The Strategic Defense Initiative in Retrospect:
The Past, Present, and Future of Missile Defense

April 28, 2023
Elliott School of International Affairs
Through Partnership with RAND
Conference Agenda and Notes

10:00am, Welcome Remarks: Alyssa Ayres, Dean, Elliott School of International Affairs, George Washington University
Forty years ago, President Reagan introduced the Strategic Defense Initiative (SDI), dedicated to developing advanced technologies to defeat ballistic missile threats. Today, we face threats from more than just the USSR/Russia, like when Reagan was president. We must consider the future of missile defense, including technologies and policies. We must consider the implications of these, and other associated technologies, on international affairs.

10:15 am, Keynote Lecture: Mallory Stewart, Assistant Secretary of State, Bureau of Arms Control, Verification, and Compliance (AVC)
A short history of SDI: During Reagan's presidency, SDI was considered critical to achieving a world without nuclear weapons. Then, President George H. W. Bush authorized GPALS to bring Russia to embrace strategic defenses. President Clinton's emphasis on theater missile defense supported signing the bipartisan Missile Defense Act of 1999. Increased missile proliferation led President George W. Bush to withdraw from the ABM treaty in 2002 and deploy global missile defense infrastructures abroad.

Today: Key legacy of the SDI is that it did not aim to achieve a unilateral strategic advantage. US missile defense strategy was and remains a defensive proposition. There is a bilateral consensus on arms control policy and progress. Offensive missile defense capabilities continue to evolve partly due to increased nuclear capabilities by global adversaries (PRC, DPRK, Iran). Challenges to missile security include hypersonic glide vehicles and hypersonic cruise missiles. The threat from these capabilities is growing, and the need to increase missile defense capabilities increases. The US relies on the capability and reliability of its strategic missile defenses to deter strategic challengers. International cooperation is a force multiplier for regional stability, and the US network of Allies and partners is critical to national security. We must combine deterrence and arms control to enhance collective security.

Q&A highlights:

- From the DoS perspective, we must ensure close collaboration with USSF/DoD/MDA and continue to work at the UN to proliferate norms.
- Outreach to Allies and partners for norms proliferations includes incorporating Ally and partner responses to DoS arms control policies. Be careful not to direct missile defense policies at the PRC or Russia. Russia has been pragmatic in its missile defense policies.
- We are open to sharing underlying technologies and research to show that missile technologies are defensive. The 2022 MDR states that we need to work to see where we can be more transparent. Historically, transparency is stabilizing and prevents miscalculations.

- Arms control depends on verification, not just in treaties but in normative and non-binding aspects. We are trying to use new technologies so that we don't have to do on-site inspections for nuclear verification.

11:00 am, Reflections on SDI: Panel Members

- Dana Johnson, Director, International Outreach & Policy, Office of the Under Secretary of Defense (Research & Engineering); Asif Siddiqi, Professor, Fordham University; Anthony Eames, Director of Scholarly Initiatives, Ronald Reagan Presidential Foundation; Stanley Orman, Former Minister in British Embassy Washington, Deputy Director of AWRE, Aldermaston, and Director General of UK SDI Participation Organization; *Moderated by* Professor Aaron Bateman, George Washington University

- Dana participated in early engineering studies with Rockwell and joined Rockwell as the only non-engineer focused on space surveillance and strategic warning systems. She looked at how the policy for those systems was developing and how it shaped the engineering of satellite systems.
- Asif has been working on a project to reconstruct the Soviet response to SDI. In his research, he's seen through these reports and letters from Russian officials in the 1990s that SDI would allow a first strike by the United States and might even allow the US to attack ground targets from space. Three things about SDI: the Soviet response was confused, ambivalent, and often contradictory. SDI caused the USSR to increase its missile defense budget in 1985 for a symmetric response. But then, in 1986, they decided on a more asymmetric response with ASATs (less expensive) because scientists lobbied that SDI was a waste of money.
- Anthony suggested that in 1983, deterrence asymmetries were highly acute, specifically social dimensions. Mutual assured destruction (MAD) – no one wanted to die by nuclear weapons in the 1980s. High-value technologies matter economically to many states, and the United States leveraged these technologies that its Allies were developing for the SDI program.
- Stanley was the British minister responsible for all US and UK defense exchanges when President Reagan made his SDI speech. He thought SDI was an excellent opportunity to work closely with the United States and wrote a letter to Margaret Thatcher to ensure the UK's role. Adversaries must believe you have the capability and will to use the systems you have to ensure deterrence. Strategic art is convincing people that you're willing to use your capabilities.

Q&A Highlights

- Asif: The US space shuttle program was a turning point for the Soviet's ideas on space. Then in the 70s, the Soviets realized the US was militarizing space. In the late 1970s, the USSR funded a project called "Background" that would similarly militarize space.
- Stanley: the UK knew what the US was doing in the 80s and learned that the Soviets had misinterpreted what the UK had done (after a meeting between Gorbachev and Thatcher). Stanley initiated a program in the UK for a reentering decoy (from space) because the UK didn't have that capability then.
- Stanley noted there may have been opposition to Thatcher because of her strong character, not because she was a woman. Opponents saw SDI as undermining MAD. Thatcher was the only leader who understood what Reagan was aiming for. She played SDI as an R&D program and not an offensive program. Any SDI program would require space-based interceptors; they were a part of the *defensive* nature of SDI.

- The UK could sink resources into US' SDI or other S&T options in Europe. Regarding feasibility, many people didn't think SDI was feasible, including politicians and the scientific community, depending on the criteria.
- Dana noted that space logistics was a big part of SDI, including getting all the capabilities into space. In the late 1980s, the US could only launch some of what it needed to meet SDI requirements.
- Stanley noted Reagan would not be happy with succeeding presidents and their treatment of SDI because they didn't focus on the boost and ascent phase.

1:00 pm, Missile Defense at Present: Panel Members

- Laura Grego, Senior Scientist and Research Director, Global Security Program, Union of Concerned Scientists; James Bonomo, Senior Physical Scientist, RAND; Mark Lewis, Executive Director, National Defense Industrial Association; Sanne Verschuren, Marie Curie Postdoctoral Fellow, Center for International Studies, Sciences Po; *Moderated by* Professor Aaron Bateman, Director, Space Policy Institute, George Washington Univ.

- Laura argued that missile defense systems have yet to show their effectiveness. The 2022 MDR reflects the knowledge that other states have increased their ICBM development efforts. Given the poor performance of US ground-based missile defense systems, China and Russia have taken note. Moscow and Beijing are anxious about significant investments in missile defense technologies and that the US might employ a first-strike option; therefore, they are increasing their focus on first-strike capabilities and space-based missile defenses.
- James noted that the Soviets/Russians and Chinese have a confirmation bias to see our actions as aggressive/offensive instead of defensive. ASD Plumb pointed out that the Chinese have about 300 ISR satellites, so why would they be concerned about only dozens of US defensive missiles? They are worried the US will figure out which satellites are strategic vs. tactical and know which ones to destroy at the beginning of a war.
- Mark took part in an MDA organization exercise and recognized that MDA progressed from being an S&T organization to an operational organization. He found that a lot of bureaucracy at MDA slowly crept in, but it's improved in the last five years. Should MDA be in R&E or A&S? Once OSD/AT&L broke up – it decided on R&E. There are ongoing discussions debating whether it should move to A&S. Mark believes it definitely should **not** be located within the USSF. There has been a serious refocusing on the systems engineering aspect of MDA because of some issues within the agency; it also has the stick for hypersonics programs.
- Sanne said that she has a different perspective as a political scientist. Since 2016, the US has been at a crossroads, whether to focus on air and missile defense or missile defense from space. The Biden administration has increased its focus on missile defense, and more resources have been allocated to IAMD. She argues that the massive shift in US missile defense priorities is based on different ideas about the threat environment and what role missile defense will play in that new environment. The DoD should focus on what they think is the theory of victory and the role MAD plays.

Q&A Highlights:

- Mark said there is NO debate on the efficacy of hypersonic weapons because we have wargamed this and have shown that they *are* a threat if the US doesn't have them to provide deterrence. It's also why our competitors are building them – to put doubt in US

Allies' minds about the US' willingness to put several thousand Americans in harm's way. To prevent hypersonics "left of launch," solutions depend on your adversary being incompetent. Testing and verifying "left of launch" capabilities is complex; you can't rely on it.

- How do you deal with non-nuclear strategic attack? A conventional attack is vastly cheaper than a nuclear attack. Also, a conventional attack is tough. The US isn't too worried about conventional attacks from adversaries because we can respond with overwhelming force. Mark thinks hypersonics are deescalatory, and you are less likely to get in a nuclear shooting war with more hypersonics proliferation.
- The Chinese and Russians can afford hypersonics, so they may have figured out how to make them cheaper than the US. Tactical systems or air breathers probably shouldn't be more expensive than standard missiles.
- Mark doesn't think MDA reorganization will fix anything, and he's a strong advocate for keeping it where it is within OSD/RE. There was a discussion between Mark and James on the reorganization, and there are arguments for both reorganizing and the status quo.
- Laura noted that the MDR was a way to reckon with the lack of capabilities to defend against other states' nuclear capabilities. The US missile defense is lacking even though the USG has spent a lot of money to ensure it's highly capable.
- The panelists discussed monetary versus strategic costs and decision-making on missile defense developments. NOTE: MAD is not an official US policy; it describes the security dilemma.

2:15 pm, The Future of Missile Defense: Panel Members –

- Jeffrey Lewis, Professor, Middlebury Institute of International Studies at Monterey; Sarah Miniero, Principal, Potomac Advocates; Dean Cheng, Senior Advisor, China Program, United States Institute of Peace; Tom Karako, Senior Fellow, International Security Program and Director, Missile Defense Project, CSIS; *Moderated by* Professor Scott Pace, Space Policy Institute, George Washington University

- Scott mentioned the concept of continuity in government and space policy because space takes a long time to get big things done. He asked the panel to talk about the issue of continuity and change within space policy and missile defense.
- Jeffrey said that we are entering a period where there will be an intense arms race; we need to focus on arms control to survive this arms race. This coming era will be different from the 1980s because we have technological clarity and don't have an escape from the arms race. China realized that building nuclear silos was a cheap way to deter the US, and the best way to target missile defense systems was to target satellites. If we return to arms control in the future, it will include limitations and caps on the forces we're building, not a reduction of warheads.
- Sarah argued that missile defense and nuclear arms control require public debate and robust discussions. Trends for the future include the integration between missile defense and space; you're seeing that right now in USSF and SDA with OPIR and other technologies. She worries about the ground infrastructure, cyber security, and C2 of the US' related missile defense systems. The way the US conceptualizes missile defense is further ahead than most other states, and it will be interesting when talking about regional and homeland missile defense in the future.
- Dean spoke about Chinese views on missile defense, but there is little research material because China is reducing access to publications. Missile defense needs to be looked at in the broader

modernization of the PLA. PLARF is a full-blown service that includes more bureaucracy and the expansion of Chinese nuclear forces. The PLA's demonstrations show that China has the resources and political will to overcome engineering and resource challenges. Dean doesn't believe that fielding missile defense means China is interested in using them. He believes there is a possibility that it will make the world safe for conventional war because nuclear weapons will deter more nuclear use capabilities.
- Tom prefers to use "missile defense" vs. BMD. He responded to Jeffrey's comments about not escaping a nuclear relationship with Russia and China but wants to emphasize that it's essential to focus on the diversity of missile defense capabilities, including non-nuclear strategic attack. Global entities emphasize that fires and air defense are two top modernization priorities. He thinks non-nuclear strategic attack is the most significant danger, like a large attack on Guam, which is why air and missile defense is so important.

Q&A Highlights:

- Sarah spoke about the mixing of space and missile defense and mentioned that space-based missile defense is here and will be in the future. You need space as a part of the kill web to defend. Space-based interceptions are good because it pulls interception to the left. We don't have them now because of a policy decision, and it will take a while to get them if the policy discourse changes. Jeffrey disagrees because of the costs, and what he's worried about is the arms race, and space-based sensors make attractive targets. Tom thinks that the technology we have now is making space-based interceptors easier than it was in the past. He says we'll get a space-based capability because of the creation of the USSF and other space warfighting capabilities (USSPACECOM), but it won't look like *Brilliant Pebbles*.
- Sarah discussed why MDA and USSF should not be combined; MDA is still figuring out how it works within OSD/RE. MDA has unique acquisition authorities and needs to get capabilities quickly by breaking standard acquisition molds. There is connective tissue between the two organizations in missile warning, but MDA authorities don't scale well to the USSF. Tom suggested that the MDA might work better within USSPACECOM because of user procurement requirements.
- Dean notes that while our adversaries have made missiles an integral part of their offense, we have not. Our partners and allies probably won't be OK with hosting our offensive missiles. Tom disagrees because we are changing our focus to invest in standoff weapons instead of platforms. We can't rely on a "business as usual" approach to basing these weapons. The US Marines, Japan, and Australia are acquiring tomahawks, an example of how we're changing our way of staging missile defense capabilities. Our Allies will realize they need to be more open to staging these capabilities themselves because of the increasing threat from China in the region.
- There was a more nuanced conversation about regional strategic missile defense. Jeffrey is uninterested in regional defense because offensive nuclear capability is what deters our adversaries. We must think more nuanced about US deterrence and how we extend that deterrence to our Allies.