'll do a -- an  
6 experiment, here -- the Air Force will conduct it, here, in  
7 about 3 weeks, out in Nellis. And each of the services will  
8 provide systems that they currently use. The key, here, for  
9 us, sir, would be that -- the concept of joint all-domain  
10 command and control -- any sensor, any shooter -- what we  
11 want to have happen is, the systems which we already use to  
12 pass data, those radios, or whatever, systems, the form  
13 factors that fit each of the services and ignitions, have to  
14 be able to feed into that. So, the experimentation is, we  
15 will provide things, like perhaps V-22s or perhaps, in the  
16 future, an F-35, to make sure that the systems that we're  
17 procuring can feed that system, that data transmission is  
18 the key, sir, not a specific -- any specific box or any  
19 specific thing that must feed JADC2. The services will all  
20 be able to do it with the systems that they have that meet  
21 -- match their specific operational requirements. So, it's  
22 really data transmission, sir.

23 Senator Hawley: That's really helpful.

24 Mr. Secretary, do you want to add anything to that?

25 Mr. Geurts: Yes, sir. I think, as General Smith said,

1 we need to be careful this doesn't -- you know, we issue  
2 everybody a unique box to operate on that network. That --  
3 one, that will be expensive; and, two, it will take a long  
4 time to get through all the aircraft integration and ship  
5 integration. And so, I think the sweet spot we're looking  
6 for is, What are the standards and the architecture? Kind  
7 of like, you know, wireless, you don't have to have a  
8 different phone for every wireless network. That's the way  
9 we had to do it in the past, because technology, in the  
10 past, wouldn't allow you to get there. So, there's an  
11 operating concept, and then we've got to mechanize it so it  
12 doesn't become either time- or cost-prohibitive.

13 Senator Hawley: That's helpful, thank you.

14 Thank you, Mr. Chairman.

15 Senator Perdue: I'd like to follow up on two things.  
16 General Smith, you said the Marine Corps has to be light.  
17 I'm worried about the sealift. We talked about that before.  
18 In this new environment, particularly with China's  
19 development, where they've deployed more ships in the last  
20 30 months than they have in the prior 30 years, seems to me  
21 that you guys are going to have to fight your way to the  
22 fight. It's encouraging you've already got forward deployed  
23 21,000 in the first chain. And I'm very interested in these  
24 antiship capabilities you have from the ground. The  
25 question -- talk to me about the JLTV and how it plays into

1 this, but also the range. The missiles that we have now,  
2 for the longer range that we know that China has off their  
3 ships to combat what you're trying to do, are we really  
4 going to have the range in this capability that you've been  
5 talking about, or is that going to have to come from  
6 airborne or another ship, I mean, to create that confusion?

7 Mr. Geurts: Sir, and it, I think -- we may well tag-  
8 team this one a little bit. What is unique -- and, as  
9 you're seeing the Department pivot towards a competitive  
10 strategy -- you know, on -- in the past, the Navy and Marine  
11 Corps worked well together, but, you know, kind of, two  
12 sometimes separately-operating subsidiaries. And what's  
13 changing in this strategy is, How do we leverage what the  
14 Marine Corps -- they have access, they have placement -- to  
15 have different effects and create more dilemmas for the  
16 enemy than just a pure competitive 1v1 strategy. So, you  
17 know, the length and missile ranges are important, but  
18 placement's also important.

19 Senator Perdue: So, I wanted to follow up on that.  
20 I'm sorry to interrupt. But --

21 Mr. Geurts: Yep.

22 Senator Perdue: But, do you also leverage the other  
23 services' capability to --

24 Mr. Geurts: Absolutely. So, JADC2 -- so, again, any  
25 sensor, any shooter can become -- if you create that fabric,

1 where any sensor can connect to any shooter, and I can have  
2 a -- let's say, a -- you know, a marine on the first island  
3 chain can get a target back to a DDG-51 with an SM-6 that's  
4 got a lot of range, or maybe a conventional prompt strike,  
5 you start really changing the geometry of the battlefield,  
6 and then it becomes less about comparing, "You have two of  
7 these, and I have three of these." Then it becomes the  
8 really integrated strategy. And that's very, very different  
9 competitive strategy than a just red-versus-blue, you know,  
10 who can shoot first, who can shoot longer. Because now the  
11 complexity and the cost you impose can be exponentially  
12 increased without an exponential increase in resources.

13       Senator Perdue: So, I'm very interested in the Nellis  
14 demonstration. It's the second one. We had one in December  
15 on a JDC2. But, I'm also concerned about how that  
16 integrates with ABMS, which is what the Air Force is really  
17 trying to do as a platform upon which you guys are going to  
18 sit. What are the top priorities that you're trying -- from  
19 your position and responsibility, General, what are you most  
20 concerned about that? I understand the concept. I'm also  
21 envisioning the vulnerability. I met with a bunch of your  
22 marines in Australia, 2 years ago. I asked them, "Well,  
23 what happens when you don't have GPS?" Said, "Sir, here are  
24 our physical maps. I mean, we -- there are always  
25 contingencies." And the thing I loved most about what he

1 said, "Sir, we just will get it done. That's the marine  
2 way." So, can you talk to me about the vulnerabilities, as  
3 well as the joint platform and how the services are  
4 integrating right now? I asked each one of you service  
5 heads of what -- of your responsibility at your level, What  
6 -- how are you integrating with these other players?

7 General Smith: Yes, sir. And, if I may also, briefly,  
8 sir. So, when -- Secretary Geurts, when he was talking  
9 about the range, I would also say that a naval strike  
10 missile from the shore -- what we're trying to do is cause  
11 intractable problems for an adversary. So, if you think  
12 that you're going to avoid an FFG or a DDG out in an open  
13 area in the sea, and you want to hug the coastline, that's  
14 probably not going to work for you now, with a force that  
15 can fire X-100 miles from the shore regarding the JADC2  
16 concept, sir, and ABMS, the advanced battle management  
17 system. So, we are concerned that we not put all eggs into  
18 one basket and everybody have the same form factor, as you  
19 said, sir.

20 So, our concern with the overarching network, put all  
21 your eggs in one basket and then guard the heck out of that  
22 basket, we understand that we will be operating in a denied  
23 and integrated environment. There are times when we will be  
24 cut off from satellites, when we'll be cut off from GPS,  
25 we'll be cut off from PNT, precision navigation and timing.

1 So, we are exploring -- and I'll be cautious in this forum,  
2 sir, but we are exploring things that will now allow us to  
3 do terrestrially-based precision navigation timing, take it  
4 with you, establish it yourself. We've actually had that in  
5 the past, in the first Gulf War. It's very old technology,  
6 but the concept remains valid. And being able to take that  
7 with you so that I can produce something, when cut off,  
8 inside of the sphere I'm operating, that others could tie  
9 into -- all that, sir, will tie back to the joint all-domain  
10 command and control.

11 Mr. Geurts: Yes, sir. If I can just one -- I mean, to  
12 show the power of where the Navy and Marine Corps team sees  
13 this, we've -- this year, we've increased the S&T funding  
14 aimed towards the Marine Corps by 27 percent. So, we are --  
15 you know, this concept is so powerful, from our perspective.  
16 We are realigning resources to make sure we've got the  
17 technology we need to, to take this concept forward.

18 Senator Perdue: Thank you.

19 Senator Kaine.

20 Senator Kaine: Great.

21 Thank you, to the witnesses, for your service and for  
22 being here today. And I'm sorry I missed the first part of  
23 the hearing. I was at a Foreign Relations Committee hearing  
24 on Syria that was pretty intense.

25 Just a few questions. And these may have been covered,

1 but I do want to get into them.

2 Last week, I met in my office with a Virginia company,  
3 BWXT. And they were recently awarded a contract, through  
4 the Strategic Capacities Office, to explore building a small  
5 nuclear micro reactor in the 1-to-5 megawatt range. And the  
6 idea of these -- this is looking at to sustain bases here in  
7 the United States or potentially for use in forward  
8 operating bases, but the idea is, you know, whether the  
9 Marine Corps is looking at the possibility of incorporating  
10 this kind of technology in any kind of a broader  
11 applicability, especially in remote island chains or places  
12 where, you know, energy is particularly difficult to  
13 deliver.

14 Mr. Geurts: Yes, sir. I think -- I'll -- maybe that  
15 in two or three broader themes. We are absolutely looking  
16 -- if we're going to operate effectively forward in small  
17 teams, you've got to be self-sustaining. So, whether that's  
18 power or water or whatever the resources you need,  
19 particularly in a contested environment, being able to  
20 logistically resupply, kind of, you know, red-ball, the way  
21 we've done it in some of our most -- is not going to work.

22 Senator Kaine: Yeah.

23 Mr. Geurts: I would say, you know, in the mini nuclear  
24 power, that's an emerging concept.

25 Senator Kaine: Right.

1           Mr. Geurts: And we'll certainly leverage it greatly as  
2 it matures. But, we are looking -- you know, whether it's  
3 how to make ships more efficient, how to lighten the load so  
4 we don't have to move as much stuff forward, and then how to  
5 be self-sufficient, all very important to us.

6           Senator Kaine: That's great.

7           In your testimony -- your written testimony, Secretary  
8 Geurts, you described, under a section on emerging  
9 capabilities, quote, "disruptive capabilities and  
10 expeditionary logistics." I'm sure you've been asked,  
11 before I got in, about, you know, what kinds of things are  
12 you thinking about in this disruptive capabilities, what are  
13 some of the kinds of emerging technologies you're looking at  
14 that you think could help you?

15          Mr. Geurts: So, some of it will be in this disruptive,  
16 self-sufficiency realm, some will be in disruptive ways to  
17 logistically resupply autonomous -- rapid autonomous  
18 resupply. I think there's a whole host of things. And we  
19 -- we're doing -- we -- last year, we did four of these  
20 major experimentation exercises, where we bring out -- we  
21 had 1700 participants --

22          Senator Kaine: Excellent.

23          Mr. Geurts: -- we bring out emerging technology and  
24 then put it in the hands of the users, and many times we  
25 found solutions or a problem we didn't know we had, and many



1 times we found unique problems we need to think about.

2 And, I don't know, Eric, did you want to add to any of  
3 that?

4 General Smith: Sir, I would just say, in the  
5 disruptive mode, if an adversary is expecting to see a  
6 certain supply chain, he's expecting to see battery, water,  
7 and fuel transport, because X-level --

8 Senator Kaine: Right.

9 General Smith: -- of transportation signifies X-sized  
10 unit and possible X-intentions. But, now I'm doing that on  
11 my own, which, I've said before, we're doing some work with  
12 Johns Hopkins Applied Physics Lab in malleable batteries and  
13 the ability to generate power with a little bit of water and  
14 a little bit of heat, and then sustain that. When I was at  
15 the 3rd Marine Expeditionary Force last year, we had simple  
16 things, additives for gas so you can turn what we would --  
17 you'd never put in your vehicle here, but that's available  
18 in, perhaps, a less-developed nation, that I can add to that  
19 and make that fuel usable in our vehicles, the ability to  
20 pull water -- obviously, we have desalinization  
21 capabilities, reverse osmosis water purification units.  
22 Those kind of things cause a different signature. We talk  
23 about signature management a lot, sir, for how you come  
24 electronically. There's a couple of kinds of signatures.  
25 There's electronic, and then there's physical.

1 Senator Kaine: Right.

2 General Smith: And we're doing things to challenge  
3 both of those and shrink them so we appear different than we  
4 actually are.

5 Senator Kaine: One of the questions, General Smith, I  
6 wanted to ask you -- it's kind of in this innovation area.  
7 As you're looking at innovation, there's also, sort of, new  
8 ways of fighting. And, as you explore that, is it likely  
9 that the Marines may train in new environments? You know,  
10 you have such great, sort of, fixed training bases that  
11 serve so many wonderful purposes, but, as you're looking at  
12 the possibility of future fights being a little bit  
13 different, do you have the training infrastructure you need,  
14 or are you looking at new or different training  
15 environments?

16 General Smith: So, Senator, I truly do appreciate that  
17 question. The Commandant's vision -- and he started last  
18 year with this particular budget -- internally, he  
19 reprioritized, when he became Commandant in July, for a  
20 budget that was somewhat fixed by the time he became  
21 Commandant, a few hundred-million dollars, and focused it on  
22 training and education under the leadership of a guy named  
23 Major General Bill Mullen, who has a lifetime in training  
24 and education. And what we've done is, we've begun to train  
25 those individuals, those marines and officers, now so that

1 when they receive these capabilities -- longer-range  
2 precision fire or new technologies -- they can actually use  
3 them.

4 Senator Kaine: Right.

5 General Smith: They can do virtual constructive  
6 training, which we coordinate pretty closely with the Army  
7 on, so that we can tie simulators together, so that we can  
8 have our ranges all instrumented, so we can do playback.  
9 You shouldn't have to run the range 47 times if you can run  
10 it a couple and then watch the films, as any professional  
11 athletic team --

12 Senator Kaine: Right.

13 General Smith: -- does. We're working and doing that  
14 out at 29 Palms. We can always use more range space,  
15 because there is a point, as you know, Senator, where a  
16 marine does have to get behind a Javelin antitank --

17 Senator Kaine: Right.

18 General Smith: -- missile and fire it. And so, we're  
19 always conscious of both the noise we make and -- et cetera,  
20 on ranges. But, we still need those instrumented ranges.  
21 If that answered your question, sir.

22 Senator Kaine: Yeah, it does. Thank you.

23 Mr. Geurts: Yes, sir. I just -- you know, in  
24 innovation, sometimes we get too focused on discovery. A  
25 key to a really effective application of technology is the

1 absorption rate.

2 Senator Kaine: Right.

3 Mr. Geurts: And so, these new ways to be able to  
4 absorb technology faster, train it, create the tactics, and  
5 make it useful is critically important.

6 Senator Kaine: Thank you. Appreciate it.

7 Thanks, Mr. Chair.

8 Senator Perdue: Thank you, Senator Kaine.

9 Senator Blumenthal.

10 Senator Blumenthal: Thank you, Chairman.

11 Thank you both for being here today, and for your  
12 service and the service and sacrifice of all of our marines.

13 I want to start by offering my condolences to the  
14 families of the two marine Raiders that were killed this  
15 week in support of Operation Inherent Resolve. Gunnery  
16 Sergeant Diego Pongo and Captain Moises Navas died Sunday  
17 while they were serving on a partner mission with Iraqi  
18 forces south of Irbil in Iraq. Last year at this hearing,  
19 we discussed a report that questioned whether MARSOC was  
20 still a relevant force. Now, a year later, I would submit  
21 that the sacrifice and actions of these Marine Corps  
22 Raiders, like Captain Navas and Gunnery Sergeant Pongo,  
23 demonstrate exactly the opposite of irrelevance and show the  
24 fallacy of opinions saying MARSOC is irrelevant.

25 I am a staunch supporter of MARSOC -- I remain a

1 staunch supporter -- and its continued contributions to our  
2 national security, and I hope that officials at the  
3 Department of Defense will share that view.

4 I would like to ask about female body armor. We've  
5 discussed this issue from time to time. And, General Smith,  
6 I wonder if you could provide an update on the Marine Corps  
7 efforts to design, develop, procure, and sustain this kind  
8 of protective gear for women. As you well know, the Marine  
9 Corps has been at the lead and the forefront of efforts to  
10 expand opportunities for the dedicated women, as well as  
11 men, who come forward to serve the country. And I  
12 introduced the Female Body Armor Modernization Act, along  
13 with my colleague Senator Ernst, Senator Duckworth, McSally,  
14 which would improve equipment for our female warfighters.  
15 And I wonder if you could give us an update.

16 General Smith: Sir, I can. And the -- as I've said  
17 earlier, Major General Dan Yoo, who's the commander at  
18 MARSOC -- not here today, but Dan's a good friend, and he  
19 would very much appreciate your comments, and as do we all,  
20 sir, on the two Raiders.

21 Sir, you know, body armor -- one of the things that  
22 I'll start this with -- and I've stated this before, as the  
23 father of a marine, and I'll tell young marines, "I care  
24 about your comfort, but I care about your protection and  
25 survivability a whole lot more than your comfort." So, what

1 we've done, sir, is, we've gone from what we used to  
2 consider -- we call it "5 to 95" -- we would try to fit  
3 every marine from the 5th percentile to the 95 percentile.  
4 Because we've got some really, really big marines, and we've  
5 got some really small marines. In fact, we just  
6 commissioned Hershel Woody Williams, who was not allowed to  
7 go to the Marine Corps, even though a Medal of Honor  
8 Recipient on Iwo Jima, because he was too short. So, some  
9 of our small-stature marines, doesn't always mean women. I  
10 mean, smaller. Again, Woody was not allowed to join the  
11 Marine Corps until they lowered the height standards.

12 We've gone to 2 and 98, so we've taken those who don't  
13 -- just by formfitting, sir, not just small, medium, large.  
14 We have to be a little be a little more creative and  
15 conforming. We've gone from 15,000 who were -- fell outside  
16 the 5-to-50 -- 5-to-95 -- down to about 3300; 297, exactly,  
17 are -- as of today -- are below -- we can't best-fit on the  
18 small-stature marines. So, we've really shrunk down the  
19 number of marines, large and small stature, who are not  
20 best-fitted, just by modifying our outer tactical vests, our  
21 plate carriers.

22 The one thing that I just spoke to General A.J.  
23 Pasagian about, who's our head of Systems Command, is, we  
24 are working with moving from ceramic to a plastic. Because  
25 the ultimate goal, sir, is conformal body armor. Conformal

1 would mold to anyone's body style. That's a pretty big  
2 lift, at this point, sir, to still provide protection  
3 against multiple strikes. We have not gotten there, sir,  
4 but we have not stopped experimenting. But, the sizing  
5 factor has taken us from, again, 15,000 who were outside,  
6 down to about 3300, 297 -- frankly, most of which are female  
7 -- but, 297 of our shortest-stature marines are now outside  
8 that, down from about 2500. I take the number -- I'll take  
9 for the record, sir, on the number, but it is now 297.

10 Senator Blumenthal: Yeah. If you could provide any  
11 more information you think is relevant, take --

12 General Smith: Absolutely, Senator.

13 Senator Blumenthal: You know, Senator Kaine and I are  
14 both fathers of marines. I don't know whether he's  
15 mentioned that. But, I really first became aware of this  
16 body armor issue when my own son was serving in Helmut  
17 Province and came to learn that our male marines did not  
18 have body armor protecting them below the waist, and worked  
19 very hard with then-Secretary of Defense Ash Carter to make  
20 sure that that body armor was delivered more expeditiously  
21 so that marines in the field would be better protected. And  
22 I know that the Marine Corps has been very attentive to this  
23 issue for both males and females. And I thank you for that  
24 focus, because you're absolutely right, comfort is not the  
25 objective in these situations. Obviously, mobility and

1 dexterity and agility are. And I think our military has  
2 been at the forefront of this effort.

3 I'm going to submit, for the record, some questions on  
4 the CH-53K. I know you're on top of that, Secretary Geurts,  
5 and as you are, Lieutenant General Smith. And I very much  
6 appreciate your being here today and answering my questions.

7 Thank you.

8 Mr. Geurts: Yes, sir. And just briefly -- and happy  
9 to answer your questions -- 53K has really made a lot of  
10 progress over the last year, a lot of hard work by the  
11 marines and by the contractor and by our team. And so, I'm  
12 very happy with the progress that program has made over the  
13 last year.

14 Senator Blumenthal: Well, I think that aircraft could  
15 be, you know, enormously beneficial in so many areas. And  
16 I'm thankful that we're making progress.

17 Thank you.

18 Senator Perdue: Senator Hirono.

19 Senator Hirono: Thank you.

20 Senator Geurts, I was very interested in your  
21 discussion about your integrated strategies. And is it that  
22 -- China, one of our near-peer competitors, they have  
23 numbers of assets that we can't keep up with, in terms of --  
24 or we can't match, I should say -- even if our technology is  
25 better with regard to our planes and ships, et cetera. So,



1 is this one of the reasons that you are pursuing this  
2 integrated strategy on realigning your resources?

3 Mr. Geurts: Yes, Senator.

4 Senator Hirono: So, this is a relatively new kind of a  
5 process that your strategy -- you're pursuing?

6 Mr. Geurts: It is. I mean, we've always been joint,  
7 previously, and the Navy and the Marine Corps have worked  
8 well together. But, when you're in a competitive situation,  
9 you're really trying to be competitive, and, to use one of  
10 Senator Perdue's terms, you're competing uphill versus  
11 competing downhill, you are looking for every opportunity.  
12 And you've got an abundance mindset. And so, we have an  
13 abundance of marines in the first island chain. Why are --  
14 you know, how do we maximize that abundance to the greatest  
15 effect for the overall team, not just to make them  
16 successful? How do they become part of something larger?  
17 Likewise, if the Navy's got a Navy strike missile, we have a  
18 -- we've already done that, we can hand that over. Or if  
19 the Army's building a JLTV, we can leverage that. So, it's  
20 really leveraging opportunities and taking a really  
21 competitive mindset, as opposed to a preventative mindset.

22 Senator Hirono: So, in order to pursue your integrated  
23 strategies, it requires a lot of coordination across the  
24 services. So, what would be a -- what are some of the  
25 challenges -- major challenges you face in trying to get

1 everybody on the same page and to maximize your  
2 capabilities?

3 Mr. Geurts: I'll speak some and invite General Smith.

4 I mean, a lot of it's -- you've got to be transparent,  
5 right? And you've got to create relationships so that you  
6 can identify the opportunities on the front end, not trying  
7 to engineer them on the back end. Because once programs are  
8 set and requirements are set and, you know, you've got a  
9 program director, that becomes very challenging. On the  
10 other hand, like JLTV, if the Army is going to make that  
11 investment, we have a couple of unique requirements for the  
12 Marine Corps. If we work those in early, not a big deal.  
13 If you try and engineer them in after the fact, could be a  
14 bigger deal. And so, it's --

15 Senator Hirono: So, when you talk about relationships,  
16 at what level are you talking about, relationships?

17 Mr. Geurts: I would say at any, but maybe General  
18 Smith can talk about, in his relationship, particularly with  
19 the Army, on the marine ground equipment.

20 Senator Hirono: General?

21 General Smith: Yes, ma'am, very briefly. So, General  
22 Murray, at Futures Command, and his deputy is a guy named  
23 Lieutenant General Eric Wesley, who's down in Suffolk,  
24 Virginia. We're coordinating and then, at the one-star and  
25 colonel level, it's daily. So, for a very small example,

1 ma'am, the joint light tactical vehicle, our requirement to  
2 place a vehicle in what we call "forward V," forward vehicle  
3 storage on an amphibious vessel, 96 inches. If you're  
4 taller than 96 inches, you don't fit. So, when you do that  
5 requirement with the Army, that is hard and fast, because  
6 we're not moving steel. When we tell the Army that up front  
7 for joint light tactical vehicle -- truly joint -- the Army  
8 says, "Okay, maybe they wanted something that goes to 110  
9 inches," but we cooperate and collaborate down to 96 inches.  
10 High mobility artillery rocket system, we fire the exact  
11 same missiles, the same sled, the same vehicle. Those are  
12 the kind of things that, as we coordinate early, everything  
13 from modular handgun to body armor to the future squad  
14 weapon, all that has to be discussed before you go into,  
15 kind of, low-rate production. And we're doing that on all  
16 those systems -- ammunition. Those are hugely helpful.  
17 Those systems, those relationships are literally at the  
18 program manager through the three- and four-star level on a  
19 daily-up-to-quarterly basis at the senior level.

20 Senator Hirono: I appreciate that. And it's not easy  
21 for services that pretty much were much more self-contained  
22 to now be having to -- I suppose, to be transparent about  
23 what the larger goal is --

24 Mr. Geurts: It's codependence. You have to get  
25 comfortable with codependence. And that's --

1 Senator Hirono: Yes.

2 Mr. Geurts: -- not generally -- and you have to have  
3 an air of humility. And we have to set the example from the  
4 top all the way down to the bottom, and hold that standard.

5 What I would say is, though, with a mission mindset,  
6 and everybody is -- if it's about competing and our national  
7 security, that is the number-one thing that will overcome  
8 human natural instinct to want it, own it all, and create  
9 the idea themselves.

10 Senator Hirono: I think that's the kind of change,  
11 basically, that I'd really like to see, not only described,  
12 but being effective.

13 So, as we talk about modernizing the -- your equipment  
14 and your military platforms, I found the discussion about  
15 body armor very interesting, because I don't know who helped  
16 you to develop -- I'm looking at the General now -- develop  
17 this kind of new armor to fit the -- and, you know, all of  
18 the new technology that you are having to go to. So, I take  
19 it that you are much more involved with the private sector,  
20 partnerships with small businesses, et cetera, to come up  
21 with the innovations that you're seeking. So, is that a --  
22 is that happening?

23 General Smith: Yes, ma'am. And I'll pass Secretary  
24 Geurts on the partnership with industry, but General  
25 Pasagian and his people that work down in Quantico -- when I

1 go to a townhall and discuss with them -- there'd be a few  
2 hundred people, and I'll ask them, "If you've got to -- if  
3 you have somebody in the Marine Corps that you love -- a  
4 son, a daughter, somebody you love -- raise your hand."  
5 There's always 30, 40, 50 hands go up. And so, they're  
6 committed, and they -- as Senator Kaine, myself, Senator  
7 Blumenthal, we have children in the Marine Corps. Now  
8 there's skin in the game. People are committed to finding  
9 the solution that best protects the lower-body-extremity  
10 armor that was produced by Dr. Carter as the SECDEF, those  
11 kind of things.

12 But, I'll defer to Secretary Geurts on the industry  
13 piece.

14 But, we're being as creative as we can, because -- I  
15 mean, those are our marines. We have to -- we can't let  
16 going home at 4 o'clock change some lance corporal who's out  
17 there right now on the first island chain just saying, "Man,  
18 I wish I had a better piece of equipment." They get that.  
19 They're committed to it. If they weren't, in all candor,  
20 I'd get rid of them.

21 Senator Hirono: Just very briefly, because I have run  
22 out of time.

23 Secretary Geurts, are you actively pursuing these kinds  
24 of partnerships, in terms of --

25 Mr. Geurts: Absolutely. We talked about our --

1 Senator Hirono: -- looking to them --

2 Mr. Geurts: -- exercises. Happy to --

3 Senator Hirono: -- technologically --

4 Mr. Geurts: -- last year, we had \$16 billion that went  
5 directly to small business out of the Department of the  
6 Navy, a -- biggest small-business year we've had. So, they  
7 are a driver of innovation. It's up to us to create the  
8 relationships and the business processes that leverage them.

9 Just briefly, on the Small Business of Innovative  
10 Research. We've been working on that end-end process,  
11 because the small business -- getting cash fast is really  
12 important. We take in our 128 day from idea to on contract  
13 right now. We're going to 28 days. If we can get to that  
14 kind of responsiveness, then we'll become an attractive  
15 place to do --

16 Senator Hirono: Yes.

17 Mr. Geurts: -- business for these smaller innovative  
18 companies.

19 Senator Hirono: Thank you.

20 Thank you, Mr. Chairman.

21 Senator Perdue: Senator Kaine.

22 General, you know, it's hard to look at the Ukraine and  
23 Syria, Iraq, Yemen, and these active hotspots around the  
24 world, and you see a lot of new things happening in close  
25 combat, like tandem warhead RPGs, you know, highly advanced

1 antitank capabilities of our adversaries. You've got to  
2 believe some of this is Russia finding its way in there.  
3 Maybe Iran. But, whatever, how does this threaten, you  
4 know, the anti-armor -- or the armor upgrade packages for  
5 the M1A1, the LAVs, and the new ACVs? I mean, what are we  
6 doing to adapt to this increasing capability of these --  
7 what we see already in the current battlefields out there?

8       General Smith: So, sir, we coordinate very closely.  
9 The Army normally has the lead for what we call APS, active  
10 protective systems, things that, when an RPG is fired at any  
11 vehicle -- it doesn't even have to be an armored vehicle --  
12 could defeat an inbound round, an inbound warhead, or an  
13 inbound larger-caliber round. So, we do coordinate with  
14 them. I will say, though, sir, for us, as the lightest  
15 force, when you start getting to active protective systems  
16 on vehicles, adds a significant amount of weight. And that  
17 weight is always a concern. As you -- agility, mobility is  
18 also a protective mechanism for us. And so, the ability to  
19 move quickly to go where you are not expected to go causes  
20 the enemy to have to, again, change and look at the entirety  
21 of the battlefield, vice, "Well, he's so heavy, he's going  
22 to be on this road, so we can mine this road or focus on  
23 this road." If I can be anywhere, that really does spread  
24 it out, sir.

25       Senator Perdue: We really aren't changing much on the

1 ACV to accommodate these adaptations we see in it currently?

2 General Smith: Sir, I would say that we're always  
3 looking for a system that is light enough to be employable,  
4 to give protection, but there will come a point, sir, if we  
5 continue to add, we would turn the amphibious combat vehicle  
6 into an amphibious tank --

7 Senator Perdue: Yes, sir.

8 General Smith: -- and that would be untransportable to  
9 shore, it would not mobile enough to suit our needs. So,  
10 it's a constant -- you know, historically, sir, it's the  
11 Knights at Agincourt. You don't want to be so heavy you can  
12 be knocked off your horse and killed by a pike.

13 Senator Perdue: And the reverse question, obviously,  
14 is, Russia and China are both dealing with this same issue  
15 in reverse. And the active protection system -- it looks  
16 like Russia's really doing a lot more research, and you see  
17 some of that in the field already. Are we doing -- are we  
18 trying to -- obviously, we are, but, I mean, what are we  
19 doing to try to keep up with their increase, you know,  
20 protection of their big vehicles, as well?

21 General Smith: So, sir, I would tell you that we're  
22 constant -- I would say, in the -- in this setting, sir, I  
23 would say we are constantly looking for munitions that will  
24 defeat active protective systems. And openly, sir, we can  
25 say everything from the timing of multiple rounds going in



1 to the methodology by which that round impacts and spreads  
2 its kinetic energy, we're looking at that all the time, and  
3 experimenting, sir. And that's -- respectfully, sir, I  
4 probably wouldn't go a whole lot further --

5 Senator Perdue: Yes, sir.

6 General Smith: -- here.

7 Senator Perdue: I understand.

8 General Smith: But, be happy to come back in a other  
9 setting, sir --

10 Senator Perdue: Yes, sir.

11 General Smith: -- and show you what we are working  
12 with.

13 Senator Perdue: We may well try to do that, and  
14 combine that with the Navy. We have another need to do it  
15 on the Navy side, too, particularly with regard to the  
16 ranges and the lethality of the weapons, because that really  
17 does affect the number of our ships and submarines that we  
18 actually have to have. This 355 number keeps popping up,  
19 but our increasing lethality and the way that we fight the  
20 force is changing so dramatically in this current NDS  
21 strategy.

22 That's all I have, Senator Hirono.

23 I want to thank Secretary Geurts and General Smith.  
24 Thank you so much for your candor and, obviously, your  
25 professionalism in answering these questions. And if there

1 were questions, if you'll just submit it to the committee,  
2 that would be greatly appreciated.

3 With that, we stand adjourned. Thank you.

4 [Whereupon, at 11:13 a.m., the hearing was adjourned.]

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25