

Summary
House Armed Services Committee Subcommittee on Strategic Forces Hearing:
“Near-Peer Advancements in Space and Nuclear Weapons”
February 23, 2021

Member Statements (not published yet):

- Chairman Jim Cooper (D-TN)
- Ranking Member Michael Turner (R-OH)

Witnesses:

- Gen Robert Kehler (ret.), Affiliate, Center for International Security and Cooperation
Stanford University
- Ms. Madelyn Creedon, Nonresident Fellow, The Brookings Institute
- Mr. Todd Harrison, Director, Aerospace Security Project, Center for Strategic and International
Studies
- Mr. Tim Morrison, Senior Fellow, The Hudson Institute

Highlights:

- Rep. Doug Lamborn (R-CO) discussed the decision to relocate the U.S. Space Force. Witnesses present cited the need for “stability and continuity for the workforce and the contractors that support the Space Command.”
- Todd Harrison, CSIS, notes that China and Russia are “closing the gap” with the U.S. regarding space capabilities due to vulnerabilities the U.S. is not addressing. He recommends that the U.S. develop a more diverse and resilient space architecture of satellites in multiple orbits and technologies to defend satellites from jammers and kinetic attacks.
- Chairman Cooper (D-TN) raised the issue of Global Positioning System (GPS) as an example of a space asset under threat.

Member statements:

- Chairman Jim Cooper (D-TN) opens the hearing by first mentioning the Global Positioning System (GPS) as an example of a space asset that is under threat.
 - The U.S. Air Force developed the GPS that provides a service to the entire world at no cost. Rep. Cooper says, “Why would our potential adversaries and even some of our allies spend billions of dollars to copy GPS with their own proprietary versions, and then to develop technologies that could destroy our GPS satellites?”... “Friendly neighbors don’t do that.”
- Ranking Member Michael Turner (R-OH) establishes that the advancement of hypersonic missiles, tactical nuclear missiles, and anti-satellite weapons by China and Russia should concern the United States.
 - In quoting General Hayden, Ranking Member Turner notes, “Russia and China are building capabilities to challenge us in space because if they can challenge us in space, they understand as dependent as we are in space, they can challenge us as a nation.”
 - China and Russia have aggressively begun to challenge international norms and global peace using instruments of power and threats of force in ways not seen since the cold war and in new ways which were never seen in the cold war, such as through cyber-attacks and threats in space.
 - He also quotes [DIA’s report](#) that Russia and China have incorporated space into their military doctrines, designating space as “important to modern warfare” and that they view counter-space capabilities as a means to reduce U.S. and allied military effectiveness.

- “Failing to ensure that we have a credible nuclear deterrent as well as space and counter-space capabilities will have a profound and incalculable impact on U.S. national security. This makes it even more critical that we execute the modernization of all legs of the nuclear triad.” Citing that this is necessary to keep international peace and deter Russia and China from contemplating a conflict with the United States.

Witness Testimonies:

- Ms. Madelyn Creedon, Nonresident Fellow, The Brookings Institute
 - Creedon acknowledges Chinese development of kinetic and non-kinetic satellite systems and has tested these capabilities in a very public way. It is expanding its on-orbit military capabilities and the concerns this could present to U.S. national security.
 - In addition to building new innovative nuclear capabilities, Russia has also created an anti-satellite capability. It is expanding its ability to take away U.S. advantage in space while expanding its own on-orbit capabilities.
 - Creedon suggests five possible responses the U.S. could forgo to address the mentioned threats:
 - Understand the threats and the drivers for Chinese and Russian policies and programs, pay attention to the intelligence, including the uncertainties.
 - Have extensive and serious consultations with allies and partners. And work with here when possible. Do not just inform them of decisions made.
 - To the maximum extent practicable, share some of this thinking publicly, including having discussions with academics and thinktanks.
 - Do not take anything off the table at the outset of the review. Be guided by the analysis and understanding gained during the review to shape policies and postures.
 - Re-establish substantive discussions on strategic stability with Russia, China, and our Allies. Explore options and topics for transparency, explore mutual misunderstandings, don’t express arguments out of hand, and seek agreements, if possible, which ensure stability.
- Gen. Robert Kehler (ret.), Affiliate, Center for International Security and Cooperation Stanford University
 - Gen. Kehler begins by explaining the diverse nature of the national security threats both China and Russia present to the U.S. He explains that the diverse nature of capabilities combined with modernization efforts that are backed by modern nuclear threats empowers these nations to “credibly hold us at risk without concern for having to cross the nuclear threshold and use that to leverage our decision making.” “This credible strategic threat is going to raise the risks and costs of our intervention in regional affairs and enable more uncertain foreign policies and aggressive behaviors on their part.”
 - China and Russia are making determined investments to exploit our vulnerabilities and threaten our most important national security space capabilities.
 - There is great concern for what both countries are doing in space. Both have practiced orbital rendezvous and inspection. Both have gotten close to our national security satellites and performed what looked like intelligence gathering or rehearsals to attack them in some way.
 - He is concerned about cyber threats to our satellites.
 - Gen. Kehler acknowledges the need for continued investment in the Space Force and the need to develop capabilities to deny any space threats.
- Mr. Todd Harrison, Director, Aerospace Security Project, Center for Strategic and International Studies
 - Space has been and is further becoming a war-fighting domain.

- From the beginning, space has been militarized, and more recently, it has been weaponized (satellites that attack other satellites). The question for this hearing then doesn't become do we militarize/weaponize space but rather how to respond to the threats the U.S. faces within the domain.
- China has yearly been testing anti-satellite weapons, and Russia has more recently gotten involved with similar efforts.
- He discusses other forms of space weapons, including lasers, which can affect satellites' sensors, electronic warfare systems that can jam or spoof the signals going to or from satellites, and cyber-attacks against ground systems that control satellites.
- Harrison offers four recommendations for the subcommittee:
 - A priority should be placed on improving space domain awareness capabilities to include more space-based sensors, better integration with commercial and friendly foreign governments space surveillance networks, and the use of Artificial Intelligence (A.I.) to analyze data and form a better understanding of adversary's capabilities and intentions.
 - New space architectures are needed, which use a combination of distribution proliferation and diversification of orbits. New architectures do not necessarily need to replace legacy architectures but rather should be used to supplement and diversify existing space capabilities.
 - Non-kinetic active defenses such as onboard jamming systems are needed to protect high-value satellites from kinetic attacks. DoD should also explore a physical seizure capability that can grab uncooperative satellites that pose a threat to critical military capabilities or the space environment itself
 - New options should be considered to improve DoD's integration with commercial space operators. Such an option could include creating a program like the civil reserve air fleet with commercial space companies.

Q&As:

- Representative John Garamendi (D-CA)
 - Is it time for the U.S. to engage fully in arms control negotiations as it pertains to space and space security?
 - Creedon – Short answer is: yes. The U.S. needs to do so from a basis of strength and knowledge and from a willingness to have hard discussions about what threats for both sides by engaging in efforts to see where the other side comes from.
 - Gen. Kehler - Deterrence needs to be the priority in all discussions.
- Representative Doug Lamborn (R-CO)
 - Representative Lamborn questions opinions on the relocation of the Space Force in response to Harrison's overt disapproval of the move.
 - Harrison disagreed with the decision, citing the need for "stability and continuity for the workforce and the contractors that support the Space Command," especially in the context of the hearings discussion, which encourages a lot more work from the branch.
 - There was an insinuation that it was a political move that was unnecessary and could cost the American taxpayer a lot of money for something that is superfluous. Space Com has always operated out of the Colorado Springs area, and there is no feasible reason for it to move.
 - It's valuable currently, and a key alignment, that the commander of space command is co-located with the Space Force's space operations center. Separating the two could hurt the U.S.'s ability to respond to space crisis effectively.
- Representative Salud Carbajal (D-CA)

- The global space industry is expected to bring in revenue of more than \$1 trillion by 2040, up from \$350 billion currently. While the United States is historically a leader in space and is still a leader in space, China is rapidly growing its space industry and has been aggressive in capturing space services market share in developing nations and attracting international partners aligned with the United States. What are the national security implications as China continues to grow their space industry and develop these international partnerships?
 - Gen. Kehler – Currently, our space capabilities are the leading space capabilities in the world both in terms of national security and our commercial industry. However, such scenarios, as the congressman has mentioned, present severe implications for U.S. national security. The risk is that our primacy in this realm goes away due to a determined effort by the Chinese, in particular, to take our place.
 - Harrison – While China is making advances in their space capabilities, what is potentially more concerning is that China is making advances in its counter space weapons faster than the U.S. is making its advances in our defenses against those counter space weapons—in effect, allowing them to “close the gap” and take advantage of our vulnerabilities.
- Does the United States have a sufficient whole of government strategy to ensure continued space superiority in the next decade?
 - Harrison believes the U.S. has the beginnings of a whole of government space strategy. However, he thinks progress towards achieving that has been slow and uneven, deserving continued focus from the new administration. Further, such efforts require ongoing close coordination between DoD, the intelligence community, DoS, NASA, and DoC.
 - The U.S., in a whole of government approach, could also do better in trying to reach an internal agreement about norms of behavior in space
- To respond to space issues, should the U.S. engage China? What would be most useful in beginning those discussions?
 - Answers will be submitted to the record