

2018 NPTE Topic Paper: Military Technology

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Background

Summary

While the United States continues to lap the rest of the world in military spending, a number of key strategic decisions loom large in the next few years. Technological advances offer a number of next-generation weapons, each of which bears the potential to cement American primacy for decades to come but also the risk of becoming yet another costly and underperforming debacle. Moreover, there are significant debates to be had about whether America ought to be investing in next-gen weapons in the first place; perhaps it should allow its primacy to wane, or perhaps some of these technologies represent a Pandora's box that ought not be opened. On the whole, debates about next-gen military technology are at the heart of future American military policy and also make for some of the most downright fun topics in parliamentary debate.

Proposal

The United States federal government should significantly increase its investment in the deployment of next-generation military technology in the United States military.

Topics

Long Range Strike Bomber

Background. The B-52 has served the US well for decades as a long-range strike bomber bearing the aerial portion of the nuclear triad, but the WW2-era platform is substantially outdated and in sore need of replacement. The US is well aware of this and has begun the process of replacement, soliciting bids from Grumman and Boeing/Lockheed and selecting the Grumman variant. However, the platform will not see the battlefield until the mid-20s at the earliest, with cost listed as the most significant inhibitor to a faster deployment.

Topic. The United States federal government should significantly increase its investment in the deployment of the Long Range Strike Bomber in the United States military.

Justification. The B-52 (and someday the LRSB) is essential to the aerial third of the nuclear triad, and thus is a key factor in overall deterrence. The presence of a credible long-range bombing threat is also important in conventional military actions, particularly as hotspots flare in the Asian theatre. Conversely, the costs of accelerating production would be significant and could lead to other tradeoffs; and rapid acceleration of military capacity could destabilize already touchy confrontations.

Affirmative Ground.

- The affirmative can argue that the LRSB is critical to maintaining the nuclear triad and shoring up deterrence, particularly key to tackling the contemporary threat of Russian aggression. They can also hearken to broader long-term theories of the benefits of deterrence.
- The affirmative can also argue that the LRSB would aid in short-term conventional military actions. Having an aging bomber acts as an Achilles' heel to the entire operation, as fighter resources must be reserved to more carefully protect it and its range and carrying capacity can inhibit missions.
- Finally, the affirmative can make economy-based arguments, that the acceleration of production would shore up flagging manufacturing and technology industries, as well as component raw materials such as steel.

Negative Ground.

- The negative has unique counterplan ground: the Grumman and Boeing/Lockheed proposals suggested very different approaches to the LRSB, so they can counterplan to use the variant not used by the affirmative and argue that it would fulfill its tasks better (such a counterplan would not be mutually exclusive, but the permutation would double the already prohibitive cost and create quagmire trying to deploy two variants of the same aircraft).
- The negative can read disadvantages about the short-term use of the B-52; its continued maintenance props up several niche industries and economic regions. They can also argue that the LRSB would be unreliable or unsuited in comparison to the B-52 (citing the growing pains of the F-35 Joint Strike Fighter).

- The negative also has access to military tradeoff arguments -- that accelerated funding for the LRSB would result in cuts to other, more important short-term programs.
- Finally, the negative can read a variety of criticisms -- of militarism writ large, the military-industrial complex, deterrence theory, etc.

Railguns

Background. The US Navy has begun conducting tests of railguns mounted on its destroyers. Tests have largely been successful, and the Navy has interest in developing the weapons from an experimental technology into a standard-issue one. Railguns may offer significant benefits over conventional alternatives: the ammunition is lighter and safer to carry compared to explosives or chemicals; they may offer both greater range and greater precision; and their ammunition may be significantly cheaper. However, they require substantial electricity-generation capacity to fire and continued development work is needed for accuracy and durability of the weapons.

Topic. The United States federal government should significantly increase its investment in the deployment of railguns in the United States military.

Justification. This topic represents a core debate around the future of America's blue-water Navy. Railguns offer significant advantages over conventional artillery, but they are not yet battle-ready and as a greenfield technology create substantial risks. The topic lends itself nicely to interesting scientific and technical debates while also creating ground for more traditional hegemony debates.

Affirmative Ground.

- The affirmative can read arguments that railguns are key to the continued primacy of America's blue-water navy (and, accordingly, to hegemony writ large). Railguns

represent a significant technological advancement over the capabilities of competitors like Russia and China, and also improve the efficacy of our navy against air strikes and smaller ships.

- The railgun could also help the navy in contending with asymmetrical threats such as piracy, since they are targeted and their ammunition relatively cheap in comparison to conventional artillery.
- Technological advancements with the railgun in the Navy could open the door to use of the technology in other capacities, e.g. on the ground as artillery. Currently, the electricity required to fire a railgun is prohibitive unless attached to a vessel like a ship which can hold large generators. However, sustained investment could create technological advances that allow the technology to be shrunken and more widely deployed.

Negative Ground.

- As always, the negative has access to military tradeoff disads; this is a largely new and expensive technology to perfect, and in the short-term, other programs could be cut with significant economic and/or geopolitical impacts.
- The negative also has access to naval efficacy disads. Railguns contain a handful of significant weaknesses -- they require substantial electricity to fire (so if an enemy could knock out a ship's power generators, they could instantly disable its offensive firepower) and they currently suffer from issues with durability (they wear out much more quickly). There are also questions as to whether railguns can be targeted accurately enough to serve as anti-air and missile defense. And there are very real tradeoff disads here --

there is limited space to put guns on a ship, so railguns literally trade off with other guns that could be there instead.

- There are also potential economic or military-industrial complex based disads -- the US government invests a lot of money into missile production in the status quo. Railguns represent a substantial directional change that could throw existing defense contracts/contractors into turmoil.
- Finally, the negative can read space-race-esque arguments -- widescale production and deployment of railguns would result in mimicry by competitor nations, which could actually harm primacy. We would have to begin developing defense tactics against railguns, which is an entirely different problem than defense against conventional technologies (and the Navy has spent decades learning how to defend against conventional weaponry).

Laser Weapons

Background. The military (particularly the Navy) has already begun tests and limited deployments of laser weapons. First-generation laser weapons are relatively limited, with the ability to counteract drone-sized aircraft or small boats. However, the military hopes that future systems can serve roles in missile or broad-scale anti-air defense, raising possibilities for expanding both the superiority of our navy and the power of our nuclear missile defense. Conversely, laser weapons may never be able to fulfill their promise; they may require too much electricity to tackle meaningful targets and they may trade off with other, more successful technologies. Moreover, even if successful, naval nuclear defense could destabilize deterrence and/or anger a number of other nuclear powers.

Topic. The United States federal government should significantly increase its investment in the deployment of laser weapon systems in the United States military.

Justification. The topic explores an area of great promise but also great risk for the future of our armed forces. It creates room for interesting and nuanced scientific debates while also permitting trade-off arguments, relations disads, and more theoretical debates about the function of nuclear deterrence. Also, lasers are cool.

Affirmative Ground.

- The affirmative can read arguments about hegemony and/or naval supremacy; lasers have broad potential to expand the power of our military. These arguments can also

verge into more specific scenarios surrounding missile defense and/or nuclear deterrence.

- The aff can also read spillover arguments about the private sector and economic competitiveness. Advances in laser technology have broad applicability in manufacturing, energy production, and more.
- Finally, as with rail guns, lasers can be particularly effective in countering asymmetric threats due to their low cost and highly targeted nature.

Negative Ground.

- Much of the negative ground from railguns is also applicable to lasers. The negative can read arguments about tradeoffs, military efficacy, and weapons races.
- There are also unique deterrence-related disadvantages to lasers. Their potential to counteract ICBMs could upset the careful balance of international nuclear power, forcing other nuclear countries to take any number of measures to avoid losing a credible MAD threat against the United States.

Rods from God

Background. “Rods from God” are a colloquial term for orbital kinetic bombardment weaponry -- in short, the military would deploy telephone-pole-sized rods of metal into orbit, and push them down to allow gravity to pull the rod into the target. The resulting impact could produce as much force as a nuclear explosion, but with greater effectiveness at underground penetration and without creating nuclear fallout. The military has sporadically entertained the notion since the Cold War, but has never taken any concrete steps towards actually implementing the weapon.

Topic. The United States federal government should significantly increase its investment in the deployment of kinetic orbital bombardment weapons in the United States military.

Justification. The topic creates an interesting alternative angle on a deterrence debate. Instead of beefing up more nuclear weapons, the topic asks whether we should invest in a weapon that could (if successful) practically make nuclear bombs obsolete. It’s the sort of topic that best maximizes debate’s potential: unlikely to ever happen in the real world, but a fascinating and fun discussion that creates new angles on age-old theories of international relations.

Affirmative Ground.

- Obviously, hegemony advantages would be core to affirmative ground. Successful implementation of an orbital kinetic bombardment weapon would give the United States

an asymmetrical advantage over any other world power, and such a weapon would be immune to any sort of contemporary countermeasures.

- The affirmative could also read advantages based on deterrence. Currently, a miscalculation or breakdown of deterrence would likely result in the globe being irradiated and covered in dust, causing extinction or near-extinction. A benefit of kinetic bombardment weapons is that they produce no nuclear fallout, utilizing mass and gravity for their destructive effects. If they replaced nuclear weapons as the “trump card” of weapons, a global power conflict would be substantially less likely to result in extinction.
- Finally, investment in an orbital kinetic bombardment weapon would create massive benefits for the aerospace industry. The weapon would require ferrying enormous quantities of metal into orbit, and would rapidly drive forwards the demand for next-generation space rocket technology (as well as benefiting aerospace companies and the economy).

Negative Ground.

- The negative would get core access to space race disadvantages. Orbital kinetic bombardment systems technically do not violate the Outer Space Treaty, but they certainly violate its spirit (in banning e.g. nuclear weapons) and would likely result in responses from China and Russia.
- The negative also gets access to deterrence-based disadvantages. The massive investment cost of an orbital kinetic bombardment system would likely create short-term tradeoffs across our military. Additionally, the aff’s new form of deterrence may not be preferable to traditional nuclear deterrence -- though it has risks, traditional deterrence at least has well-defined theories and rules of engagement, and has held for the past

several decades without resulting in extinction. It remains to be seen whether a similarly stable global order would emerge from a new superweapon.

- Finally, the negative could read tradeoff arguments with other military technologies -- particularly given the large cost of launching sufficient quantities of metal to orbit.

Traditional hegemony (or the economy) could erode before the system can even be fully deployed.

Drones

Background. In the status quo, the military has slowly ramped up its drone operations, but on a relatively small scale -- either filling non-weaponized surveillance functions or piloted manually to launch small missiles at individual targets. These drones have had limited success but also drawn widespread criticism from human rights groups who dislike their civilian casualty rates and are concerned that usage of the drones violates national sovereignty. This sets the table for a robust discussion on the next generation of drones -- should the United States ramp up its investment in drone technology, or scale it down and even abandon it entirely?

Topic. The United States federal government should significantly increase its investment in the deployment of next-generation weaponized drones in the United States military.

Justification. Focusing the debate on weaponized drones gets at the heart of the discussion -- surveillance drones are not nearly as controversial. The topic draws a clear line between drones good/bad ground, engendering a discussion on the numerous factors at play -- international norms, military efficacy, critical theory/human rights, and more.

Affirmative Ground.

- The affirmative can access arguments that drones are beneficial, and/or preferable to alternative options like boots on the ground. Even if drones have had shortcomings, the affirmative can research and contend that next-generation technologies would increase

precision and reduce collateral damage. There are several region-specific scenarios that could potentially be solved by more effective deployment of drones.

- The affirmative can also access ground related to military primacy. Effective weaponized and/or automated drones could improve the scope and effectiveness of American hegemony.
- On an even more theoretical note, it may be beneficial to drive international norms towards war waged by machines rather than people, opening avenues into critical literature about the nature and shape of future militaries.

Negative Ground.

- There are substantial quantities of literature criticizing contemporary American drone policy; nearly all of these arguments would also apply to expansions of drone technology. These arguments include (but are not limited to) human rights grievances about civilian casualties; concerns about the depersonalization of the act of taking a life (via a remotely piloted drone); and criticisms of the erosion of international law and national sovereignty caused by deployment of drones without respect for national borders.
- The negative can also read counterplans to effectively refine the affirmative's deployment of weaponized drones. For example, it may only be beneficial to deploy drones with a limited amount of firepower, or to only deploy drones piloted by a human operator. While the affirmative has some flexibility to direct the types of drones they invest in, the negative has similar flexibility to force the affirmative to defend the whole plan, creating deep education on the various types and nuances of drones.

Star Wars

Background. Back in the 1980s, during the heart of the Cold War, President Reagan initiated the Strategic Defense Initiative. Nicknamed “Star Wars,” Reagan aimed to create a space-based ICBM defense system that could render nuclear weapons obsolete by knocking them out of the sky as they began their flight. Star Wars was never successfully deployed (and the collapse of the Soviet Union dissipated military focus), but recent tensions with North Korea have yet again raised the question of what would happen if another country were to launch a nuclear weapon at the United States -- a question which still has no certain answer.

Topic. The United States federal government should significantly increase its investment in the deployment of an orbital ballistic missile defense system by the United States military.

Justification. While old (and implicating classic elements of deterrence theory), advanced ballistic missile defense is relevant again with the destabilizing belligerence of North Korea. Kim Jong Un has threatened to nuke Guam, and experts are not all that certain that we could stop him if he had a sufficiently powerful missile to reach the island. The topic thus connects contemporary news with decades-old theory to create an interesting and relevant debate.

Affirmative Ground.

- Needless to say, the affirmative can access advantages about missile defense itself. It could prevent the loss of countless lives in the event of a nuclear attack, give the US strategic leverage over belligerent powers like North Korea, and expand hegemony in its counterbalancing effect against China and Russia.

- The affirmative can also leverage auxiliary effects on the economy -- the plan would result in large-scale investment in aerospace technology, manufacturing, computing, and a number of other sectors.
- Finally, the affirmative could access more critical impacts related to nuclear weapons and their potential effect on countless civilians (based on the whims or even miscalculations of a small handful of world leaders).

Negative Ground.

- The negative could access short-term destabilization disadvantages. The original Star Wars threw the Soviet Union into a panic until they realized that we were far away from realizing it -- there is no such guarantee that Russia and China would be so patient with its reincarnation.
- The negative can also access space race disadvantages. Testing the Star Wars system would likely require us to violate existing nuclear treaties and would certainly result in a number of atmospheric launches (and/or cause other global powers to build their own systems).
- Finally, the negative has theoretical access to defenses of traditional nuclear deterrence. International relations theorists have contended that the symmetrical existential threat of nuclear weapons is the best defense against an actual nuclear deployment; if the United States thinks it is immune to nuclear weapons, it may be that much more likely to press the red button.

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