# Defense Innovation DA



## 1NC

### LAWS 1NC

#### The defense industry is growing and stable now – future purchases enable increased innovation of the defense market

Mordor Intelligence, 2022 Mordor Intelligence is a fully revenue-funded organization, since our founding in 2014. To date, we have partnered with 4000+ enterprises across 20+ industries, to deliver precise data and actionable insights in over 6000 projects. Our domain-specific teams of research experts continuously track markets, providing our clients the competitive edge through high-quality market intelligence.(not that Mordor from LOTR)“US Aerospace and Defense Market - Growth, Trends, COVID-19 Impact, and Forecasts (2022 - 2027).” *Mordorintelligence.com*, 2022, www.mordorintelligence.com/industry-reports/us-aerospace-and-defense-market.

The US aerospace and defense market is projected to grow from USD 416.63 billion in 2020 to USD 550.78 billion, registering a CAGR of around 2.37% during the forecast period (2021-2030). The US aerospace and defense sector is undergoing an unprecedented disruption due to the COVID-19 pandemic. Although the sector is projected to recover in 2021, the recovery is expected to be uneven across the two constituent sectors. For instance, the commercial aerospace sector has been significantly affected by the pandemic, resulting in a drastic reduction in passenger traffic, which, in turn, has negatively affected aircraft demand. As a result, the commercial aerospace sector is expected to recover slowly, as travel demand is projected to normalize to pre-COVID levels by 2023. However, the defense sector is expected to remain stable and even grow as the United States has not reduced its defense budget and remains committed to sustaining its military capabilities. Nevertheless, due to the widespread disruption in the supply chain, some defense programs may face minor cost escalations and delays in the short term. The US aerospace and defense sector is one of the largest, globally, in terms of infrastructure and manufacturing activities. In 2019, the total industry sales revenue left a significant footprint on the American economy, contributing to a combined economic value of USD 396 billion, representing 1.8% of the nation’s GDP. The market is primarily driven by investments in the A&D sector and is supported by the rising demand for the products of the A&D sector by both commercial and military end-users. The market is also bolstered by the presence of leading industry incumbents in the US, whose manufacturing and R&D capabilities support the growth of the industry. Scope of the Report The study provides an in-depth analysis of the aerospace and defense industry in the United States. The scope of the study encompasses the commercial and military applications of all aerial assets. Besides, the study also accounts for the developments in the industry pertaining to critical systems and components of aircraft, UAVs, and satellites. For each segment, the market sizing and forecasts have been done based on value (USD billion). Key Market Trends Enhanced Defense Spending Promoting R&D and Manufacturing The United States is ranked as the world’s leading defense manufacturer and exporter. According to SIPRI, the US defense expenditure grew by 5.3% to amount to USD 732 billion in 2019, which is around 38% of the global defense expenditure. The US Foreign Military Sales (FMS) increased by USD 15 billion to reach USD 83.5 billion during FY2020. Besides, the US is one of the world’s largest FDI investors and the leading beneficiary of FDIs. In 2018, FDIs in the US aerospace industry totaled nearly USD 22 billion. This resulted in a significant upgrade of the manufacturing capabilities of key industry incumbents in the US. For instance, in January 2019, Airbus initiated the construction of its A220 Manufacturing Facility in Alabama. Similarly, in September 2018, Planet Labs Inc. invested around USD 183 million to open a 27,000-square-foot new satellite manufacturing and testing facility in San Francisco. In 2020, Lockheed Martin completed the construction of its USD 350 million satellite manufacturing facility, located at the company's Waterton Canyon campus near Denver. As the US envisions to retain its technological superiority over rival forces in terms of deployed platforms and weaponry in the aerial domain, a significant inflow of monetary resources is anticipated to occur during the upcoming period, thereby driving the US aerospace and defense market.

#### A precautionary LAW ban destroys the private sectors’ ability to innovate AI technologies in all areas

[Daniel **Castro**](https://itif.org/person/daniel-castro/) and [Michael **McLaughlin**](https://itif.org/person/michael-mclaughlin/) 02-04-2019 [Daniel Castro is vice president at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Data Innovation; Castro writes and speaks on a variety of issues related to information technology and internet policy, including privacy, security, intellectual property, Internet governance, e-government, and accessibility for people with disabilities; Michael McLaughlin was a research analyst at the Information Technology and Innovation Foundation; McLaughlin researched and wrote about a variety of issues related to information technology and Internet policy, including digital platforms, e-government, and artificial intelligence.

;], “Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence,” <https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence/> Cut By: m.jam

Many groups have started movements to ban lethal autonomous weapons—autonomous robotics systems that can independently identify and engage targets based on programmed constraints—due to fears that they will lead to armed conflict on a scale greater and faster than ever before. For example, 116 founders of mostly small robotics and AI companies, including Elon Musk, signed a letter to the United Nations (UN) in 2017 that urges the body to ban lethal autonomous weapons.36 In 2018, the UN Secretary-General António Guterres stated that “machines that have the power and the discretion to take human lives are politically unacceptable, are morally repugnant, and should be banned by international law.”37 Also in 2018, members of the European Parliament adopted a resolution asking member states and the European Council for “the start of international negotiations on a legally binding instrument prohibiting lethal autonomous weapons systems.”38 If policymakers enacted such a ban, it would slow research into AI, as historically, at least in the United States, defense agencies have been a source of significant funding for technology advancement, such as the Internet. And much of the research to support autonomous weapons would yield dual-use technology that could be used for commercial purposes. For example, a fully autonomous tank will likely rely on large portions of the same algorithms and data used to develop a fully autonomous military transport vehicle.39 These same algorithms would be relevant to developing autonomous vehicles for civilian use.

#### DIB innovation prevents offshore manufacturing and enables US global leadership

Joel S. Yudken **2010** [ is Principal and Founder of High Road Strategies, LLC.  He is a nationally known expert on policy issues that relate to manufacturing, energy, technology, workforce and economic development.  In a career spanning four decades, Dr. Yudken has held a wide range of professional positions in labor, government, academia, industry, and public interest organizations.  His broad background and training in engineering, political, and socio-economic systems enables him to apply a range of qualitative and quantitative research and analytical tools to his work], “AMERICA’S MANUFACTURING CRISIS AND THE EROSION OF THE U.S. DEFENSE INDUSTRIAL BASE,” https://ecommons.cornell.edu/bitstream/handle/1813/88136/afl\_cio\_Manufacturing\_Insecurity\_report.pdf?sequence=1&isAllowed=y Cut By: m.jam

The impacts of an eroding domestic manufacturing base on national security largely stem from the military’s growing reliance on commercial cutting-edge technology since the 1980s. There are reasonable doubts that military technology still lags commercial technologies in all areas, as it generally did during the 1980s and 1990s. Starting in those years, and continuing into the present, defense procurement policy has put an emphasis on promoting greater civilian-military integration, and encouraging agencies and their contractors to purchase commercial-off-the-shelf (COTS) and “dual-use” technology products. The rationale is that drawing on the often more innovative civilian sector not only would yield more up-to-date products but also big cost savings. Many, if not most, “dual-use” contractors and suppliers try to separate their defense and commercial businesses, in large part to avoid the bureaucratic drag of defense procurement requirements on their commercial work. Nevertheless, the ability of a firm to design, innovate, and improve on defense-critical technologies or devices that it produces for defense markets, increasingly depends on its ability to preserve and draw upon the technological edge it has obtained in its commercial business. As military products become more reliant on commercial advanced technologies, technology transfer from commercial technologies into defense-critical products requires a close relationship between the Pentagon or defense contractor customer and the suppliers of these technologies. However, as the commercial base upon which the defense sector relies for most of its components and subsystems globalizes, integrating commercial technology into defense systems becomes more difficult to achieve. That is, the loss of production facilities can lead to the loss of innovation capabilities, which would dangerously undermine the nation’s ability to maintain a strong defense base.

Specifically, the migration of manufacturing offshore is associated with the following trends: ♣ Weakening innovation capabilities of domestic industrial sectors; ♣ The transfer—deliberate and unwitting—of cutting-edge technologies and know-how to economic rivals and potential military adversaries; and 72 HRS/JSY—Manufacturing Insecurity ♣ A decline in the United States’ overall technological leadership in the world.

#### Hegemony is empirically the most stable system and deters all conflict – decline causes transition wars

Robert Kagan, 17, 2-7-2017, Backing Into World War III, https://foreignpolicy.com/2017/02/06/backing-into-world-war-iii-russia-china-trump-obama/, Robert Kagan, Ph.D. in American History from American University, M.P.P. in Government from Harvard University, AVD

Think of two significant trend lines in the world today. One is the increasing ambition and activism of the two great revisionist powers, Russia and China. The other is the declining confidence, capacity, and will of the democratic world, and especially of the United States, to maintain the dominant position it has held in the international system since 1945. As those two lines move closer, as the declining will and capacity of the United States and its allies to maintain the present world order meet the increasing desire and capacity of the revisionist powers to change it, we will reach the moment at which the existing order collapses and the world descends into a phase of brutal anarchy, as it has three times in the past two centuries. The cost of that descent, in lives and treasure, in lost freedoms and lost hope, will be staggering. Americans tend to take the fundamental stability of the international order for granted, even while complaining about the burden the United States carries in preserving that stability. History shows that world orders do collapse, however, and when they do it is often unexpected, rapid, and violent. The late 18th century was the high point of the Enlightenment in Europe, before the continent fell suddenly into the abyss of the Napoleonic Wars. In the first decade of the 20th century, the world’s smartest minds predicted an end to great-power conflict as revolutions in communication and transportation knit economies and people closer together. The most devastating war in history came four years later. The apparent calm of the postwar 1920s became the crisis-ridden 1930s and then another world war. Where exactly we are in this classic scenario today, how close the trend lines are to that intersection point is, as always, impossible to know. Are we three years away from a global crisis, or 15? That we are somewhere on that path, however, is unmistakable. And while it is too soon to know what effect Donald Trump’s presidency will have on these trends, early signs suggest that the new administration is more likely to hasten us toward crisis than slow or reverse these trends. The further accommodation of Russia can only embolden Vladimir Putin, and the tough talk with China will likely lead Beijing to test the new administration’s resolve militarily. Whether the president is ready for such a confrontation is entirely unclear. For the moment, he seems not to have thought much about the future ramifications of his rhetoric and his actions. China and Russia are classic revisionist powers. Although both have never enjoyed greater security from foreign powers than they do today — Russia from its traditional enemies to the west, China from its traditional enemy in the east — they are dissatisfied with the current global configuration of power. Both seek to restore the hegemonic dominance they once enjoyed in their respective regions. For China, that means dominance of East Asia, with countries like Japan, South Korea, and the nations of Southeast Asia both acquiescing to Beijing’s will and acting in conformity with China’s strategic, economic, and political preferences. That includes American influence withdrawn to the eastern Pacific, behind the Hawaiian Islands. For Russia, it means hegemonic influence in Central and Eastern Europe and Central Asia, which Moscow has traditionally regarded as either part of its empire or part of its sphere of influence. Both Beijing and Moscow seek to redress what they regard as an unfair distribution of power, influence, and honor in the U.S.-led postwar global order. As autocracies, both feel threatened by the dominant democratic powers in the international system and by the democracies on their borders. Both regard the United States as the principal obstacle to their ambitions, and therefore both seek to weaken the American-led international security order that stands in the way of their achieving what they regard as their rightful destinies. It was good while it lasted Until fairly recently, Russia and China have faced considerable, almost insuperable, obstacles in achieving their objectives. The chief obstacle has been the power and coherence of the international order itself and its principal promoter and defender. The American-led system of political and military alliances, especially in the two critical regions of Europe and East Asia, has presented China and Russia with what Dean Acheson once referred to as “situations of strength” that have required them to pursue their ambitions cautiously and, since the end of the Cold War, to defer serious efforts to disrupt the international system. The system has checked their ambitions in both positive and negative ways. During the era of American primacy, China and Russia have participated in and for the most part been beneficiaries of the open international economic system the United States created and helps sustain; so long as that system functions, they have had more to gain by playing in it than by challenging and overturning it. The political and strategic aspects of the order, however, have worked to their detriment. The growth and vibrancy of democratic government in the two decades following the collapse of Soviet communism posed a continual threat to the ability of rulers in Beijing and Moscow to maintain control, and since the end of the Cold War they have regarded every advance of democratic institutions — especially the geographical advance of liberal democracies close to their borders — as an existential threat. That’s for good reason: Autocratic powers since the days of Klemens von Metternich have always feared the contagion of liberalism. The mere existence of democracies on their borders, the global free flow of information they cannot control, the dangerous connection between free market capitalism and political freedom — all pose a threat to rulers who depend on keeping restive forces in their own countries in check. The continual challenge to the legitimacy of their rule posed by the U.S.-supported democratic order has therefore naturally made them hostile both to that order and to the United States. But, until recently, a preponderance of domestic and international forces has dissuaded them from confronting the order directly. Chinese rulers have had to worry about what an unsuccessful confrontation with the United States might do to their legitimacy at home. Even Putin has pushed only against open doors, as in Syria, where the United States responded passively to his probes. He has been more cautious when confronted by even marginal U.S. and European opposition, as in Ukraine. The greatest check on Chinese and Russian ambitions has been the military and economic power of the United States and its allies in Europe and Asia. China, although increasingly powerful, has had to contemplate facing the combined military and economic strength of the world’s superpower and some very formidable regional powers linked by alliance or common strategic interest — including Japan, India, and South Korea, as well as smaller but still potent nations like Vietnam and Australia. Russia has had to face the United States and its NATO allies. When united, these U.S.-led alliances present a daunting challenge to a revisionist power that can call on few allies of its own for assistance. Even were the Chinese to score an early victory in a conflict, such as the military subjection of Taiwan or a naval battle in the South or East China Sea, they would have to contend over time with the combined industrial productive capacities of some of the world’s richest and most technologically advanced nations and the likely cutoff of access to foreign markets on which their own economy depends. A weaker Russia, with its depleted population and oil- and gas-dependent economy, would face an even greater challenge. For decades, the strong global position enjoyed by the United States and its allies has discouraged any serious challenge. So long as the United States was perceived as a dependable ally, Chinese and Russian leaders feared that aggressive moves would backfire and possibly bring their regimes down. This is what the political scientist William Wohlforth once described as the inherent stability of the unipolar order: As dissatisfied regional powers sought to challenge the status quo, their alarmed neighbors turned to the distant American superpower to contain their ambitions. And it worked. The United States stepped up, and Russia and China largely backed down — or were preempted before acting at all. Faced with these obstacles, the best option for the two revisionist great powers has always been to hope for or, if possible, engineer a weakening of the U.S.-supported world order from within, either by separating the United States from its allies or by raising doubts about the U.S. commitment and thereby encouraging would-be allies and partners to forgo the strategic protection of the liberal world order and seek accommodation with its challengers. The present system has therefore depended not only on American power but on coherence and unity at the heart of the democratic world. The United States has had to play its part as the principal guarantor of the order, especially in the military and strategic realm, but the order’s ideological and economic core — the democracies of Europe and East Asia and the Pacific — has also had to remain relatively healthy and confident.

## 2NC

### 2NC---DIB UQ

#### The Defense Industrial Base is stable and doing well now

US Department of Defense. 2022. DEPARTMENT of DEFENSE REPORT State of Competition within the Defense Industrial Base. media.defense.gov/2022/Feb/15/2002939087/-1/-1/1/STATE-OF-COMPETITION-WITHIN-THE-DEFENSE-INDUSTRIAL-BASE.PDF.

DoD tracks competition by obligations and contract actions based on data from the Federal Procurement Data System—Next Generation (FPDS-NG). The FPDS-NG competition report measures competition and fair opportunity at the contract and order level. The competition rate is calculated as either the dollars obligated for competitive contracts (i.e., two or more offerors) divided by the total dollars obligated, or the number of contract actions for competitive contracts divided by the total number of contract actions. The competition rate varies depending upon the mission and type of product or service being procured. Competition rates also differ greatly depending on whether the calculation uses obligations or contract actions. The DoD competition rate based on dollars obligated is typically in the 50-60% range; if based on the number of contract actions, the competition rate would be consistently in the 90% range. The competitive environment for the DIB remained relatively stable over the past several years. Over the past ten years, DoD has seen total dollars obligated vary from a high of $420 billion in Fiscal Year (FY) 2020 to a low of $273 billion in FY 2015. During that time, the competition rates ranged from a high of 58.3% in FY 2014 to 50.1% in FY 2020, and projected at 52% for FY 2021, for a ten-year average of 54.2%. Figure 1 displays the ten-year trend for competitive and non-competitive dollars obligated, with the peak of $420B total dollars obligated in FY 2020 due to increased obligations for COVID-19 related actions. To help improve its tracking of competition within the DIB, DoD developed a Procurement Business Intelligence Service Competition Analysis Scorecard to report competition rates at the 3 Obligations refers to the funds reserved in the accounting system upon contract award. Those dollars are obligated under the contract for expenditure. 57.1% 56.7% 58.3% 55.4% 52.8% 52.0% 53.9% 53.9% 50.1% 52.0% 40% 45% 50% 55% 60% 65% 70% $- $50 $100 $150 $200 $250 $300 $350 $400 $450 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 Billions Total Competed ($B) Total Not Competed ($B) Competition Rate (%) Fiscal Year 4 product service code and broader portfolio group levels.4 The competition scorecard provides dashboard-like presentations to help components track and analyze competition trends in portfolio groups for major weapon system platforms (e.g., aircraft, ships, and land vehicles), electronic and communications equipment, and their associated sustainment phases. Historically, these portfolio groups report competition rates in the 15–40% range for dollars obligated, which has a significant impact on DoD’s overall competition rate since these weapon systems and major equipment account for a sizeable portion of the total dollars obligated. The competition scorecards provide management-level reports and tools to enable informed business decisions that support procurement policies with the goal of improving competition in the DoD supply chain and industrial base. Similarly, securing competition varies widely based upon the mission and type of product or service being procured. Generally, those contracting organizations supporting installation-level mission support and logistical requirements (e.g., food service, facility maintenance, grounds maintenance, transportation services) and/or depot-level maintenance services requirements (e.g., contractor logistics support for spare parts) have multiple potential suppliers resulting in very high competition rates. This is also true for contracting organizations heavily involved in services, commercial products, and construction. The competitive percentages are lower in organizations that procure major systems (e.g., weapons, automated information systems), specialized equipment, spares (especially on aging weapon systems), and upgrades that may need to be purchased from the original equipment manufacturer (OEM) or supplier. These programs can require sole-source extensions of contracts that were originally competed because the programs have moved past the stage in their lifecycle where competition is economically viable. These sole-source transactions are made in accordance with statutory requirements that authorize dealing with only one source.

#### Ukrainian business and American military aid is promoting the DIB now

[Stew Magnuson](https://www.nationaldefensemagazine.org/authors/s/stew-magnuson) Nationaldefensemagazine.org**,** 6/15/2022, www.nationaldefensemagazine.org/articles/2022/6/15/ukraine-to-us-defense-industry-we-need-long-range-precision-weapons.

PARIS — Ukraine has a message it wants to convey to the U.S. defense industrial base and the government. The war-torn nation desperately needs artillery and artillery rounds, but what can truly give it the upper hand over its Russian invaders are long-range precision weapons such as armed Predator drones, loitering munitions and the multiple launch rocket system. Denys Sharapov, Ukraine’s deputy minister of the defense in charge of procurement, support for weapons and equipment, and Brig. Gen. Volodymyr Karpenko, land forces command logistics commander, spoke with *National Defense* Editor in Chief Stew Magnuson and other reporters through an interpreter in the Ukraine Ministry of Defense’s booth at the Eurosatory conference in Paris on June 15. Back in Washington, politicians and pundits debated this week as to whether it was practical to send Ukraine armed Predator drones as part of a $40 billion aid package. Sharapov and Karpenko said such technology may give Ukraine what it needs to gain an advantage in the war. The interview has been edited for brevity and clarity. Our readers are about 1,800 corporate members of the defense industrial base in the United States. What message do you have for them? And what do you need from them urgently? *Sharapov:* The [Ministry of Defense] is concentrating currently on fulfilling all the needs of the armed forces. You asked a question about needs. First, you have to understand that the frontline is 2,500 kilometers long. The frontline where there is active combat in more than 1,000 kilometers long. That’s like from Kyiv to Berlin. … As of today, all the people in all of our armed forces and within the defense and security sector is up to one million people. And we have to support them all. We have to supply them with small arms, with personal protection gear and with the means of communication. And of course, to carry out a war in this day and age, we need heavy weapons — that’s primarily artillery systems. As of today, our need for heavy artillery systems is measured by hundreds. That’s why we also need a huge number of rounds for these artillery systems.

### 2NC---LAWS Links

#### Pre-Cautionary tech bans are bad – Innovation should be preferred

[Daniel **Castro**](https://itif.org/person/daniel-castro/) and [Michael **McLaughlin**](https://itif.org/person/michael-mclaughlin/) 02-04-2019 [Daniel Castro is vice president at the Information Technology and Innovation Foundation (ITIF) and director of ITIF's Center for Data Innovation; Castro writes and speaks on a variety of issues related to information technology and internet policy, including privacy, security, intellectual property, Internet governance, e-government, and accessibility for people with disabilities; Michael McLaughlin was a research analyst at the Information Technology and Innovation Foundation; McLaughlin researched and wrote about a variety of issues related to information technology and Internet policy, including digital platforms, e-government, and artificial intelligence.

;], “Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence,” <https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence/> Cut By: m.jam

Artificial intelligence (AI) has the potential to deliver significant social and economic benefits, including reducing accidental deaths and injuries, making new scientific discoveries, and increasing productivity.[1] However, an increasing number of activists, scholars, and pundits see AI as inherently risky, creating substantial negative impacts such as eliminating jobs, eroding personal liberties, and reducing human intelligence.[2] Some even see AI as dehumanizing, dystopian, and a threat to humanity.[3] As such, the world is dividing into two camps regarding AI: those who support the technology and those who oppose it. Unfortunately, the latter camp is increasingly dominating AI discussions, not just in the United States, but in many nations around the world. There should be no doubt that nations that tilt toward fear rather than optimism are more likely to put in place policies and practices that limit AI development and adoption, which will hurt their economic growth, social progress, and global competitiveness.

While some people advocate for an almost completely hands-off approach to regulating new technologies, those who recognize that there is a legitimate role for government take two distinct approaches toward action: the precautionary principle and the innovation principle.

The precautionary principle is the idea that if a technological innovation may carry a risk of harming the public or the environment, then those proposing the technology should bear the burden of proving it will not. If they cannot, governments should limit the use of the new technology until proven safe. Those who support the precautionary principle, which calls for government intervention even when there is no clear evidence of tangible and imminent threats of harm, adhere to the cliché it is “better to be safe than sorry.”4 For some technologies, such as nuclear power, the principle makes sense, because the risk of getting it wrong can be catastrophic. However, for most areas of innovation, the precautionary principle leads to more harm than good because it generates hypothetical worst-case scenarios that incorrectly suggest technological advancement presents severe and irreversible threats.5

In contrast, the innovation principle holds that because the overwhelming majority of technological innovations benefit society and pose modest and not irreversible risks, government’s role should be to pave the way for widespread innovation while building guardrails, where necessary, to limit harms. The innovation principle recognizes that market forces, tort law, existing laws and regulations, or light-touch targeted interventions can usually manage the risks new technologies pose. The principle does not, however, argue for a ban on regulation of new technologies. Instead, it advocates for a case-by-case approach, suggesting regulations only in those cases where there is a reasonable expectation that other forces will not suffice and where the potential harms are more than minor. Moreover, in cases where regulations are needed, it stresses the importance of designing regulatory interventions and structuring regulatory enforcement in ways that minimize the harm to innovation, while still achieving the regulatory goals. Finally, it focuses more on ensuring that penalties punish bad actors who cause harm than creating regulations that limit beneficial and benign uses.6 In other words, speculative concerns should not hold back concrete benefits.

Perhaps more so than any government, the U.S. federal government adhered to the innovation principle in its early regulation of the Internet, and this approach fostered a successful era of innovation and growth in the U.S. digital economy.7 In contrast, Europe’s more heavy-handed approach limited and continues to limit digital innovation. For example, many jurisdictions in Europe have restricted the use of ride-sharing apps like Uber because of concerns about the impact on the local taxi industry.8

#### A LAW ban hurts the DIB and Dod ability to make and use better weapons

[Jennie **Matuschak**](https://www.cnas.org/people/jennie-matuschak-1), [Ainikki **Riikonen**](https://www.cnas.org/people/ainikki-riikonen) and [Anna **Pederson**](https://www.cnas.org/people/anna-pederson) 06-02-2021 [Jennie Matuschak is a former research assistant for the Defense Program at the Center for a New American Security (CNAS); Ainikki Riikonen is a former Research Associate for the Technology and National Security Program at the Center for a New American Security (CNAS). Her research focuses on emerging technologies, particularly artificial intelligence and information systems in the context of international competition; Pederson comes from Washington, where she received her undergraduate degree in English literature from Seattle University] “Sharper: Defense Tech,” https://www.cnas.org/publications/commentary/sharper-defense-tech Cut By: m.jam

The prevalence of artificial intelligence (AI) systems, the growing centrality of information warfare, and threats to traditional command and control are redefining combat in the age of strategic competition. Amidst debates on the use of lethal autonomous weapon systems (LAWS) and pressure to modernize U.S. defense capabilities, what steps must the United States take to maintain its military advantage? CNAS experts are sharpening the conversation about the deployment of autonomous weapons and other defense technologies to enhance U.S. military readiness. Continue reading this edition of Sharper to explore their ideas and recommendations. Gaining an advantage in managing information and exercising command is a precondition of victory in warfare. This necessity has become even more acute as military organizations have integrated information technology into their forces and operations. The Pentagon’s belated response to these strategies appears overly technological and unrealistically fixated on regaining the kind of information dominance that the U.S. armed forces enjoyed in the aftermath of the Cold War. A new CNAS report by Chris Dougherty examines how the Department of Defense (DoD) can embrace, rather than fight against, the changes in the character of warfare and learn to thrive within its chaos in ways that China and Russia may be unable to match. In recent years, the machine learning revolution has sparked a wave of interest in AI applications across a range of industries. Nations are also mobilizing to use AI for national security and military purposes, write Paul Scharre and Michael Horowitz. It is therefore vital to assess how the militarization of AI could affect international stability and how to encourage militaries to adopt AI in a responsible manner. Doing so requires understanding the features of AI, the ways it could shape warfare, and the risks to international stability resulting from the militarization of artificial intelligence. America’s future leadership in the world and on the battlefield will be dependent on its ingenuity. Yet, while America remains the world’s leader in technology, its relative advantage wanes, argues Mikhail Grinberg in a CNAS policy brief. Future military operating environments will require technology from more diverse sources and business models that enable faster innovation cycles. Grinberg concludes that the superiority of next-generation weapon systems will be derived from progress in science, and the next National Defense Strategy needs to help the nation prioritize basic research as a source of competitive advantage. An international debate over lethal autonomous weapon systems (LAWS) has been under way for nearly a decade. A new CNAS report by author Robert O. Work offers seven new principles that concentrate on the responsible use of autonomous functionalities in armed conflict in ways that preserve human judgment and responsibility over the use of force, and help minimize the probability of loss of control of the system or unintended engagements. Michèle Flournoy and Gabrielle Chefitz argue in a CNAS policy brief that the United States is losing its military technological advantage vis-à-vis great-power competitors such as China, and reversing this trend must be DoD leadership’s top priority. Doing so will require focused and empowered leadership, increased investment in the development of new concepts and capabilities, new pathways and incentives for promising prototypes to bridge the “valley of death” into production, a willingness to make hard program and budget choices, the development of a more tech-savvy workforce, and greater partnership with Congress to pursue these goals together.

#### Wilbur Wright proves risk taking drives innovation

Adam Thierer 05-26-2022 [Research fellow at Mercatus Center at George Mason University; Covers digital technology policy issues; co-blog with @TechLiberation]

“The Proper Governance Default for AI,” https://medium.com/@AdamThierer/the-proper-governance-default-for-ai-d05db6970924 Cut By: m.jam

The precautionary principle holds that innovations are to be curtailed or potentially even disallowed until the creators of those new technologies can prove that they will not cause any theoretical harms. The classic formulation of the precautionary principle can be found in the “Wingspan Statement,” which was formulated at an academic conference that took place at the Wingspread Conference Center in Wisconsin in 1998. It read: “Where an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”[[2]](https://medium.com/@AdamThierer/the-proper-governance-default-for-ai-d05db6970924#_ftn2) There have been many reformulations of the precautionary principle over time but, as legal scholar Cass Sunstein has noted, “in all of them, the animating idea is that regulators should take steps to protect against potential harms, even if causal chains are unclear and even if we do not know that those harms will come to fruition.”[[3]](https://medium.com/@AdamThierer/the-proper-governance-default-for-ai-d05db6970924#_ftn3) Put simply, under almost all varieties of the precautionary principle, innovation is treated as “guilty until proven innocent.”[[4]](https://medium.com/@AdamThierer/the-proper-governance-default-for-ai-d05db6970924#_ftn4) We can also think of this as permissioned innovation.

The logic animating the precautionary principle reflects a well-intentioned desire to play it safe in the face of uncertainty. The problem lies in the way this instinct gets translated into law and regulation. Making the precautionary principle the public policy default for any given technology or sector has a strong bearing on how much innovation we can expect to flow from it. When trial-and-error experimentation is preemptively forbidden or discouraged by law, it can limit many of the positive outcomes that typically accompany efforts by people to be creative and entrepreneurial. This can, in turn, give rise to different risks for society in terms of forgone innovation, growth, and corresponding opportunities to improve human welfare in meaningful ways.

St. Thomas Aquinas once observed that if the sole goal of a captain were to preserve their ship, the captain would keep it in port forever. But that clearly is not the captain’s highest goal. Aquinas was making a simple but powerful point: There can be no reward without some effort and even some risk-taking. Ship captains brave the high seas because they are in search of a greater good, such as recognition, adventure, or income. Keeping ships in port forever would preserve their vessels, but at what cost?

Similarly, consider the wise words of Wilbur Wright, who pioneered human flight. Few people better understood the profound risks associated with entrepreneurial activities. After all, Wilbur and his brother were trying to figure out how to literally lift humans off the Earth. The dangers were real, but worth taking. “If you are looking for perfect safety,” Wright said, “you would do well to sit on a fence and watch the birds.” Humans would have never taken to the skies if the Wright brothers had not gotten off the fence and taken the risks they did. Risk-taking drives innovation and, over the long-haul, improves our well-being.[[5]](https://medium.com/@AdamThierer/the-proper-governance-default-for-ai-d05db6970924#_ftn5) Nothing ventured, nothing gained.

### 2NC---Raytheon Specific Link

#### Raytheon, a DIB company, is working on improving AI for military strength – the ban hurts their ability to develop AI

Raytheon Intelligence & Space 06-30-2021 [One of the four business segments of U.S. defense and aerospace conglomerate Raytheon Technologies. Headquartered in Arlington, Virginia, RIS has a total employment of 39,000 and 2019 sales of US$15 billion. Roy Azevedo is the segment's president.], “How AI can alter multi-domain warfare,” https://www.raytheonintelligenceandspace.com/news/2021/06/30/how-ai-can-alter-multi-domain-warfare Cut By: m.jam

Military commanders often have very little time to make decisions – sometimes just seconds. And with threats like hypersonic missiles accelerating the pace of modern warfare, that window of time is shrinking. Complicating things is the sheer volume of data flow. There are petabytes of intelligence information coming from sensors on land, at sea, in the air and in space, many using different formats. The solution, according to experts at Raytheon Intelligence & Space, a Raytheon Technologies business, is clear: Artificial intelligence – specifically, teaming military commanders with intelligent systems to cull through data in seconds. This will be key to bringing the vision for the U.S. Department of Defense’s Joint All Domain Command and Control network, often called JADC2, to reality. That network will link military capabilities around the world and in every domain. With artificial intelligence and machine learning, those systems can define, combine and provide the right information to the right people at the right time – giving them the best possible chance to make the best possible decision. “Manually processing all that data would require armies of analysts, but with AI/ML, we can task systems to cull through the data and produce higher level information useful to operators,” said Jim Wright, RI&S technical director for Intelligence, Surveillance and Reconnaissance Systems. Experts from Raytheon Intelligence & Space discussed the concept further during a [webinar on July 15, 2021](https://onlinexperiences.com/scripts/Server.nxp?LASCmd=AI:4%3bF:QS%2110100&ShowUUID=CAC36112-8AAC-4C45-930D-5F4D90271603) that is now available on-demand. Here’s a preview of what they discussed. 1. AI/ML makes sense of the complex There’s a confluence of factors that are driving the need for autonomy and automation in data analysis – a proliferation of information and a shortage of analysts to start. AI and ML can help by doing the legwork – searching, processing and fusing larger amounts of data across the domains – and helping the humans save their brainpower for decision-making. “A customer once told me that the military collects 22 football seasons worth of video every day,” Wright said. “There’s a colossal amount of information circling in today’s battlespace. We’re developing smart software, called Cognitive Aids to Sensor Processing, Exploitation and Response, to lighten the operator’s workload and use automation to help make decisions faster. The cognitive aids will do the groundwork and data analysis to provide recommended courses of action, leaving the operators to focus on making the best decision.” The Department of Defense is also mobilizing combatant commands to use AI/ML for the future battlefield in a new effort called the Artificial Intelligence and Data Acceleration Initiative. “Its goal is to rapidly advance data and AI-dependent concepts like Joint All-Domain Command Control,” Deputy Secretary of Defense Kathleen Hicks said during the department’s [AI Symposium](https://www.c4isrnet.com/artificial-intelligence/2021/06/22/pentagon-launches-artificial-intelligence-effort-to-prep-combatant-commands-for-jadc2/) on June 22. 2. AI/ML counters threats more quickly and intelligently Another factor is the speed of modern weapons. “Think about hypersonic glide vehicles and similar types of weapons,” Wright said. “From the time you see them to the time when you must counter them is very short, and there isn’t time for operators to search multi-sensor data to optimize targeting solutions. Instead, AI/ML can automatically search across many sensor sources to accurately detect and classify threats, and then quickly evaluate multiple engagement alternatives to find the optimum weapons target pairing.” AI and ML could even give combatant commanders insights into adversaries’ decision-making processes – information they can use to anticipate enemy actions and proactively outmaneuver them. “At that point, the adversary won’t be able to respond in time because our commander is already way ahead of them,” said Chris Worley, director for Civil and Digital Solutions at RI&S.

### 2NC---Lockheed Specific Link

#### Lockheed Martin, a DIB company, is working on autonomous systems - the ban hurts their ability to develop AI

Facing Finance 12-05-2014 [Promoting a more responsible and sustainable financial system. For a responsible and sustainable use of money]

“Lockheed Martin: Production of Autonomous Weapons,” https://www.facing-finance.org/en/database/cases/lockheed-martin-production-of-autonomous-weapons/ Cut By: m.jam

Lockheed Martin offers multiple unmanned weapons systems for air, land and sea, including a recently revealed ultra high speed UAV (unmanned aerial vehicle) project, drone SR-72. According to Lockheed Martin this would be both a spy and a strike aircraft, but will not be ready to fly until 2030 Lockheed Martin has developed a fully autonomous surveillance and target-acquisition system combining a ground robotic vehicle and an unmanned helicopter (the SMSS acting as the ground segment and the K-MAX unmanned air vehicle)[2](https://www.facing-finance.org/en/database/cases/lockheed-martin-production-of-autonomous-weapons/#footnote_1_20223). The company is also a producer of autonomous weapons which are under strong criticism to be indiscriminate and violate International Humanitarian Law. Armed with a proven penetrator and blast-fragmentation warhead, LRASM (Long Range Anti-Ship Missile) cruises autonomously, day or night, in all weather conditions[3](https://www.facing-finance.org/en/database/cases/lockheed-martin-production-of-autonomous-weapons/#footnote_2_20223).'

### 2NC---DIB IL

#### U.S. DIB K2 Military Competitivness

**Lord and Nader 21.** (Ellen Lord, *Senior Fellow, Johns Hopkins Applied Physics Laboratory.* Jeffrey Nadaner, *Executive Director, Commanding Heights of Global Transportation Initiative*. “A 21st Century Defense Industrial Strategy for America.” Hudson Institute, June 14, 2021. <https://www.hudson.org/research/17011-a-21st-century-defense-industrial-strategy-for-america>. shARK.)

The American military is still the most powerful in the world. Its leading defense industry companies are still global leaders in weapons innovation and production. Likewise, the Department of Defense is still the colossus of the federal system, i.e., the single biggest buyer of goods in the US government. But unless the industrial and manufacturing base that develops and builds those goods modernizes and adjusts to the world’s new geopolitical and economic realities, America will face a growing and likely permanent national security deficit. America’s defense industrial base was once the wonder of the free world, constituting a so-called “military-industrial complex” that, regardless of criticism, was the model for, and envy of, every other country—and the mainstay of peace and freedom for two generations after World War II. Today, however, that base faces problems that necessitate continued and accelerated national focus over the coming decade, **and that cannot be solved by assuming that advanced technologies like autonomous systems, artificial intelligence (AI), 5G, and quantum will wave those challenges away, and magically preserve American leadership.** On the contrary, those advanced technologies themselves rely on a manufacturing complex whose capability and capacity will have to be trusted and secure to protect the Pentagon’s most vital supply chains. These include microelectronics, space, cyber, nuclear, and hypersonics, as well as the more conventional technologies that make up our legacy defense equipment. What will be required is a defense industrial strategy based on a four-part program to:

1. Reshore our defense industrial base and supply chains to the United States and to allies, starting with microelectronics, and restore our shipbuilding base.
2. Build a modern manufacturing and engineering workforce and research and development (R&D) base.
3. Continue to modernize the defense acquisition process to fit 21st century realities.
4. Find new ways to partner private sector innovation with public sector resources and demand.

All these steps will be necessary to create a robust, resilient, secure, and innovative industrial base. **The defense industrial base is a key to preserving and extending US competitive military dominance in the coming century and, with it, deterrence that will keep Americans safe and keep the peace.** Realizing a defense industrial strategy will require a substantial commitment of capital investment and resources, as well as continuing and extending the reforms to the Defense Department’s industrial base that have been underway in the past several years.

### 2NC---DIB Impacts

#### Primacy solves great power conflict, growth and prolif

Hal Brands and Charles Edel, 2019, Hal Brands is the Henry Kissinger Distinguished Professor of Global Affairs in the Johns Hopkins School of Advanced International Studies and a senior fellow at the Center for Strategic and Budgetary Assessments. Charles Edel is a senior fellow at the United States Studies Centre at the University of Sydney and previously served on the U.S. Secretary of State's policy planning staff. “The Lessons of Tragedy Statecraft and World Order” Ch. 5 Yale University Press. Accessed 7-14-2019 [MoStateLibraries]/mnw

As William Wohlforth has noted, American primacy and activism acted as a powerful deterrent to great-power conflict by creating enormous disincentives for Russia, China, or other actors to incur the “focused enmity” of the United States. 11 The persistence and even extension of the U.S. security blanket smothered potential instability in unsettled regions such as Eastern Europe, while removing any possibility of German or Japanese revanchism—a prospect much feared in the early 1990s—by keeping those countries tightly lashed to Washington. American intervention helped extinguish bloody conflicts in the Balkans before they could spread to neighboring countries; U.S. diplomatic and military pressure kept aggressive tyrannies such as Iraq, Iran, and North Korea bottled up and helped slow the spread of nuclear weapons. U.S. support helped democratic forces triumph in countries from Haiti to Poland, as the number of democracies rose from 76 in 1990 to 120 in 2000; America crucially assisted the advance of globalization and the broad prosperity that came with it by promoting pro-market policies and providing the necessary climate of reassurance and stability. 12

#### American primacy de-escalates South China Sea tensions

Nicholas Kristof, 15, 5-29-2015, (American journalist and political commentator. A winner of two Pulitzer Prizes) "EDITORIAL: Pushback in the South China Sea", https://www.nytimes.com/2015/05/30/opinion/pushback-in-the-south-china-sea.html, AVD

The United States has good reason to push back more forcefully against China’s grab for power in the South China Sea, as Defense Secretary Ashton Carter did on a trip to Asia this week. Beijing has repeatedly ignored earlier warnings to moderate the aggressive behavior that is unsettling its regional neighbors and further undermining its relations with the United States. On Friday, American officials disclosed that China had installed two [mobile artillery vehicles](http://www.nytimes.com/2015/05/30/world/asia/chinese-artillery-spotted-on-spratly-island.html?hp&action=click&pgtype=Homepage&module=first-column-region&region=top-news&WT.nav=top-news) on an artificial island it is building in the sea, which is rich in natural resources like oil and gas and where China clearly hopes to establish some form of hegemony. The weapons are not considered a threat to American naval forces. Still, they reinforce fears that China intends to militarize the Spratly Islands, a collection of reefs and rocks also claimed by the Philippines, Vietnam, Malaysia and Taiwan, and use them to control the waterway’s shipping lanes and dominate its smaller neighbors. China’s ambitions have become increasingly clear since 2012 when it publicly asserted a claim to [80 percent](http://www.nytimes.com/2014/04/03/opinion/risky-games-in-the-south-china-sea.html) of the South China Sea. In recent months, [photographic evidence from commercial satellites and American spy planes has left little doubt that](http://www.nytimes.com/2015/04/12/opinion/sunday/chinese-mischief-at-mischief-reef.html) China is moving with alarming speed to turn the Spratlys into more substantial land masses, complete with runways and harbors. Some American officials now believe China regards its claims in the South China Sea as nonnegotiable. If so, that’s terrible news for the region but also ultimately for China, which claims it prizes stability but will find it impossible to realize its economic goals if Asia is in constant tension. China’s bullying on the South China Sea has already caused many Asian countries to forge closer defense ties with the United States. Now, the Obama administration has decided to more firmly underscore America’s intention to remain a Pacific power and to ensure that the region and its waters remain accessible to all nations. That is a role the United States has played constructively for decades, promoting a stability that has allowed Japan, South Korea and other countries, including China, to develop. “There should be no mistake: the United States will fly, sail and operate wherever international law allows, as forces do around the world,” Mr. Carter said in his speech. He also called for “an immediate and lasting halt to land reclamation by all claimants.” Although the administration would obviously prefer a peaceful resolution of all South China Sea disputes, it cannot allow China’s claims to go unchallenged. It sent a surveillance plane close to one of China’s artificial islands, is considering air and sea patrols that could go closer to disputed reefs and shoals, and is expanding military exercises with regional partners. President Obama and President Xi Jinping of China plan to meet later this year. In the meantime, American officials and their Chinese counterparts must avoid any miscalculation that could lead to a direct confrontation.

**Conflict in the South China Sea goes nuclear**

Dr Subhash Kapila, 15, graduate of the Royal British Army Staff College, Camberley, currently Consultant International Relations & Strategic Affairs with South Asia Analysis Group, June 16 2015, "South China Sea Headed towards US-China Military Showdown", South Asia Analysis Group, [www.southasiaanalysis.org/node/1799](http://www.southasiaanalysis.org/node/1799)

\*ADIZ = Air Defense Identification Zone

South China Sea seems inevitably headed towards witnessing a military showdown with a revisionist and strategically arrogant China rigidly insistent on altering the status quo in the South China Sea in defiance of United States advisories to halt construction of artificial islands to enforce its sovereignty claims in disputed waters. China seems to be politically and strategically over-reaching itself buoyed by its new-found military strength and misreading United States military intentions in terms of its resolve to enforce its national security interests in the South China Sea region. The United States itself is to blame for leading China down this path of challenging the unipolar superpower by being permissive on China’s military adventurism in the South China Sea at the expense of its relatively militarily weaker neighbours. South China Sea has been witnessing a ‘Gathering Storm’ as reflected in a recent SAAG Paper of mine and the imperatives of the United States to pre-empt China’s destabilising moves. Recent United States official statements and military moves indicate that the United States has finally woken up to the reality that China by its military brinkmanship in the South China Sea was imposing its dubious claims on Vietnam and the Philippines but in effect was all out to challenge United States supremacy in the Western Pacific as a prelude to pushing out the United States out of the Pacific. United States rhetoric on the ‘freedom of the seas’ through the ‘global commons’ implying the freedom of navigation through the South China Sea made no sense to an arrogant China as the United States had made no definitive declarations on its national security interests in the South China Sea. The United States has finally woken up to the stark reality that China’s construction of seven artificial islands with US surveillance photographs showing military hardware being emplaced is an adverse game-changer for the United States. Analyses of these military developments betray China’s military intentions and its two-pronged strategy in the South China Sea to establish Chinese full-spectrum dominance of the South China Sea. The first prong is to extend China’s sovereign spread over the South China Sea by claiming the 12 mile- territorial limit around each of these newly constructed islands and an extended EEZ. This is not tenable under international laws as such territorial limits only apply to natural landforms and not artificial man-made islands. The second prong of China’s strategy is that the Chinese artificially constructed islands would serve as mini-bases for emplacing air defence missile, anti-ship missiles, and surveillance radars sand naval attack craft with the prime aim of denying the United States access to Western Pacific and deter USA from any military intervention. Such platforms could enable China to prevent USA from sending its naval ships and aircraft to South Chinese islands under Chinese occupation. This also has to be read as a precursor to China declaring a Chinese ADIZ over the South China Sea. Surely this is a strategic challenge to the United States and a blatant attempt to change the status quo in the South China Sea with the end aim of converting the South China Sea into an Inland Sea of China. The United States in the last few months has commenced issuing statements challenging China’s sovereignty over the South China Sea. The US President is reported to have declared that the United States does not accept China’s logic of sovereignty over the entire South China Sea and cautioned China not to indulge in an endless creation of artificial islands in disputed waters. US Assistant Secretary of State in testimony before the Senate Foreign Relations Committee stated “US pressure is needed in South China Sea to ensure everyone with an interest in the area follows international law. No matter how much sand you pile on reefs, you can’t manufacture sovereignty.” More significantly, Russel told the Committee that US must use in his words “all instruments of power” to push back what he called “problematic behaviour” The Pentagon is planning to send US Navy ships and US Air Force aircraft over the disputed areas both for surveillance and more importantly enforcing the right of passage over international waters and air space. Now shifting to China’s responses carried in the Chinese official organ-The Global Times, to the above, undoubtedly they reflect belligerence and provocative stances against the United States. These are quoted verbatim below: “For China, the most important bottom line is to make the construction on the reefs continue until they are completed.” “If the United States bottom line is that China has to shut down its construction on the reefs, then a US-China war is inevitable. The intensity of the conflict will be higher than what people usually think of as friction.” Concluding all that can be said is that China is spoiling for a military conflict with the United States over the South China Sea. The United States has to take a call sooner or later that a US-China war is inevitable and that China in its present belligerent mood may resort to an “Electronic Pearl Harbour” attack combined with a pre-emptive missile attacks, maybe nuclear possibly. Far- fetched, maybe, but yet within the realms of possibility when China’s propensity to resort to armed conflict when challenged.

### A2: No LAWS now

#### US companies are developing LAWs now

Frank **Wolfe** 12-02-**2019** [A native of the Washington, D.C. area, Frank graduated Williams College with a degree in history and Russian studies in 1989. He also received a master’s degree in journalism from Columbia University and a master’s in international public policy from Johns Hopkins University School of Advanced International Studies. He has worked as a journalist at The Washington Times, Forbes Magazine, The Arkansas Democrat-Gazette, Defense Daily and LRP Publications. He has also worked as a senior analyst on U.S. Air Force and U.S. Army programs for Science Applications International Corp. and as a consultant on anti-corruption for The World Bank Institute]

“Companies Developing Lethal Autonomous Weapons, As Groups Seek Ban, Report Says,” https://www.aviationtoday.com/2019/12/02/companies-developing-lethal-autonomous-weapons-as-groups-seek-ban-report-says/ Cut By: m.jam

Dozens of defense companies are developing lethal autonomous weapons (LAWS), as humanitarian groups seek to build international support for a treaty to ban them, according to a recent report. LAWS, so-called "killer robots," would rely on artificial intelligence (AI) to remove the human from targeting decisions, but how close such systems are to mature development and deployment readiness is a matter of debate in technology circles. "As part of an imminent arms race to develop increasingly autonomous weapons, states rely on and involve arms producing companies in those efforts," according to [Slippery Slope: The Arms Industry and Increasingly Autonomous Weapons](https://www.paxforpeace.nl/publications/all-publications/slippery-slope) by the Dutch non-governmental organization, PAX for Peace. "While digital technology, especially artificial intelligence, can be beneficial in many ways, countless AI and robotics experts have warned that the technology must not be used to develop lethal autonomous weapons. The research however shows the clear proliferation of increasingly autonomous weapon systems. Not only is there a growing number of companies in a growing number of countries developing such weapons, these technologies are also applied to an ever-expanding range of military systems, in the air, on the ground and at sea." The United Nations Convention on Conventional Weapons (CCW) has been discussing LAWS' concerns and is to start devising a "normative and operational framework" for such weapons at meetings in Geneva on June 22-26 and August 10-14. But humanitarian groups are frustrated that CCW has not progressed further in its work on the issue and that CCW has not brought up a legally binding document to stop or significantly restrict LAWS. In a message to CCW's Group of Government Experts convened for a meeting on emerging LAWS technologies last March, U.N. Secretary General António Guterres wrote that "autonomous machines with the power and discretion to select targets and take lives without human involvement are politically unacceptable, morally repugnant and should be prohibited by international law." "This reflects what I see as the prevailing sentiment across the world," Guterres wrote. "I know of no state or armed force in favor of fully autonomous weapon systems empowered to take human life." Last February, Russia's ZALA Aero Group, the unmanned aircraft systems (UAS) division of Kalashnikov, unveiled a "kamikaze" drone -- the KUB-BLA -- at the International Defense Exhibition and Conference (IDEX) in Abu Dhabi. The small UAS is designed to have a maximum speed of about 80 miles per hour, an endurance of 30 minutes, and an explosive payload of 7 pounds against "remote ground targets." Loitering munitions can have a dwell time up to six hours and are equipped with sensors to allow the drones to detect and attack targets independently. Early 1980s-era examples include Israel Aircraft Industries' Harpy suppression of enemy air defenses (SEAD) drone and the U.S. Air Force AGM-136 "Tacit Rainbow" SEAD system by Northrop Grumman -- a $4 billion development program canceled in 1991. "Especially significant are the developments related to loitering munitions, which are able to operate for longer amounts of time and over larger areas in order to select and attack targets," according to last month's PAX for Peace report. "Major efforts related to swarm technologies multiply the potential of such weapons. These developments raise serious questions of how human control is guaranteed over these weapon systems." The Turkish state-owned firm STM is "improving the capabilities of its KARGU loitering munitions through using AI, including facial recognition," the report said. "According to the company, the KARGU can 'autonomously fire-and-forget through the entry of target coordinates.' It has been suggested that these systems will be deployed on the border with Syria." A September article in The New Scientist magazine reported that KARGU positions Turkey "to become the first nation to use drones able to find, track and kill people without human intervention." The Turkish newspaper, Hürriyet, has said that some 30 STM "kamikaze" drones will be deployed early next year to the Turkish-Syrian border region. The PAX for Peace report on LAWS listed 30 "high concern companies," as the latter "work on increasingly autonomous weapon systems and do not appear to have a policy in place [to ensure meaningful human control over such weapons] and did not respond in a meaningful way to our survey." Such companies include Lockheed Martin, Boeing, and Raytheon in the United States; China's AVIC and CASC; Russia's Rostec; Israel's IAI, Elbit Systems, and Rafael; and Turkey's STM, according to the report.

### A2: LAWS not Key

#### LAW’s are the new frontier of innovation – also check every enemies aggression

Vincent Boulanin and Maaike Verbruggen 2017 “MAPPING THE DEVELOPMENT OF AUTONOMY IN WEAPON SYSTEMS” November 2017 Stockholm International peace research institute https://www.sipri.org/sites/default/files/2017-11/siprireport\_mapping\_the\_development\_of\_autonomy\_in\_weapon\_systems\_1117\_1.pdf

In 2015 the USA elevated the issue of autonomy to the highest strategic level with the publication of its new ‘Defense Innovation Initiative’, which is also referred to as the ‘Third Offset Strategy’.11 Like the first two offset strategies that were introduced during the cold war, the Third Offset Strategy is based on the idea that the USA should seek to leverage emerging and disruptive technologies in innovative ways to offset the advantages of potential adversaries and maintain its strategic superiority.12 Each of the previous offset strategies had a specific ‘technological sauce’ as Robert Work, US Deputy Secretary of Defense, puts it.13 For the First Offset Strategy, it was the miniaturization of nuclear components, which enabled the adoption of tactical nuclear weapons for conventional deterrence. For the Second Offset Strategy, it was the development of digital microprocessors, information technologies, new sensors and stealth, which enabled the USA to develop precision-guided weapons and achieve dominance in conventional warfare. For the Third Offset Strategy, a key component is going to be AI (particularly machine learning) and autonomy.14 The reasons for this are manifold (and will be presented in the next subsection), but the main rationale is that AI and autonomy could leverage many operational benefits that could allow the US military to improve the strength and cost-effectiveness of its forces. In this way, it would continue to outmatch Russia, China, Iran or North Korea, even if those countries were to catch up with the USA in the development of high-end weapon technologies, such as precision-guided munitions, robotic technology, cyber and electronic warfare capabilities and A2/AD denial technologies.1

### A2: No LAWS Race

#### China is matching US spending on AI – at worst proves that the aff can’t spillover

Jon **Harper** 1/6/**2022** <https://www.nationaldefensemagazine.org/articles/2022/1/6/china-matching-pentagon-spending-on-ai> (Jon Harper is

The U.S. military and China’s [PLA] People’s Liberation Army are both pursuing[AI] artificial intelligence capabilities which could give them a leg up in future conflicts. PLA investment in AI is now on par with the Pentagon’s, experts say. The United States [US] views China as its top military and economic competitor. “Supported by a burgeoning AI defense industry, the Chinese military has made extraordinary progress in procuring AI systems for combat and support functions,” according to a recent report from the Georgetown University Center for Security and Emerging Technology. The People’s Liberation Army is most focused on procuring AI for intelligence analysis, predictive maintenance, information warfare, and navigation and target recognition in autonomous vehicles, said the study, “Harnessed Lightning: How the Chinese Military is Adopting Artificial Intelligence,” by analysts Ryan Fedasiuk, Jennifer Melot and Ben Murphy. Additionally, laboratories affiliated with the Chinese military are actively pursuing AI-based target recognition and fire-control research, which may be used in lethal autonomous weapon systems, according to the authors. “If public contracts reflect how the PLA prioritizes different emerging technologies, then it is likely the PLA spends more than $1.6 billion each year on AI-enabled systems,” the study said. “However, because it is still an emerging technology, the PLA’s true spending on AI likely exceeds this number, as more funding is captured in research and development rather than off-the-shelf technology procurement. Moreover, the most resource-intensive AI projects are likely classified,” it added. The analysts estimate that annual Chinese military spending on AI is in “the low billions” of U.S. dollars, a level of funding that is “on par” with Pentagon’s investments. “Various analyses of DoD budgets for procurement and research indicate that it spent between $800 million and $1.3 billion on AI in 2020, with an additional $1.7 billion to $3.5 billion for unmanned and autonomous systems,” the report said. For fiscal year 2022, the Defense Department requested $874 million for artificial intelligence projects, reflecting the “rapidly growing importance of AI in every facet of the department’s operations,” according to budget documents. That money would help fund more than 600 AI-related efforts. “It remains to be seen how exactly AI might alter the balance of military power in the Indo-Pacific,” the CSET report said. Additional Pentagon research into “counter-autonomy” capabilities, as well as U.S. and allied efforts to regulate access to semiconductor devices, may hinder the utility and availability of artificial intelligence systems for the PLA, the authors noted.

### A2: LAWS not k2 econ

#### The LAW market is a massive global R&D program that is at the frontier of the market and research

Himanshu **Joshi** , Sonia **Mutreja** August **2021** “Autonomous Weapons Market by Product (Missiles, Munitions, Guided Rockets, Guided Projectiles, Hypersonic Weapons, and Others), Platform (Land, Airborne, and Naval), and Type (Semi-Autonomous and Autonomous): Global Opportunity Analysis and Industry Forecast, 2021–2030” https://www.alliedmarketresearch.com/autonomous-weapons-market-A13132#:~:text=The%20global%20autonomous%20weapons%20market,registering%20a%20CAGR%20of%2010.4%25.

The global autonomous weapons market was valued at $11,565.2 million in 2020, and is projected to reach $30,168.1 million in 2030, registering a CAGR [Compounded annual growth rate] of 10.4%.The rapid spread of COVID-19 had a significant impact on the global autonomous weapons market in 2020, owing to the implementation of strict lockdown measures across the world. COVID-19 pandemic led to several challenges for the autonomous weapons industry such as disruption in the supply chain of essential raw materials, logistics challenges, reduction in defense spending across various countries, and others. On the other hand, the defense systems manufacturers and service providers had to reduce expansion and R&D investments to withstand the decline in revenue and operating performance of the defense industry. The delay in purchase orders and slow production rate were some of the challenges observed in the autonomous weapons market throughout the year, and are expected to continue for a few years. Without the need for human involvement, autonomous weapons choose and engage targets. They usually include armed quadcopters that can hunt for and eliminate persons who fulfil specific pre-defined criteria, however, they do not include remotely piloted drones or cruise missiles where humans are in charge of all targeting decisions. Artificial Intelligence (AI) technology has advanced to the point that deployment of such systems may be accomplished in a few years, and the stakes are quite high. After gunpowder and nuclear weapons, autonomous weapons have been dubbed as the third revolution in warfare. Rise in technological advancements in autonomy of weapons are being observed throughout the world. Autonomy is being added to different parts of existing weapons systems, from target planning to mission execution. Global military spending on autonomous weapons and AI is anticipated to grow significantly over the years. This factor is expected to account for rapid development of the autonomous weapons market during the forecast period. The market segmentation is based on product, platform, type, and region. The product segment is further divided into missiles, munitions, guided rockets, guided projectiles, hypersonic weapon, and others. By platform, the market is segmented into land, airborne, and naval. By type, it is segmented into semi-autonomous and autonomous. Region wise, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA. Key players operating in the global autonomous weapons market include BAE Systems plc, Israel Aerospace Industries Ltd., Kongsberg Gruppen ASA, Lockheed Martin Corporation, MBDA, Northrop Grumman Corporation, Rafael Advanced Defense Systems Ltd., Raytheon Technologies Corporation, Rheinmetall AG, and Thales Group. Increase in number of autonomous defense vehicles, drones, and robots Autonomous defense systems including weapons, smart vehicles, armed drones, and robots play a vital role in the defense operations. These are fully autonomous tools that employ telecommunication technology such as 5G network, at the disposal of defense agencies to provide services in real time at dangerous, inconvenient, and impossible areas of operation such as remote surveillance for enemy infantry. Various countries across the globe have focused on development of autonomous systems to be utilized in public and national safety applications. In recent times, multiple governments from developed and emerging nations such as the U.S., Russia, China, and India have invested billions of dollars for autonomous defense projects. For instance, Europe launched a defense research and development program of $9.32 billion in January 2021 toward financing defense R&D projects. Adoption of autonomous technologies helps in reduction of operational costs and increases efficiency significantly. For instance, during the operation of a naval destroyer for a single day $700,000 are spent by the U.S. navy whereas in the case of an autonomous ship's operation costs would come down to $15,000 to $20,000 per day. Moreover, for increased efficiency; several nations around the world are deploying the use of 5G in the operation of autonomous defense vehicles, robots, and drones. For instance, U.S. ignite launched a technology pilot program in January 2021 for 5G Living Lab at Marine Corps Air Station (MCAS) Miramar situated in San Diego. Moreover, several pilot projects aimed at utilization of 5G in autonomous defense vehicles, drones, and robots are underway globally. Rise in adoption of autonomous technology to improve defense capabilities of nation globally is anticipated to propel growth of the global autonomous weapons market during the forecast period. Increase in investments to develop autonomous weapons Although autonomous weapons technology is still in its early stages, several militaries and private companies are developing and testing weapons that could one day be deployed to fight on their own. For instance, Russia is performing tests on autonomous tanks on Syrian battlefields, the U.S. has successfully tested swarms of drones, the UK wants to induct drone squadrons in combat roles as soon as possible, and China is developing unmanned submarines capable of carrying out kamikaze attacks (Japanese suicide bombing tactic) on enemy vessels. Armed forces across the world have been working on autonomous weapons for several decades now. Presently, at least 30 countries use them, mainly to defend airbases, ground vehicles, or ships against missile attacks. Various countries are competing with each other intensely to manufacture or procure leading-edge autonomous weapons. For instance, China and Russia aim to pursue development of autonomous weapons and are heavily investing in R&D activities. In addition, UK’s new defense strategy is aimed at propelling defense capabilities leveraging AI, as does Israel. According to the Brookings Institution (a Washington, DC-based non-profit public policy organization), the Chinese military and defense sector have been investing heavily in robots, swarming, and other artificial intelligence (AI) and machine learning applications (ML). So far, advancements in autonomous weapons have drawn on existing research and development expertise. Moreover, Russia is developing an array of autonomous weapon platforms utilizing artificial intelligence as part of an ambitious push supported by high-tech cooperation with China. Such developments provide rise in demand for autonomous weapons, which is anticipated to propel growth of the global autonomous weapons market during the forecast period. Serious issues with fully autonomous weapons Fully autonomous weapons are those that can choose and fire on targets without the need for human interaction. Fully autonomous weapons are capable of assessing tactical context on a battlefield and deciding on appropriate assault based on processed data. Several countries fund and assist operations aimed at developing and researching completely autonomous weaponry. China, Germany, India, Israel, Republic of Korea, Russia, and the UK. UK, U.S., Israel, and South Korea have already deployed robotic systems with varying degrees of autonomy and lethality. Although abovementioned nations project great prospects for fully autonomous weapons, experts across the globe have pointed out issues related to accountability, protection of lives of citizens, and falling of such technology with non-authorized persons. No single human may be held responsible for his or her acts in an armed battle if the weapon system is autonomous. Instead, accountability is shared among a larger, possibly unidentifiable group of people, which could include robot's programmer or maker. Removal of humans from the selection and execution of attacks on targets, as the UN Special Rapporteur on extrajudicial, summary, or arbitrary executions noted in their report to the Human Rights Council, represents a critical moment in the new technology that is considered a revolution in modern warfare. It was advised to nations to carefully consider consequences of such weapon systems, adding that such technology raises danger of states engaged in armed conflicts, owing to a lower risk of military casualties. Fully autonomous weapons could lower conflict threshold, particularly in cases where other side lacks comparable systems to deploy in response. These factors, as experts have pointed out, could lead to serious conflicts and uncalled war like situations caused due to unsupervised attacks made by fully autonomous weapons, and hinder growth of the global autonomous weapons market during the forecast timeframe. Rise in use of autonomous weapons globally Use of weapons that make their own judgments or autonomous weapons, have increased in recent years as a result of technological improvements and rise in complicated conflicts such as the Syrian and Libyan civil wars. Libya is not the only place where destructive autonomous weapons have been utilized in recent years. For instance, autonomous quadcopters were employed by Turkey to monitor its border with Syria. In September 2020, when Azerbaijan attacked Armenian-occupied territory, it used loitering munitions (drones that can autonomously fly over an area and divebomb enemy radar signals) made by both Turkish and Israeli companies. These weapons appear to be miniature versions of remote-controlled drones that the U.S. military has deployed extensively in battles with Iraq, Afghanistan, and other countries. Loitering munitions, on the other hand have a built-in explosive and destroy themselves on impact with their target, rather than releasing missiles via remote control. These factors prove lethality and efficiency of autonomous weapons and rise in use of autonomous weapons is expected to propel growth of the global autonomous weapons market during the forecast period.

### A2: DOD not buying LAWS

#### The DOD is rewriting internal policy to allow for broader acquisition of LAWS

Gregory C. Allen, 22, (Gregory C. Allen, Gregory C. Allen is the director of the Artificial Intelligence (AI) Governance Project and a senior fellow in the Strategic Technologies Program at the Center for Strategic and International Studies in Washington, D.C., 6-6-2022, CISA, DOD Is Updating Its Decade-Old Autonomous Weapons Policy, but Confusion Remains Widespread, https://www.csis.org/analysis/dod-updating-its-decade-old-autonomous-weapons-policy-confusion-remains-widespread, 7-3-2022) SCade

The DOD recently announced that it is planning to update DODD 3000.09 this year. Michael Horowitz, director of the DOD’s Emerging Capabilities Policy Office and the Pentagon official with responsibility for shepherding the policy, praised DODD 3000.09 in a recent interview, stating that “the fundamental approach in the directive remains sound, that the directive laid out a very responsible approach to the incorporation of autonomy and weapons systems.” While not making any firm predictions, Horowitz suggested that major revisions to DODD 3000.09 were unlikely. In general, this is good news. The DOD’s existing policy recognizes that some categories of autonomous weapons, such as cyber weapons and missile defense systems, are already in widespread and broadly accepted use by dozens of militaries worldwide. It also allows for the possibility that future technological progress and changes in the global security landscape, such as Russia’s potential deployment of artificial intelligence (AI)-enabled lethal autonomous weapons in Ukraine, might make new types of autonomous weapons desirable. This requires proposals for such weapons to clear a high procedural and technical bar. In addition to demonstrating compliance with U.S. obligations under domestic and international law, DOD system safety standards, and DOD AI-ethics principles, proposed autonomous weapons systems must clear an additional senior review process where the chairman of the Joint Chiefs of Staff, under secretary of defense for policy; and the under secretary of defense for acquisition, technology, and logistics certify that the proposed system meets 11 additional requirements, each of which require presenting considerable evidence.

# AFF ANSWERS

### 2AC---DIB UQ

#### The Ukraine confilct has exposed weakness in the DIB and Bidens budget doesn’t leave room for growth in the industry

**Clark**, Maiya. “The War in Ukraine Continues; Can the U.S. Defense-Industrial Base Keep Up?” *The Heritage Foundation*, **2019**, www.heritage.org/defense/commentary/the-war-ukraine-continues-can-the-us-defense-industrial-base-keep.

To some degree, the Russia-Ukraine conflict has served as a stress test for the West’s defense industrial base. From that has come a growing recognition that, for too long, America has underestimated the amount of munitions and platforms required in modern warfare. Due to the complexity and time required to manufacture today’s precision weapons, we must start thinking now, before a war breaks out, about whether America has enough weaponry to sustain a conflict. Last month President Biden released a defense budget request that does not even keep up with the rate of inflation, much less provide for any growth to meet our own needs. It’s a recipe for weakness at a time when the free world desperately needs strength.

#### The DIB got a failing grade in industry health -- The industry is down bad

Stephen Losey 02-11-2022 [Air warfare reporter at Defense News; previously reported for Military.com, covering the Pentagon, special operations and air warfare; Before that, covered U.S. Air Force leadership, personnel and operations for Air Force Times], “COVID drags defense industrial base down to failing grade,” https://www.defensenews.com/industry/2022/02/11/covid-drags-defense-industrial-base-down-to-failing-grade/

WASHINGTON — The National Defense Industrial Association gave the defense industrial base an overall failing grade for the first time ever, as the [ongoing COVID pandemic](https://www.defensenews.com/industry/2022/01/28/as-covid-grinds-on-defense-sector-braces-for-inflation-hit/) continues to upend the sector. In its third annual Vital Signs report released Feb. 2, NDIA gave the industrial base a health and readiness score of 69 out of 100, which it deems an unsatisfactory and failing grade and “cause for real concern.” NDIA, which worked on the report with decision science company Govini, scores categories on a 100-point scale, and scores below 70 are considered failing. The association based most of its study on data sources from 2020, the first year of the pandemic and before vaccinations began, so some of these results are lagging indicators. NDIA said the two of the eight key categories it uses to measure the health of the defense industry — the [supply chain](https://www.defensenews.com/air/2021/11/23/no-company-is-immune-supply-chain-woes-weigh-on-defense-firms/) and companies’ production capacity and ability to surge if necessary — have deteriorated significantly, “almost certainly” due to the pandemic’s effects. Three other categories — industrial security, innovation and production inputs — also received failing scores in 2021, though production inputs and industrial security saw slight improvements over the previous two years. And with the pandemic continuing, the association added, it is crucial for the nation to figure out how to sort out these problems. However, NDIA said it opted not to offer policy recommendations, support specific legislative or regulatory changes, or call for investments in the report.

#### Americans Believe the U.S. is Falling Behind in Innovation

Gholz & Sapolsky 21 (Eugene Gholz & Harvey M. Sapolsky (2021) The defense innovation machine: Why the U.S. will remain on the cutting edge, Journal of Strategic Studies, 44:6, 854-872, DOI: [10.1080/01402390.2021.1917392](https://doi.org/10.1080/01402390.2021.1917392). shARK)

The United States is the most powerful nation in the world.[1](https://www.tandfonline.com/doi/full/10.1080/01402390.2021.1917392) It has the most powerful military, the biggest economy, and the most dominating culture. **It is the world’s leader in science, engineering, and medicine.** Its universities are the most admired. Its corporations are the richest and most successful. People eat Big Macs, drink Coca Cola, fly on Boeings, use their iPhones, and watch Hollywood movies around the globe. Everyone knows the name of the American president, what the CIA does, and who you should call if there is trouble on your border. The United States is also a very secure country. It is surrounded by two big oceans and two unthreatening neighbors. Its surveillance systems scour the globe looking for dangers. It has nuclear weapons, a Navy and Coast Guard on constant patrol, an Air Force on high alert and with a global reach, and an Army and Marine Corps second to none in capability and recent combat experience. **But many Americans believe that this is all slipping away, that America is becoming vulnerable and losing its power and dominance**. They cite internal and external sources of the vulnerability. American power, they claim, is being frittered away by a dysfunctional Congress, an incompetent president, and a bloated, slow moving, gold-plating acquisition bureaucracy that cannot keep up. Indecision and gridlock have seemingly become the American Way of government. Meanwhile, some **fear that agile rival nations, specifically including China, can tap fast moving commercial technology to build modern weapons that will defeat the United States.**[**2**](https://www.tandfonline.com/doi/full/10.1080/01402390.2021.1917392) Here we examine these concerns that the American military advantage in the Post-Cold War era has dissipated in large part because the Defense Department lags behind in developing advanced technologies. Our judgment is that the American defense research and development system, as honed during the Cold War and expanded since, is fully capable of handling any military challenge. It is a gigantic technology-generating, innovation-producing, war-fighting machine. U.S. ‘hard’ innovation capabilities – ‘input and infrastructure factors’ like R&D facilities, human capital, access to foreign technology, and availability of funding – far outstrip those of its potential rivals, even though those factors are the ones often thought of as easier for catch-up countries to obtain.[3](https://www.tandfonline.com/doi/full/10.1080/01402390.2021.1917392) Despite warnings that the United States no longer spends enough on R&D and that Chinese R&D spending is surging, the reality is that the United States dramatically leads in military innovation investment. In functional terms, the United States dominates all other countries, including China, in ‘input factors,’ starting with resource allocations to defense research and development. More important, we believe that the American defense technology system is pushed toward innovation by specific contextual factors, the ‘soft’ categories of attributes and capabilities, that cannot readily transfer to likely rivals.[4](https://www.tandfonline.com/doi/full/10.1080/01402390.2021.1917392)

### 2AC---DIB Link Defense

#### Precautionary policies good

Maciej Kuziemski 05-01-2018 [Published in Project Syndicate; Data program adviser at the Ditchley Foundation], “A Precautionary Approach to Artificial Intelligence,” <https://www.project-syndicate.org/commentary/precautionary-principle-for-artificial-intelligence-by-maciej-kuziemski-2018-05> Cut By: m.jam

Even without reliable data, decision-makers must move forward with AI governance. And, as the world waits for scientific certainty (which may never arrive), there is an existing solution that can guide us into the unknown: the “precautionary principle.” Adopted globally in 1992 as part of the United Nations [Rio Convention](http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm) on sustainable development, and later incorporated into one of the [European Union’s founding treaties](https://eur-lex.europa.eu/legal-content/EN/AUTO/?uri=celex:12016E191), the precautionary principle states that a lack of certainty cannot be a basis for failing to protect human health or the environment. That seems like a suitable way to address the uncertainty of a tech-driven future. The precautionary principle is not without its detractors. But while its merits have been debated for years, we need to accept that the lack of evidence of harm is not the same thing as evidence of lack of harm. This simple idea has been applied to [myriad human development issues](http://www.euro.who.int/__data/assets/pdf_file/0003/91173/E83079.pdf) – from public health to infant mortality. There are three good reasons why AI should be next. For starters, applying the precautionary principle to the context of AI would help rebalance the global policy discussion, giving weaker voices more influence in debates that are currently monopolized by corporate interests. Decision-making would also be more inclusive and deliberative, and produce solutions that more closely reflected societal needs. The [Institute of Electrical and Electronics Engineers](http://standards.ieee.org/develop/indconn/ec/autonomous_systems.html), and [The Future Society](https://assembl-civic.bluenove.com/ai-consultation/home) at Harvard’s Kennedy School of Government are already spearheading work in this participatory spirit. Additional professional organizations and research centers should follow suit. Moreover, by applying the precautionary principle, governance bodies could shift the burden of responsibility to the creators of algorithms. A requirement of explainability of algorithmic decision-making can change incentives, prevent blackboxing, help make business decisions more transparent, and allow the public sector to catch up with the private sector in technology development. And, by forcing tech companies and governments to identify and consider multiple options, the precautionary principle would bring to the fore neglected issues, like environmental impact. Rarely is science in a position to help manage an innovation long before the consequences of that innovation are available for study. But, in the context of algorithms, machine learning, and AI, humanity cannot afford to wait. The beauty of the precautionary principle lies not only in its grounding in international public law, but also in its track record as a framework for managing innovation in myriad scientific contexts. We should embrace it before the benefits of progress are unevenly distributed, or, worse, irreversible harm has been done.

#### Distinction between military and civilian innovation – the plan doesn’t hurt the bulwark of the DIB

Vincent Boulanin and Maaike Verbruggen 2017 “MAPPING THE DEVELOPMENT OF AUTONOMY IN WEAPON SYSTEMS” November 2017 Stockholm International peace research institute https://www.sipri.org/sites/default/files/2017-11/siprireport\_mapping\_the\_development\_of\_autonomy\_in\_weapon\_systems\_1117\_1.pdf

The innovation ecosystem that is driving the advance of autonomy in weapon systems is diffuse, chiefly because the technologies, academic disciplines and industry sectors involved in the development of autonomous capabilities may vary greatly depending on the type of application and systems at issue. Nevertheless, three general observations can be made. First, much of the fundamental research in the fields of AI and robotics that could feed the advance of autonomy in weapon systems is dual-use. The divergence between civilian and military innovation generally emerges towards the development end of the R&D cycle because civilian and military products often need to meet different performance criteria. Hence, should CCW delegates eventually engage in a formal discussion on the monitoring or regulation of R&D efforts that could lead to the development and production of LAWS, they should focus on the development end of the R&D cycle, as this is where the actual capabilities of LAWS will be definitively created. Attempting to monitor and control R&D at the more basic research level would be challenging from a practical perspective and possibly problematic as it could threaten civilian innovation. Second, the barriers to entry to the development of robotic systems are very low. Nearly all hardware components that might serve the development of autonomous robots are commercially available. It is even possible to acquire off-the-shelf low-cost robotic systems that feature advanced autonomous capabilities. These may be adopted, modified and weaponized by states but also, and more worryingly, by non-state actors seeking, for instance, to conduct terrorist operations. This scenario has not yet received great attention within the CCW discussions on LAWS, despite the fact it represents an imminent humanitarian risk. While it falls outside the traditional scope of the CCW, it would be prudent for the GGE to allocate some time to this issue in 2018. It could start a discussion on the options that are offered outside the CCW to control or limit the diffusion and malevolent use of key technologies. This could include discussing the possibilities offered by export control mechanisms and self-control by the industry. Third, future discussions on the development and control of autonomy in weapon systems could usefully benefit from further exchanges of experience with the civilian sector, especially companies developing safety-critical applications of autonomy (e.g. aerospace companies, carmakers and medical robot companies), considering that a number of issues that are central to discussion on LAWS have already been, or are currently being, actively addressed within the civilian sphere. These issues include the following. 1. How to define and measure autonomy? This question has been the concern of standardization and regulatory bodies for a long time. The International Organization for Standardization (ISO) and the International Electrotechnical Commission have had multiple projects aimed at generating an official definition of robot-associated terms, including ‘autonomy’ (ISO 8373:2012). In addition, the US National Highway Traffic Safety Association has adopted the Society of Automotive Engineers’ levels of autonomy for self-driving systems, ranging from complete driver control to full autonomy.110 2. How to operationalize meaningful human control? Civilian industry sectors that produce safety-critical systems (e.g. aerospace, automotive and medical robotics) are facing the same human control dilemmas as the defence sector. They too are dedicating their efforts to finding a model of the human–machine command-and-control relationship that will maximize safety. 3. How to test the safety and predictability of autonomous technologies? The commercial aerospace sector has procedures to test and verify advanced automated systems. Inviting experts from this community to talk about existing procedures would help to identify possible best practices for testing and evaluating weapons with advanced autonomous capabilities in the context of Article 36 reviews.

### 2AC---LAWS Don’t get bought

#### DOD policy means they can’t even buy LAWS

Gregory C. Allen, 22, (Gregory C. Allen, Director, AI Governance Project and Senior Fellow, Strategic Technologies Program, 6-6-2022, Center for Strategic and International Studies, DOD Is Updating Its Decade-Old Autonomous Weapons Policy, but Confusion Remains Widespread, https://www.csis.org/analysis/dod-updating-its-decade-old-autonomous-weapons-policy-confusion-remains-widespread, 7-3-2022) SCade

The DOD recently announced that it is planning to update DODD 3000.09 this year. Michael Horowitz, director of the DOD’s Emerging Capabilities Policy Office and the Pentagon official with responsibility for shepherding the policy, praised DODD 3000.09 in a recent interview, stating that “the fundamental approach in the directive remains sound, that the directive laid out a very responsible approach to the incorporation of autonomy and weapons systems.” While not making any firm predictions, Horowitz suggested that major revisions to DODD 3000.09 were unlikely. In general, this is good news. The DOD’s existing policy recognizes that some categories of autonomous weapons, such as cyber weapons and missile defense systems, are already in widespread and broadly accepted use by dozens of militaries worldwide. It also allows for the possibility that future technological progress and changes in the global security landscape, such as Russia’s potential deployment of artificial intelligence (AI)-enabled lethal autonomous weapons in Ukraine, might make new types of autonomous weapons desirable. This requires proposals for such weapons to clear a high procedural and technical bar. In addition to demonstrating compliance with U.S. obligations under domestic and international law, DOD system safety standards, and DOD AI-ethics principles, proposed autonomous weapons systems must clear an additional senior review process where the chairman of the Joint Chiefs of Staff, under secretary of defense for policy; and the under secretary of defense for acquisition, technology, and logistics certify that the proposed system meets 11 additional requirements, each of which require presenting considerable evidence. Getting the signatures of the U.S. military’s highest-ranking officer and two under secretaries in a formal senior review is no easy task. Perhaps the strongest proof of the rigor required to surpass such a hurdle is the fact that no DOD organization has even tried.

### 2AC---Heg Defense

#### No leadership impact – empirics.

Fettweis 20 – Christopher J, Associate Professor of Political Science at Tulane University. “Delusions of Danger: Geopolitical Fear and Indispensability in U.S. Foreign Policy", CATO Institute, <https://www.cato.org/publications/delusions-danger-geopolitical-fear-indispensability-us-foreign-policy>, 06-03-2020

Like many believers, **proponents of hegemonic stability theory base their view on faith alone**.41 **There is precious little evidence to suggest that the United States is responsible for** the **pacific trends** that have swept across the system. In fact, **the world remained equally peaceful**, relatively speaking, **while the U**nited **S**tates **cut its forces throughout the 1990s, as well as while it doubled its military spending in the first decade of the new century**.42 **Complex statistical methods** should not be needed to **demonstrate that levels of U.S. military spending have been essentially unrelated to global stability.** Hegemonic stability theory’s flaws go way beyond the absence of simple correlations to support them, however. **The theory’s supporters have never been able to explain adequately how precisely 5 percent of the world’s population could force peace on the other 95 percent**, unless, of course, the rest of the world was simply not intent on fighting. **Most states are quite free to go to war without U.S. involvement but choose not to**. **The U**nited **S**tates **can be counted on, especially after Iraq, to steer well clear of most civil wars and ethnic conflicts**. It took years, hundreds of thousands of casualties, and the use of chemical weapons to spur even limited interest in the events in Syria, for example; surely internal **violence in**, say, **most of Africa would be unlikely to attract serious attention of the world’s policeman, much less intervention**. **The continent is, nevertheless, more peaceful today than at any other time in its history**, **something for which U.S. hegemony cannot take credit**.43 **Stability exists today in many such places to which U.S. hegemony simply does not extend.** Overall, proponents of the stabilizing power of U.S. hegemony should keep in mind one of the most basic observations from cognitive psychology: rarely are our actions as important to others’ calculations as we perceive them to be.44 The so‐​called egocentric bias, which is essentially ubiquitous in human interaction, suggests that although it may be natural for U.S. policymakers to interpret their role as crucial in the maintenance of world peace, they are almost certainly overestimating their own importance. Washington is probably not as central to the myriad decisions in foreign capitals that help maintain international stability as it thinks it is. The indispensability fallacy owes its existence to a couple of factors. First, although all people like to bask in the reflected glory of their country’s (or culture’s) unique, nonpareil stature, Americans have long been exceptional in their exceptionalism.45 The short history of the United States, which can easily be read as an almost uninterrupted and certainly unlikely story of success, has led to a (perhaps natural) belief that it is morally, culturally, and politically superior to other, lesser countries. It is no coincidence that the exceptional state would be called on by fate to maintain peace and justice in the world.

#### Alternative explanations for stability outweigh.

Fettweis 20 – Christopher J, Associate Professor of Political Science at Tulane University. “Delusions of Danger: Geopolitical Fear and Indispensability in U.S. Foreign Policy", CATO Institute, <https://www.cato.org/publications/delusions-danger-geopolitical-fear-indispensability-us-foreign-policy>, 06-03-2020

Many of the factors that contribute to geopolitical fear — Manichaeism, religiosity, various vested interests, and neoconservatism — also help explain American exceptionalism and the indispensability fallacy. And unipolarity makes hegemonic delusions possible. With the great power of the United States comes a sense of great responsibility: to serve and protect humanity, to drive history in positive directions. More than any other single factor, the people of the United States tend to believe that they are indispensable because they are powerful, and power tends to blind states to their limitations. “Wealth shapes our international behavior and our image,” observed Derek Leebaert. “It brings with it the freedom to make wide‐​ranging choices well beyond common sense.“49 **It is quite likely that the world does not need the U**nited **S**tates **to enforce peace**. In fact, **if virtually any of the overlapping and mutually reinforcing explanations for the current stability are correct, the trends in international security may well prove difficult to reverse**. **None of the contributing factors that are commonly suggested** (**economic development, complex interdependence, nuclear weapons, international institutions, democracy, shifting global norms on war**) **seem poised to disappear any time soon**.50 **The world will probably continue its peaceful ways** for the near future, at the very least, **no matter what the U**nited **S**tates **chooses to do or not do**. As Robert Jervis concluded while pondering the likely effects of U.S. restraint on decisions made in foreign capitals, “It is very unlikely that pulling off the American security blanket would lead to thoughts of war.“51 The United States will remain fundamentally safe no matter what it does — in other words, despite widespread beliefs in its inherent indispensability to the contrary.

\*only read if they read the SCS scenario\*

**No SCS war this decade –** China will avoid confrontation**.**

Yuan 20 – Shaoyu, author of “Panda Not Dragon: Why The Rise of China is not a Threat”. Yuan’s works have appeared on multiple scholarly journals and conferences, with topics including the conflict between China and Japan over the Senkaku islands, South Korea’s cultural influence on Modern China, and others. He is currently completing his doctoral degree at Rutgers University. Yuan received his B.A. from Centre College and his M.S. from Northeastern University. “South China Sea Threat Assessment: Is China a Threat or a Paper Tiger?”, Georgetown Journal of International Affairs, <https://gjia.georgetown.edu/2020/02/20/south-china-sea-threat-assessment/>, 02-20-2020

Tensions in the South China Sea continue to rise. China’s People’s Liberation Army Navy (PLAN)’s Rear Admiral Lou Yuan, regarded as a hawkish military commentator, recently proclaimed that the continuing dispute over the ownership of the South China Sea could be resolved by sinking two US aircraft carriers. Statements like these result in a legitimate fear that China’s increasing presence in the South China Sea might spark a kinetic military conflict with the United States. However, **while most Western scholars and media are paying excessive attention to the rise of China, few are contemplating China’s weaknesses in the region.** Despite China’s constant verbal objections and rising tensions with the United States in the last century, **the world has yet to witness any major military confrontation between the two superpowers**. **China will continue to avoid directly confronting the United States in the South China Sea for at least another decade because China’s military remains immature and defective.** **China’s weak joint command system, which has become an essential instrument in modern warfare, comprises its first major military weakness.** **If any military operations are to be conducted in a region such as the South China Sea, the integration and cooperation between the air force, navy, and landing army is indispensable**. However, even as it boasts the second largest defense spending figures worldwide, **China only recently created their first and only joint command system**, the Joint Staff Department of the Central Military Commission (CMC), under President Xi Jinping’s new national defense and military reform. In addition, around 70 percent of the PLA soldiers belong to the PLA Army, and almost all senior officers on the CMC are army officers. **This imbalance has the potential to cause serious complications, such as interservice rivalry for the newly formed Joint Staff Department, when it comes to decision-making involving naval and aerial affairs―areas in which army officers have no experience.** The Chinese are certainly attempting to resolve this problem by establishing departments like the PLA Joint Logistic Support Force, which handles logistical operations and oversees the military supplies, infirmaries, and barracks of the PLA. However, **the “peace disease”―an idea that a period of prolonged peace can weaken a state’s military ability―continues to hamper China’s military modernization, as there has been no opportunity to test its joint command system in actual combat. The last time China had a full-fledged military conflict was forty years ago with Vietnam, which concluded with a Chinese defeat**. **If the CMC hopes to win a direct military engagement with US naval forces, it must compensate for lack of experience in operating a joint command system. Until it does so,** **China’s military poses little threat to the United States and its allies**. Sea power is crucial for taking control of the South China Sea. The Chinese Navy is divided into the North, East, and South Fleets. Among the four divisions, the PLAN’s South Fleets poses the most immediate threat because it is currently active in the South China Sea. Together, the fleets possess only one aircraft carrier in operation: the Liaoning, an abandoned Soviet-era vessel that was purchased from Ukraine as a training ship, but reportedly had to return to port immediately due to an engine failure during a sea trial. The country’s one and only domestically built aircraft carrier, the Type 001A, is under scrutiny, as it is believed that the carrier manager might have leaked classified information of Liaoning to the CIA. In contrast, the United States possesses nineteen aircraft carriers, far outnumbering the Chinese. Although the number and strength of aircraft carriers do not necessarily determine the victor of a confrontation, the tonnage of a country’s navy might. Larger tonnage provides more space for fuel, weapons, and ammunition, and a vessel with bigger hull not only has more rounds to fire but also the capability to endure longer voyages. The United States Navy has a total tonnage at least two times greater than that of PLAN’s. China also lags in its ballistic missiles. For instance, China’s People’s Liberation Army Rocket Force (PLARF) only began to field its Intermediate-Range Ballistic Missile (IRBM) DF-26 in 2016, and **the country’s arsenal only consisted of ninety** Intercontinental Ballistic Missiles **(ICBM) as of 2019. In comparison, the United States had a total of 405 deployed ICBMs and 278 non-deployed ICBMs as of 2017**. In reality, **China’s stockpile of weapons and equipment is still substantially inferior to that of the United States, deterring a full-fledged war from breaking out in the South China Sea.** Alone, **China’s military is insufficient to face the United States in direct confrontation** and would therefore be forced to turn to its allies. **China currently lacks any such dependable military allies in the South China Sea. China’s leading ally in the region, North Korea, is a totalitarian regime with a struggling economy, and most of its vessels are only operable within fifty nautical miles of its coast**. Although China and North Korea maintained strong relations during the Cold War era, the Beijing-Pyongyang relationship has gradually declined since the beginning of the twenty-first century and the start of North Korea’s nuclear program. China has joined the United Nations in implementing sanctions against North Korea because of its unauthorized nuclear testing. Although China remains North Korea’s closest friend, an alliance is rather far-fetched. Moreover, **the international scrutiny that North Korea faces, as well as its deficient economy, means that it lacks the resources to support Chinese forces in the South China Sea if serious military conflict were to occur. In contrast, the United States can easily depend on South Korea, Japan, Taiwan, Australia, and the Philippines to provide naval support**. In addition, although the United States is not allied with most of the Southeast Asian nations, **the increasing cooperation between the United States and** the Association of Southeast Asian Nations (**ASEAN) is similar to a military alliance with no written agreement. The United States and ten ASEAN navies have commenced multiple maritime drills as part of a joint exercise extending into the South China Sea, countering China’s presence in the region**. In contrast, China and ASEAN only had their first joint maritime exercise last year, which mostly focused on the code for unplanned encounters at sea, search and rescue operations, and communication exercises. In addition, **US allies in the region have increased their defense budgets to combat growing Chinese influence.** Although China’s navy has recently commissioned the Nanchang guided-missile destroyer (the biggest surface warship ever made), the vessel is only powerful in relation to other **Chinese ships**, which **are around 3,000 tons less powerful than the United States’ Zumwalt-Class destroyer in terms of displacement.** Consequently, **China is slowing its plan to build two aircraft carriers** for each of its regional fleets to build the Nanchang. **China may be aiming for a hegemonic position in Asia, but that does not mean it will succeed. The country’s military―specifically its navy―is still immature.** China is undoubtedly on the rise, yet **the country still has many profound and systemic problems within its military**. Perhaps some of these problems could be resolved with China’s continued growth, but **institutional change―especially when problems are so ingrained into the system―takes a long time**. Based on what defense analysts currently observe, **China does not pose a military threat to the United States in the South China Sea**; therefore, there is no need to invest more resources and capital into the Pacific for the time being. However, the United States should maintain its presence in the area by continuing to foster relationships with its allies while keeping a close eye on China’s movements. Sacrificing resources for the sake of military proliferation in a region where such action is unneeded is a wasteful move that the United States should avoid.

**no escalation of SCS disputes** – all sides show restraints

**Bo 20** – Hu, Director of the Center for Maritime Strategy Research and Research Professor at the Institute of Ocean Research, Peking University. He is also Director of the South China Sea Strategic Situation Probing Initiative (SCSPI). His most recent publications include China’s Sea Power in the Post Mahan Era by China Ocean Press (2018) and Chinese Maritime Power in the 21st Century by Routledge (2019). “China-US Military Confrontation in the South China Sea: Fact and Fiction”, The Diplomat, <https://thediplomat.com/2020/06/china-us-military-confrontation-in-the-south-china-sea-fact-and-fiction/+&cd=1&hl=en&ct=clnk&gl=us>, 06-12-2020

**The** **China-U.S. rivalry** **in the South China Sea** **is certainly growing**, **but war is still some way off.** **There are** several **maritime encounters between the two sides every day**, **and** **thousands** **every year**. **Most of them are professional** **and** **safe**; only a few have involved some risks. The recent pandemic has made both countries and militaries more sensitive, which, to some extent, has heightened the tension of the situation. Because of COVID-19, China and the United States are more concerned and anxious about each other. In addition to maintaining daily operations in the western Pacific, both sides have some new worries. The United States is concerned that China would take advantage of the temporary power vacuum; thus it has deliberately shown more force and given China more diplomatic pressure. **China** **feels** that **Washington’s** South China Sea **policy is** increasingly desperate to the point that, even during the pandemic, the United States has not forgotten **to** **provoke** **China**. Beijing is also convinced that the U.S., motivated by power competition, is focusing on China’s activities and ignoring the actions of other claimants. **From mid-April to early May**, **the** U.S. **Navy dispatched several warships**, including USS America LHA-6, to the so-called standoff area between the Haiyang Dizhi 8 and the West Capella **to deter** China’s **operations**. **The PLA Navy** was **believed to have a similar number of warships** there at the same time, **which aroused** **heated discussion** **among the media and experts.** Another less publicized but more intense case was the reconnaissance and counter-reconnaissance of China’s aircraft carrier Liaoning formation when it was conducting open sea cross-region mobile training while followed by American warships and multiple military aircraft. An anonymous PLA Navy officer revealed that the confrontation was so intense that one U.S. warship even once came within 100 meters of the Chinese carrier. **Even so**, **both sides** have **remained** **largely professional** **and** **restrained**. In fact, **neither the Chinese** military **nor the American military has increased** its **activity significantly** **compared** **with the same period of 2019**, **despite the impression** **given by most media reports** **and** **expert commentaries**. The problem is that these operations are over-exposed and over-focused. **In the backdrop of** **power competition**, **especially amid the pandemic**, in order to show their strength and determination, U.S. **forces have given** **undue prominence** **to covering and publicizing** **military activities**, giving the media and the public a lot to discuss and imagine. There are some hawks in both countries who take advantage of this and exaggerate the situation. Although most countries including the South China Sea claimants, do not want to see China-U.S. military conflict, some individual countries are indeed rejoicing over the growing competition between China and the United States, which may lead to some opportunity for them to expand. China-U.S. military confrontation or even war in the South China Sea has a huge market. **China and the** **U**nited **S**tates **are**, of course, **preparing for any kind of** military **conflict** and the **worst scenarios** in the South China Sea; **however**, **there is no indication that the two sides want to resolve** their **contradictions** **by using force strategically or operationally** — **despite the** repeated **war rhetoric** from some senior American officials. **In daily military interactions**, **there are really increasing risks**, **but** **in the absence of a subjective desire for conflict**, **these risks are** **highly** likely to be **controlled**. The most important thing for the Chinese and American militaries to prevent is miscalculation, considering the relatively backward or ineffective crisis management mechanisms of the two countries even compared with Soviet-U.S. and then Russia-U.S. military relations. In addition, we need to let professionals do their work. The China-U.S. military rivalry has been unduly influenced by the media, commentators, and some politicians, which amplifies the intensity of the competition and is likely to lead to self-fulfilling prophecies. Both Chinese and the U.S. militaries need to remain competitive and professional, keeping politics and public opinion in check. After all, **if there were to be war**, **it would be the front-line commanders** and sailors **who bear the brunt of it;** **others would be mere bystanders**.

#### No prolif impact

Mueller 19 – John, Senior Research Scientist and Adjunct Professor at Mershon Center for International Security Studies. “Exaggerated Alarm and Destructive Excursions: Antiproliferation Policy and The Case of North Korea” Prepared for presentation at the First World Congress of Security Studies Hosted by the Research Institute for National Security Affairs, Korean National Defense University, <https://politicalscience.osu.edu/faculty/jmueller/PAKaoKorea19.pdf>, 08-12-2019

The **prolif**eration **of nuclear weapons has been far slower than predicted**, and this seems to be **because the weapons do not generally convey much advantage to their possessor. Dozens of technologically capable countries have considered** obtaining **nuclear arsenals, but very few have done so.** A key reason for this is that the **possession of such expensive armaments actually conveys in almost all cases rather little advantage** to the possessor. In the main, **they are difficult to obtain, militarily useless, a spectacular waste of time, money, and scientific talent, distasteful, and likely to rile the neighbors.** Moreover, the weapons have also been **exceedingly difficult to obtain for administratively dysfunctional countries.**9 Moreover, the **consequences of what little prolif**eration **has taken place have been substantially benign. Those who have acquired the weapons have “used” them simply to stoke their egos or to deter real or imagined threats.** For the most part, **they have quietly kept the weapons in storage and haven’t even found much benefit** in rattling them from time to time. **Nor have the weapons proven to be crucial status—or virility—symbols**, although Pakistan and Russia do probably garner more attention that they would if they did not have nuclear weapons. But **how much more status would Japan have if it possessed nuclear weapons? Would anybody pay a great deal more attention to Britain or France if their arsenals held 5,000 nuclear weapons, or would anybody pay much less if they had none?** Did China need nuclear weapons to impress the world with its economic growth? Or with its Olympics? **Prolif**eration **alarmists may occasionally grant that countries principally obtain a nuclear arsenal to counter real or perceived threats, but many go on to argue that the newly nuclear country will then use its nuclear weapons to “dominate”** the area. That argument was repeatedly trotted out with dramatic urgency before 2003 for the dangers supposedly posed by Saddam Hussein, and it is now being applied to Iran. Exactly **how** that **domination** business **is** to be **carried out is never** made **clear.**10 But the notion, apparently, is that should an atomic country rattle the occasional rocket, other countries in the area, suitably intimidated, would supinely bow to its demands. Far more likely, **any threatened states will make common cause with each other and with other concerned countries against the threatening neighbor**—rather in the way they coalesced into an alliance of convenience to oppose Iraq’s invasion of Kuwait in 1990.