



ASTROS

PROCAD DEFESA

BOLETIM ASTROS



MINISTÉRIO DA
DEFESA

BOLETIM ASTROS

A Newsletter da Equipe Procad ASTROS



O Boletim Astros é uma publicação mensal que reúne informações sobre as (I) Novidades do Projeto, (II) Indicações do Mês, (III) Segurança Internacional, (IV) Tecnologia, Mísseis & Sistemas de Defesa, (V) Defesa Nacional & Forças Armadas e (VI) ASTROS & Indústria de Defesa. Elaborado pela equipe de pesquisadores do Projeto Procad Defesa ASTROS, o boletim oferece um panorama geral de notícias e artigos publicados em portais especializados, revistas, jornais, *magazines*, periódicos, *sites* institucionais e *think tanks* com foco nas temáticas mencionadas.

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Últimas atividades – Projeto Procad Defesa ASTROS

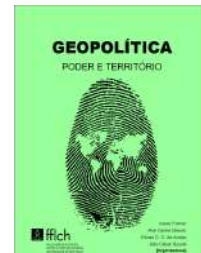
Publicação de livro do Prof. Augusto Teixeira Jr.

Foi lançado, no dia 26 de maio de 2021, o livro "Estratégia Militar Aplicada: metodologia de emprego" pela FGV Editora, obra escrita pelo Cel. Walter Da Costa Ferreira e pelo Prof. Augusto Teixeira Jr. A obra aborda a temática da estratégia militar aplicável aos conflitos e se destina a apresentar os principais aspectos desses enfrentamentos, bem como explicar os fundamentos do planejamento estratégico no que diz respeito a soluções de controvérsias.



Publicação de capítulo do Dr. Carlos Eduardo Valle para o livro "Geopolítica: Poder e Território"

Foi publicado neste mês o livro "Geopolítica: Poder e Território" pela Universidade de São Paulo (USP). A coleção de debates sobre geopolítica conta com capítulo escrito pelo Dr. Carlos Eduardo Valle, intitulado "Geopolítica: uma apreciação histórica", em que é realizada uma análise temporal dos principais autores, ideias, obras e tendências que pautaram o tema. A obra busca elucidar fatos sobre a globalização e seus impactos nas vidas humanas, especialmente as relações nacionais e internacionais.



Publicação de artigo do Prof. Augusto Teixeira Jr. na Revista Tempo & Argumento

O artigo intitulado "Entre a guerra, a doutrina e a tecnologia: um histórico da evolução doutrinária do exército dos Estados Unidos (1959-2017)", publicado na edição 33 da Revista Tempo & Argumento, busca investigar a evolução doutrinária do Exército dos Estados Unidos, tendo como base documentos oficiais e argumentos teóricos da História Militar para os Estudos da Guerra.



Participação do Prof. Peterson F. Silva e Raphael C. Lima em evento do GEPSI

No dia 13 de maio de 2021, o Prof. Peterson F. Silva e Raphael C. Lima participaram do evento "Discussão com Autor", no qual debateram seu artigo "*No power vacuum: national security neglect and the defence sector in Brazil*". O artigo foi publicado na Revista Defence Studies e conduz uma perspectiva da produção de políticas de segurança nacional e o setor de defesa, tendo o Brasil como caso de análise.



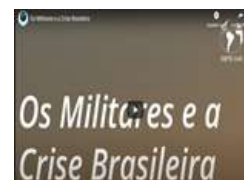
Participação do Prof. Eduardo Svartman na mesa redonda "Poder Político e Defesa Nacional"

O Prof. Eduardo Svartman participou do debate "Poder Político e Defesa Nacional: Responsabilidades na Orientação e Capacitação Estatal", promovido pelo Instituto de Estudos Estratégicos (INEST). O evento contou também com a participação do professor Vinícius Mariano de Carvalho, do King's College London, do professor Eduardo Brick, do laboratório UFF Defesa e do professor Márcio Rocha, vice-diretor do INEST.



Participação do Prof. Juliano Cortinhas na Live do GEPSI-UnB "Os Militares e a Crise Brasileira"

No dia 20 de maio de 2021, o Prof. Juliano Cortinhas participou como moderador da Live intitulada "Os Militares e a Crise Brasileira". O evento, promovido pelo GEPSI-UnB, discutiu o livro de João Roberto Martins Filho (UFScar). A obra reúne um conjunto de textos que procuram compreender as raízes, significados e perspectivas da participação castrense na crise brasileira.



INDICAÇÕES DO MÊS

Materiais recomendados

Estudo comparativo do planejamento da mobilização de defesa: um exame de planejamento ultramarino



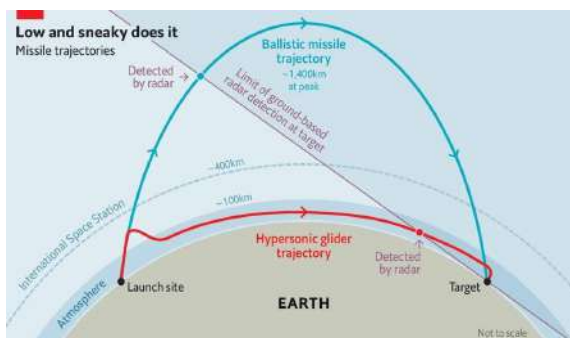
Discussões sobre mudanças na zona cinzenta, aumento da frequência de desastres naturais e outras dinâmicas causadas pela presença do homem, acrescido a competição estratégica dentro do Indo-Pacífico, permitiram que a Atualização Estratégica de Defesa de 2020 abarcasse propostas políticas de articulações para a Austrália, em especial no tocante à teoria da dissuasão. No documento de 180 páginas, os autores sugerem a adoção de uma estrutura de defesa total para o planejamento da mobilização, entre outros apontamentos.

Aprimorando a estabilidade estratégica sino-americana em uma era de competição estratégica



O documento publicado no dia 26 de abril pelo United States Institute of Peace é uma coletânea de ensaios de 12 especialistas, chineses e estadunidenses, da área de segurança. Os autores refletem sobre as diferenças e semelhanças nas avaliações entre os Estados Unidos (EUA) e a China, bem como as raízes da instabilidade entre os países, impulsionadas por um possível conflito nuclear ou convencional. Os autores também discorrem sobre defesa antimísseis, espaço, ciberespaço e inteligência artificial.

Armas hipersônicas: antecedentes e questões para o Congresso



O artigo, publicado pelo Serviço de Pesquisa do Congresso dos Estados Unidos (EUA) em 26 de abril de 2021, analisa o desenvolvimento de armas hipersônicas pelo país, especialmente a tentativa, desde os anos 2000, de atingir velocidades Mach-5 enquanto mantém alta capacidade de manobra. O desenvolvimento dessas armas teria como objetivo aumentar o arsenal missilístico dos EUA e seu programa de ataque global imediato. O documento ressalta que as opiniões contidas nele são partidárias.

Estabilidade estratégica e tecnologias emergentes de mísseis



Em virtude das discussões acerca da prorrogação do Novo Tratado de Redução de Armas Estratégicas (Novo START), a Iniciativa de Diálogo sobre Mísseis promoveu um debate *online*, onde participaram diversos especialistas sobre a temática. O evento tem como objetivo preparar a sociedade australiana para novos desafios. Para tanto, utiliza comparações estratégicas com países como os Estados Unidos. O evento elenca cinco pontos principais, percorrendo da formação de estruturas defensivas até guerra cibernética.

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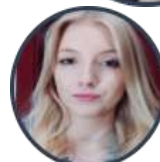


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1. Why is Iran producing 60 per cent-enriched uranium?

29.04.2021

SIPRI

<https://www.sipri.org/commentary/essay/2021/why-iran-producing-60-cent-enriched-uranium>

On 13 April, Iran announced its intention to enrich uranium to 60 per cent U-235. This was characterized by Iran as a response to a sabotage of its vast underground enrichment cascades at Natanz two days before. The move comes against the backdrop of sensitive negotiations happening in Vienna aimed at rescuing the 2015 Iran nuclear deal, the Joint Comprehensive Plan of Action (JCPOA), and bringing the United States back into compliance with the deal. Iran had already been producing uranium enriched to just under 20 per cent (around 19.5 per cent) following a decision in December 2020, a deliberate step away from compliance with the JCPOA's terms. Enrichment to 60 per cent, however, is a significant escalation in enrichment operations.

Once it has been enriched beyond 20 per cent, uranium enters a different nuclear materials safeguards accounting category: highly enriched uranium (HEU). Although under the Nuclear Non-Proliferation Treaty (NPT) it is legal for any country to produce HEU, the JCPOA limits Iran's uranium enrichment to 3.67 per cent. Iran's decision has also inevitably drawn international attention because it brings the country so close to producing 90 per cent-enriched uranium, which is generally considered weapons-grade.

A political message

Uranium enriched to 60 per cent cannot be used to make a useful nuclear explosive device, and Iran has no other realistic use for this material. Nevertheless, 60 per cent was not an arbitrary choice. Cascades of centrifuges are designed to enrich uranium in steps; Iran's centrifuges are likely set up to enrich up to 20 per cent, from 20 to 60 per cent, and from 60 to 90 per cent. Assuming the 60 per cent-enriched uranium is stored in the form of uranium hexafluoride (UF₆) gas—and there would be no point in Iran converting it to any other chemical form—the enrichment step from 60 per cent-enriched to weapons-grade uranium is very short. This strongly suggests that Iran's decision was intended to send a political message: 'We have gone as far as we can go in response to provocations without producing weapons-grade uranium.'

Twenty per cent enrichment still a priority

Iran has informed the International Atomic Energy Agency (IAEA; GOV/INF/2021/22) that enrichment to 60 per cent will take place at the Pilot Fuel Enrichment Plant (PFEP) at Natanz. The PFEP is located above ground and is not part of the vast underground enrichment complex. It does not seem to have been damaged in the recent sabotage. Subsequent developments reinforce the impression that the move is a largely ad hoc political gesture with no immediate benefit to an alleged weapons (or indeed civilian) programme. On 16 April 2021, Dr Ali Akbar Salehi, the head of the Atomic Energy Organization of Iran (AEOI), announced on state television that Iran had begun enriching uranium to 60 per cent at the rate of 9 grams per hour, or about 1 kilogram every five days.

In the same statement, however, Salehi said the intention was to reduce that rate of production to 5 grams per hour and to ‘simultaneously’ produce 20 per cent-enriched uranium. The IAEA confirmed last week that Iran had indeed cut the number of centrifuges producing HEU. The link with 20 per cent enrichment relates to a process called recombination. According to the IAEA (in GOV/INF/2021/22), Iran is producing the HEU in advanced IR-4 and IR-6 centrifuges. It then intends to feed the ‘tails’ (waste) of this enrichment stage into another IR-4 cascade to produce 20 per cent-enriched UF6. These tails will be somewhere between 5-per cent and 20-per cent enriched.

The likely reason why Iran cut the rate of production of HEU—almost immediately after it started—is to match the quantity of tails to the feed requirement of the 20-per cent enrichment stage. As I argued earlier this month in a SIPRI essay, 20 per cent-enriched uranium has a clear (civilian) purpose for Iran: producing advanced fuel for the Tehran Research Reactor. If this is the case, it would seem to confirm that demonstrating the capability to produce 60 per cent-enriched uranium is more important to Iran than actually producing that material. Finally, it should be noted that the production of 60 per cent-enriched uranium is a far from irreversible step, and creates no significant new technical barrier to Iran returning to compliance with the JCPOA. However, what impact it has on the current negotiations to salvage the deal remains to be seen.

2. Five lessons from Russia’s Ukraine military escalation

29.04.2021

Chatham House

<https://www.chathamhouse.org/2021/04/five-lessons-russias-ukraine-military-escalation>

1. Attention is focused where Russia wants it to be

In mid-April, international media reported Russia will invade or ‘go to war’ with Ukraine, without realizing this is already effectively the case. Russia’s annexation of Crimea and invasion of Donbas back in 2014 essentially created a war – although it remains undeclared – with Ukraine. This apparent short-term memory loss is accompanied by a stubborn habit of focusing almost exclusively on numbers and capabilities, which comes to the fore every time Russia moves troops and hardware close to NATO or European borders. Even the European Union (EU) High Representative Josep Borrell fell into this trap by floating bogus numbers before having to admit his mistake. This is the essence of Russia’s reflexive control because, to achieve information dominance, Russia saturates the rest of the world with what Moscow wants everyone to focus on – namely shock and awe and fear-mongering. The message becomes the weapon which then has the tendency to limit options in terms of pushing back against Russia. Focusing too much on military capabilities and numbers only leads to self-deterrence.

2. Deployment does not fit an invasion plan

Few analyses looked at which troops and capabilities Russia actually deployed in occupied Crimea, as well as on the Pogonovo training grounds close to Voronezh, which is a few hundred kilometers from the Ukrainian border. The main force in Pogonovo was made up of disparate elements from Russia’s central, southern, and western military districts. The temporary staging area there hosted impressive displays of military hardware, but not enough logistical and support units to stage a full-on and sustainable invasion. In

this, Russia does not win its battles by massing troops, but by using well-thought-out, pre-positioned military logistics.

Furthermore, no rear movement would happen without activating the spearhead first, whether this is local proxies in Donbas – the 1st Corps in Donetsk and the 2nd Corps in Luhansk – or resupply nodes around the Debaltseve and Yasinovata railway links in Donbas. As evidenced by a CSIS satellite images analysis report, recent deployments demonstrate a readiness and quick deployment capabilities rather than an invading force. If Russia wants to invade Ukraine again, it would not be signposting it weeks before but rather use more covert means. Small incursions into Ukraine – either to create an imagined ‘land bridge’ through Mariupol or secure access to the water reservoirs in mainland Ukraine – are also out of the question, at least for now.

3. Russia wants to retain control on its terms

Beyond deployed capabilities, the recent stand-off reminded policymakers the Kremlin retains complete escalation dominance over eastern Ukraine, Crimea, and beyond. The Kremlin laid the blame for the crisis on Ukraine, arguing that Kyiv ‘moved first’ by carrying out seasonal military rotations to the frontline. Moscow also claims it was responding to a supposed threat from NATO in the context of the DEFENDER Europe-2021 military drills.

For the Kremlin, there was a clear incentive in showing Ukraine that no country – especially the new Biden administration in the US – would rush to save Kyiv should tensions escalate further. But this objective was only partly achieved as the US Senate quickly introduced a bill aimed at increasing military assistance to Ukraine. However, further discussions on the now-moribund Minsk process will continue to take place on Russia’s terms. Short of a war with Russia that Ukraine will lose, the Kremlin has proved the only way forward for Kyiv is to accept the situation and prepare for potential compromises – a situation seen before.

4. Moscow achieves tactical gains in the Sea of Azov

Largely escaping international attention, Russia announced the unilateral closure of the Kerch Strait to non-Russian vessels from 24 April until 31 October, reportedly to avoid ‘accidental clashes’ from upcoming naval drills there. But this reveals a tactical gain – Moscow turning the Sea of Azov into a ‘Russian lake’. Initial moves to this end took place in 2018, with the highest-profile act being when the Russian coastguard reportedly assaulted Ukrainian surface vessels and temporarily closed navigation through the Strait in November 2018.

Air superiority assets deployed to Crimea in April are another sign the recent deployments have more to do with wider Black Sea security and extended strategic depth than specifically with Ukraine. But this situation is inflicting immense cost on Ukraine, especially for maritime commerce between Azov coastal cities and the rest of Ukraine, and will only deteriorate in the coming months.

5. Despite Russia’s partial withdrawal, tension remains high

Now President Vladimir Putin and defence minister Sergey Shoygu have announced partial withdrawal of the forces from the Voronezh staging grounds and Crimea by 1 May, the fact Russia did not invade Ukraine enables Moscow to try to look like a peacemaker. Russia is leaving troops and military hardware in Pogonovo – mostly from the 41st Combined Arms Army – to prepare for the upcoming Zapad-2021 strategic military exercise in late summer. But this also allows Russian forces to demonstrate increased presence and readiness ahead of NATO’s DEFENDER-Europe 2021 drills.

3. The Chickens Have Come Home to Roost: Venezuelan Skirmishes on the Border

06.05.2021

CSIS

<https://www.csis.org/analysis/chickens-have-come-home-roost-venezuelan-skirmishes-border>

Since late March, battle-tested Revolutionary Armed Forces of Colombia (FARC) combatants have defied Venezuela and knocked its military on its heels. There are two important lessons to draw from these recent armed clashes between FARC fighters and Venezuelan armed forces on the border with Colombia. One lesson is for the Maduro regime and the other for those who have expressed interest in replacing it. Ironically, both Venezuelan parties are prone to underestimating the FARC, a lesson that was hard learned on the Colombian side of the border. The armed encounters have served as an abrupt wake-up call for Nicolás Maduro and his supporters. Violent clashes have continued into a second month, underscoring that the regime was caught off-balance.

The Venezuelan regime was first surprised at the realization that it does not really control its own national territory. The truth is, the central government has not exercised full authority in the border region with Colombia for a long, long time, although the situation has worsened under the rule of Hugo Chávez and later Maduro. Over time, FARC—and the National Liberation Army (ELN) and others—have displaced and replaced the local population in these areas, often with a nod from the Venezuelan regime. In fact, today the irregulars and the locals are often one and the same. The real outsiders in this story have turned out to be the Venezuelan military that, as of late March, intruded in the area and immediately employed violence. The home advantage, however, has gone to the better trained, prepared, and battle-hardened insurgents, transplanted residents who in defense of their adopted territory have shown greater resilience than the Venezuelan forces sent to deal with them.

Had the Venezuelan forces done their homework, they would have also realized that the FARC forces they were up against, the 10th Front led by Commander Gentil Duarte, were neither recidivist nor truly so-called dissidents. They never really pledged to follow the Colombian peace process, never put down their arms, nor renounced the use of violence. In fact, the 10th Front continued to do what it has always done since years ago when they first deployed to this corner of Venezuela: secure a safe haven within Venezuelan territory from where they could oversee a lucrative cocaine trafficking corridor. The ease with which the Venezuelan forces fell to FARC landmines served as a stark reminder that FARC are really on home soil. The Venezuelan regime was caught unprepared to deal with the terrible effectiveness of these anti-personnel devices, especially in the hands of professionals determined to protect their own camps, trails, and safe areas. To the insurgents' benefit, the Venezuelan regime repeated a common mistake: they chose to counter a classic guerrilla adversary with conventional warfare methods. That story rarely ends well for the state.

So, on the border, the Venezuelan armed forces encountered unexpected resistance that has handed them repeated setbacks and mounting casualties. The regime has not had the usual opportunity to showcase captured or dead enemy next to the obligatory piles (or, conversely, carefully arranged rows) of war materiel taken off the battlefield. Instead, the official images offered so far look especially unconvincing in their composition and display. What we do see are the smoldering remains and rubble littered results of insurgent hit-and-run operations, ambushes, and blown-up government installations. Most recently, we see too many Venezuelan military casualties strewn on the battlefield. The guerrillas hit here and there at

the regime's weak spots, meld back into the population or the nearby jungle, as practiced guerrillas so expertly do.

In response, the Venezuelan military appears to have been mobilizing any troops on hand, regardless of their suitability. Among those who have been called up for duty are the inept territorial militias. They have been spared actual combat deployment, thankfully. Also called in, if a little late, are the professional soldiers and marines. These, along with army special forces, stand in clear contrast to the deputized Special Action Forces (FAES) of the Bolivarian National Police that were sent in early. The FAES not surprisingly soon after their deployment proved they were unprepared to confront a properly armed foe. Spotted were even Russian-built Hind attack helicopters apparently playing an elusive cat-and-mouse game, one that an experienced FARC 10th Front has had a few decades to perfect. In short, the Venezuelan military has lost men, vehicles, pride, and the initiative, and have precious little to show for their strained efforts.

Today, the regime is worried. Nervous and defeated, expect the regime to have hastily called on their Russian military advisers and redirected any Wagner guns-for-hire to jump into the fray. So, left initially with a bloody nose and a bruised ego, and then rather quickly with several casualties among their officer corps, the Venezuelan military is pained and humiliated. They have also started to question their own leadership. Why so unprepared, and why the poor strategic and tactical decisions? Why the high number of casualties? Why the needless sacrifices? In any case, the military clearly failed at whatever it was they set out to prove by taking on the FARC 10th Front.

In a display of false bravado, the regime forces will now likely remain in the operational area for a while longer, feigning confidence and making largely conservative, prudent, and safe moves. They will avoid further clashes if they can. If not, they will add to their losses. And, if they are smart, will take lessons back to the drawing board where they will be best advised to study them. They will be particularly anxious to return to the calming ignorance of the status quo ante, where coexistence, denial, and cooperation, not to mention turning a blind eye, were the order of the day. The next time the Venezuelan military is called to address armed violence in a disputed area, they can be expected to approach the mission soberly and with greater caution. Otherwise, they will be handed another lesson in unconventional warfare courtesy of illegally armed groups in the area.

The Opposition

Now, there is also a powerful lesson for those opposed to Maduro. When discussing post-regime security challenges—a topic that receives insufficient attention—anti-Maduro political forces too casually comment that the FARC and ELN problem can be solved simply by working closer with the Colombian and U.S. governments. That's it. The United States and Colombia will help Venezuela rid itself of this threat, goes the belief.

But of course, it is easier said than done. Absent any additional details or context, it seems this serious problem has received little attention from opposition figures, even those few with some limited security experience. It makes it all seem that a lack of want is all that stands between Venezuela and an insurgent-free border. Moreover, it betrays frightening naiveté. The opposition seems to have a general notion of FARC and ELN presence (and at times boasts better information on ELN territorial expansion), leading them to naturally place these groups toward the very top of their notional list of future security priorities. Yet, there are few indications that serious thought has been given to what needs to be done to counter these threats. Defeating FARC and the ELN militarily or pushing them back over the border into Colombia somehow seems to be as far as the logic goes. In the absence of specifics or lacking evidence of good planning or a strategy of any kind, all that is left then is simply an expression or desire—an aspiration.

The ELN and FARC are quite good at what they do. These insurgents have operated and occupied camps in Venezuela for decades; some members have lived there their whole lives. These guerrilla strongholds in some cases predate Chavismo by up to a generation. FARC and ELN camps in Venezuela include family units comprised of entrenched populations with everything that that implies. Their presence has had a chance over time to metastasize. The ELN did it first and best, but the FARC learned quickly. Given this, it will take more than good intentions, enthusiasm, and wishful thinking to fix the problem.

The recent armed clashes along the border serve to remind everyone that the challenge posed by Colombian guerrilla groups operating in Venezuela is complicated and difficult. There is no doubt a solution will remain elusive, especially when the other dozen or so, at times greater, challenges facing the country are added to the equation. Thus, importantly, the approach to resolve it must be cogent, methodical, and reasoned. It should also be the result of a thoughtful, studied process that right-sizes the threat and then approaches it based on something more solid than what has been offered to date.

The Venezuelan military have been set up most recently for failure by its political masters. The age-old scoreboard shows that when it has come to violent encounters with Colombian armed guerrillas, the results are distressing for government forces. The Colombian insurgent presence in border states has been the top security challenge for the Venezuelan military and the civilian government going back to the 1980s, when significant resources, attention, and skilled military professionals were put on the problem. Even then, despite this special attention paid by a Venezuelan military force arguably better trained, motivated, and prepared than today's, prior governments also struggled to tally successes. This is yet another reminder that taming the insurgent problem is difficult and will require an approach that goes beyond just strictly a military one. It certainly will take a more deliberate effort to bring the problem under control based on refined planning and lots of hard work.

The problem on the border requires a blended, whole-of-government approach. A solid strategy will marry effective and well-executed counterinsurgency and counternarcotic tactics with significant central government engagement in other forms. Any government will have to provide basic needs to the local population, regardless of its makeup or nationality. Paramount is reliable access to clean drinking water, more and better schools, basic health services, reliable sources of power, and security against the myriad of border ruffians—not just the guerrillas—who threaten the lives of locals and take their few belongings. Improved infrastructure and greater state attention will help mitigate the effects of some of the root causes of instability and should respond to a concerted development strategy. Much-needed job opportunities must follow. In the end, these are generally remote areas with few options for those who do not take up illegal activity. These regions scream for a government that does more than shake them down, let them down, forget about them, and bomb them.

4. Missile defense is compatible with arms control

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War on the Rocks

<https://warontherocks.com/2021/04/missile-defense-is-compatible-with-arms-control/>

What will it take for Russia and the United States to make progress on arms control? In announcing the Biden administration's intent to extend the New Strategic Arms Reduction Treaty (START) for another five years, Secretary of State Anthony Blinken offered a hint. He noted that the next negotiation must include

all of Russian and American nuclear weapons, not just the long-range strategic systems limited by New START. Since New START was ratified in 2010, Russia has been unwilling to discuss limits on its shorter range systems. When it does address the subject, it immediately lays down a number of pre-conditions, including limitations on U.S. missile defense systems.

Some analysts suggest that the United States should place limits on its missile defense systems to entice Russia — which publicly opposes U.S. missile defense plans — back to the negotiating table. According to one recent commentary, “limiting defenses would therefore be an essential first step to constraining the nuclear arms race.” In *War on the Rocks*, Naomi Egel and Jane Vaynman recently argued that U.S. officials should “reassess whether the gains from preserving missile defense are worth the tradeoffs.”

These arguments sound reasonable enough. After all, the Russian side never misses an opportunity to register its opposition to missile defense anytime arms control is mentioned or when the United States deploys a new missile defense system at home or abroad. And there is a large body of literature stretching back to the early days of the Cold War arguing that missile defense is the leading cause of the action-reaction arms race. But is this correct in practice? Do limits on missile defense secure restraints on offensive nuclear forces? Does the United States really have to limit its homeland missile defenses as a precursor to nuclear force reductions?

The problem with offering to limit U.S. missile defense plans up front is that it allows Russia to use missile defense as a point of leverage in the talks. More importantly, the notion that limits on missile defenses are necessary to avoid arms racing and to allow progress on arms control is not supported by the historical record. In fact, Moscow and Washington have agreed to significant nuclear arms reductions even as the United States has pursued protection of its homeland from ballistic missile threats. As the Biden team begins its preparations for post-New START negotiations with Russia, it should reject any preconceived notion of what animates Russian opposition to missile defense and should certainly not offer any concessions limiting missile defense at the outset of negotiations.

History of Arms Control and Missile Defense

The historical record demonstrates that limits on missile defense do not secure restraints on offensive nuclear forces. Likewise, arms control agreements have been negotiated even after the United States has expanded its missile defense capabilities. The 1972 Anti-Ballistic Missile Treaty limited the United States and the Soviet Union to two missile defense sites in the homeland, each with 100 interceptors. One would expect this limitation on missile defenses to lead to restraints on strategic nuclear offensive forces. As it turned out, the Soviet Union added some 10,000 nuclear warheads between 1972 and 1984, while United States nuclear forces also grew. Writing in 1985, the renowned arms control theorist Thomas Schelling observed, “Since 1972, the control of strategic weapons has made little or no progress.”

Leading defense intellectuals worried that President Ronald Reagan’s 1983 Strategic Defense Initiative — which envisioned a ground and space-based comprehensive defense against Russian ballistic missiles — would torpedo arms control. McGeorge Bundy, George Kennan, Robert McNamara, and Gerard Smith argued in *Foreign Affairs* that it was “wholly impossible” to reach good arms control agreements while pursuing missile defense. Yet the Reagan administration secured the Intermediate-Range Nuclear Forces Treaty only three years later. By the time Reagan left office, his administration had all but completed negotiations on the 1991 Strategic Arms Reduction Talks (START) treaty, which reduced Soviet and U.S. deployed strategic nuclear warheads from over 12,000 each to 6,000. Clearly, the threat of Reagan’s massive space-based missile defense program did not dissuade the Soviet Union or Russia from agreeing to deep reductions in their nuclear forces.

President George W. Bush's decision to withdraw from the Anti-Ballistic Missile Treaty in 2002 was controversial. Many at the time thought the end of the treaty would stimulate a new nuclear arms race. Despite Washington's move on missile defense, Russia yet again agreed to limit its nuclear arsenal, this time as part of the Moscow Treaty, which reduced strategic nuclear arsenals from 6,000 deployed warheads under START to a new lower range of 1,700 to 2,200 deployed warheads. Faced with a potential expansion of U.S. missile defenses after withdrawing from the Anti-Ballistic Missile Treaty, the Russians nevertheless agreed to substantial nuclear reductions.

Finally, the Russians insisted upon limitations on U.S. missile defenses during negotiations leading to the 2010 New START treaty. No such limitations were written into the treaty, yet the Russians agreed to reduce their nuclear arsenal to 1,550 deployed strategic nuclear warheads. U.S. policy on missile defense has drawn criticism for other reasons. Some suggest that the withdrawal from the Anti-Ballistic Missile Treaty prompted Russia's development of new novel nuclear systems and "so began a new phase in a global arms race." Yet there may be other motives for President Vladimir Putin's introduction of these Cold War-era nuclear systems that have not altered the strategic nuclear balance.

Rose Gottemoeller, former undersecretary of state and New START chief negotiator in the Obama administration, suggests that Putin "is after nuclear weapons for another reason — to show that Russia is still a great power to be reckoned with. These exotic systems have more of a political function than a strategic or security one." Other scholars argue that Russia's domestic political situation and power struggles in and around the Kremlin account for Russia's criticism of U.S. missile defenses. If there has been a nuclear arms race since the United States withdrew from the Anti-Ballistic Missile Treaty, then it has been one-sided. Ash Carter, secretary of defense under Barack Obama, has observed, "During the past 25 years, the United States has made no major new investments in its nuclear forces, yet other countries have conducted vigorous buildups. This history does not support the contention that US investments fuel the nuclear programs of others."

Why Russia Really Opposes U. S. Missile Defense

According to official statements, Russia opposes U.S. missile defenses because they could someday provide the United States a strategic advantage during a nuclear exchange. While elements of Russia's position are no doubt genuine and rooted in its confidence in America's technological prowess, there are likely other, more compelling reasons for Russia to oppose U.S. missile defense, ones having more to do with geopolitics than nuclear strategy. In short, Moscow appreciates that it can use this issue as leverage with the United States while creating tension among its allies.

Obama understood this. In commenting about Russia's opposition to the deployment of U.S. missile defense systems in Europe, he observes in his recent book that Putin "correctly understood that the main reason Poland and the Czech Republic were eager to host our system was that it would guarantee increased U.S. military capabilities on their soil, providing an additional hedge against Russian intimidation." Russia's opposition to U.S. missile defense in Europe was not because it feared that 10 ground-based interceptors could jeopardize Russia's nuclear retaliatory capability, but rather such cooperation was an affront to Russia's former influence in Eastern Europe. Russia also viewed this as an opportunity to sow dissension among the allies.

The modernization and expansion of Russian nuclear forces has not been driven by U.S. missile defense deployments. Since pulling out of the Anti-Ballistic Missile Treaty, the U.S. has deployed a modest 44 ground-based interceptors (40 in Alaska and four in California) for the protection of the nation against North Korean intercontinental ballistic missiles. That number is projected to rise to 64 should the Biden administration follow through with plans initiated by the Trump administration. Russian leaders surely realize Russia deploys more homeland defense interceptors than the United States, and that their S-400

and S-500 air defense systems are comparable to U.S. theater missile defense systems. Finally, Putin himself has noted that by 2021, 90 percent of Russia's nuclear forces will be modernized and, in his words, "capable of confidently overcoming existing and even projected missile defense systems."

Implications for the United States

What does this mean for the Biden administration as it formulates its negotiating objectives and strategy? Most importantly, the United States should not make any concessions on missile defense as a precondition for negotiations. Instead, it should agree that these matters can be discussed along with other Russian and U.S. concerns. What then transpires during negotiations is another matter. The Biden team, I am certain, is well aware that many in Congress would oppose limitations on missile defense. But a familiar phrase in Congress is, "nothing is settled until everything is settled," which is to say we have to see all that is in play in any prospective agreement.

During negotiations, Russia no doubt will insist upon limitations and constraints on U.S. missile defenses in return for an agreement. U.S. negotiators should hear them out and then explore ways to reassure the Russian side, through technical cooperation and other confidence building measures, that U.S. missile defenses pose no threat to Russia's formidable nuclear forces. Washington should remind Russia that its growing stockpile of shorter-range nuclear weapons, not limited by New START, is impervious to U.S. homeland missile defenses.

Russia has agreed on at least three occasions to reduce its strategic offensive nuclear forces even in the face of U.S. homeland missile defense deployments. That the United States has deployed only 44 ground-based interceptors since its withdrawal from the Anti-Ballistic Missile Treaty in 2002 should provide some reassurance to Russia that U.S. missile defense procurements have been directed against rogue states such as North Korea and not against Russia. To the extent Russia fears the potential for U.S. missile defenses in the future, Moscow can take comfort from knowing that such plans will be revealed well in advance through the normal Congressional oversight process — and thus provide Russia adequate time to take evasive actions.

U.S. plans to build limited homeland missile defenses against rogue nations like Iran and North Korea, or even missile defenses deployed abroad to protect allies against such threats, should not be incompatible with future nuclear arms control agreements with Russia. To be sure, given the gamut of intractable issues, such as non-strategic nuclear weapons, space strike systems and hypersonic capabilities, the next round of nuclear arms control negotiations will not be easy. But missile defense, as history shows, will not be the deal breaker.

5. The Israeli–Gaza Clashes: A New Chapter or Same Old Story?

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RUSI

<https://rusi.org/commentary/israeli-gaza-clashes-new-chapter-or-same-old-story>

The latest chapter in the Israeli–Palestinian conflict seems to be following a depressingly familiar script. The nightly news is filled with pictures of Israelis fleeing to shelters to escape the thousands of rockets fired from the Hamas-controlled Gaza Strip. Meanwhile, Palestinians endure the full weight of Israeli airstrikes and artillery barrages in a cycle of escalation where both sides have little to gain, and much to lose.

The spark was the impending publication of verdicts on the legal status of several Palestinian families living in the East Jerusalem neighbourhood of Sheikh Jarrah, an area that religious Israeli settlers have coveted for years. Disputes over Sheikh Jarrah have triggered protests and flashes of localised violence in East Jerusalem since the mid-2000s, but the tensions have never led to mass civil unrest and conflict before.

WHY NOW?

There are many reasons as to why the situation has spiralled rapidly out of control. Political stagnation and governmental dysfunction in both Israel and the Palestinian territories have been a source of growing frustration for all sides, meaning that important questions about solving the conflict have largely been ignored in favour of internal politicking.

This along with the severity of the coronavirus pandemic has meant that fewer people have been paying attention – both internally and externally – and therefore the tell-tale signs that tensions were rising have gone unnoticed. It has also not helped that tensions began during the holy month of Ramadan and the Eid al-Fitr holiday period, which have emphasised the importance of the holy places perhaps more than is usual. All of these factors have combined to produce a toxic mix which has led to Hamas and the Israel Defense Forces exchanging fire. More worryingly, it has been the cause of mass outbreaks of violence across towns and cities in Israel, as gangs of Arabs and Jews attack each other with clubs, knives and even automatic weapons. The surfacing of multiple videos showing civilians being pulled out of cars or randomly set upon by mobs has shocked the wider Israeli body politic.

DEEP WOUNDS, DEEPER QUESTIONS

The indiscriminate targeting of civilians inside Israel by Hamas rockets has fuelled a sense of defiance and indignation among Jewish Israelis, who largely support their government's forceful response against Hamas. But the usual emotional response mechanism which allows Israelis to cope with living in a country under fire has failed to help many process the scenes of civil disorder and internal strife. Moreover, it is especially painful that many of the perpetrators have not been Palestinians, but Jews.

In a bid to restore calm, Israeli Prime Minister Netanyahu uploaded a video promising firm action against rioters, stating 'this is anarchy... this is not who we are'. That may be so, but serious questions need to be asked about the health of Israeli civil society after this latest round of violence. In the endless cycle of elections that Israel has experienced in the past three years, a number of senior politicians have tried to one-up each other with nationalist bombast and dismissive statements about Israel's Arab minority. Israel's continued political instability was always going to cost the country at some point, and it appears that cost is finally beginning to be felt.

Quite how the country can patch up its differences is unclear, but it has been heartening to see Israelis of all stripes engaging in public displays of reconciliation, and holding vigils to promote coexistence in the face of provocations from more extreme factions. Israel's population will hopefully move on from what has been a shocking moment, but the scars will be long-lasting.

THE FIGHT FOR THE PALESTINIANS' ALLEGIANCE

And what of the Palestinians? At the time of writing it is hard to know how the cycle of violence in Gaza will pan out. The Israel Defense Forces have feigned troop deployments into Gaza, but have so far held back from launching a major ground assault, preferring to target the Strip from the air and with artillery barrages. Every hour that passes, casualties rise and the possibility of a ceasefire appears to diminish. This is despite intense diplomatic efforts from Egypt, Qatar and a number of Western countries. Whether the conflict escalates or a ceasefire is agreed, either way, Hamas will try to paint itself as the victor. In truth,

simply surviving as a political entity in the face of a far stronger opponent can be considered by Hamas to be a victory.

But Israel aside, neither Hamas nor the Palestinian Authority in the West Bank have full control over the situation any longer. The rioting and violence inside Israel might initially have worked to Hamas's benefit, but they portend wider shifts within the Palestinian population. It has been common in recent times to hear talk of Palestinian factionalism: that Gazans struggle to identify with Palestinians in the West Bank, who in turn understand little of the lives of their cousins living in Israeli cities like Haifa and Nazareth.

While the Israelis have had far too many elections, the Palestinians have had far too few, and in place of this stagnation, young Palestinians have shown that their ability to organise outside of traditional political lines is growing. There seems to be a renewed sense of solidarity among the disparate parts of the Palestinian population living between the Jordan River and the Mediterranean, and the escalation that started in Sheikh Jarrah has revealed that younger Palestinians do not need Hamas or Fatah in order to express themselves as Palestinians and engage in acts of 'resistance'.

And so, while the scenes may be familiar, there is no doubt that this current round of escalation is providing evidence of a socio-political shift, both inside Israel and among the Palestinians. Doubtless, both Israelis and Palestinians want to see a resolution to the political quagmire that both sides find themselves in, and once the violence has eventually calmed, this might be the moment in which the failed politics of both peoples begins to change.

6. Defense Primer: Army Multi-Domain Operations (MDO)

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CRS

<https://crsreports.congress.gov/product/pdf/IF/IF11409>

As an operational concept, Multi-Domain Operations (MDO) influence what types of weapon systems and equipment the Army procures, what types and numbers of soldiers are needed, and what type of training is required— significant legislative concerns for Congress. In this regard, an understanding of MDO could prove beneficial for congressional oversight activities.

What Are Multi-Domain Operations (MDO)?

According to the U.S. Army's Training and Doctrine Command (TRADOC): Multi-Domain Operations (MDO) describes how the U.S. Army, as part of the joint force [Army, Navy, Air Force, and Marines] can counter and defeat a near-peer adversary capable of contesting the U.S. in all domains [air, land, maritime, space, and cyberspace] in both competition and armed conflict. The concept describes how U.S. ground forces, as part of the joint and multinational team, deter adversaries and defeat highly capable nearpeer enemies in the 2025-2050 timeframe.

MDO provides commanders numerous options for executing simultaneous and sequential operations using surprise and the rapid and continuous integration of capabilities across all domains to present multiple dilemmas to an adversary in order to gain physical and psychological advantages and influence and control over the operational environment.

Why Did the Army Adopt MDO?

MDO is described in detail in a December 2018 Army publication titled *The U.S. Army in Multi-Domain Operations 2028*. MDO was developed in response to the 2018 National Defense Strategy, which shifted the previous focus of U.S. national security from countering violent extremists worldwide to confronting revisionist powers— primarily Russia and China—that are said to “want to shape a world consistent with their authoritarian model—gaining veto authority over other nations’ economic, diplomatic, and security decisions.” According to *The U.S. Army in Multi-Domain Operations 2028*: China and Russia exploit the conditions of the operational environment to achieve their objectives without resorting to armed conflict by fracturing the U.S.’s alliances, partnerships, and resolve. They attempt to create stand-off through the integration of diplomatic and economic actions, unconventional and information warfare (social media, false narratives, cyber-attacks), and the actual or threatened employment of conventional forces. By creating instability within countries and alliances, China and Russia create political separation that results in strategic ambiguity reducing the speed of friendly recognition, decision, and reaction. Through these competitive actions, China and Russia believe they can achieve objectives below the threshold of armed conflict. Army leadership believes that if the Army—in conjunction with the other Services—prevails in these “competitions” in all “domains,” that U.S. national security objectives should be achieved.

How MDO Is Intended to Work

The Army’s central idea is to prevail by competing successfully in all domains short of conflict, deterring a potential enemy. If deterrence fails, Army forces—along with the Joint Force—are to do the following: Penetrate enemy anti-access and area denial (A2/AD) systems (layered and integrated long-range precision-strike systems, littoral anti-ship capabilities, air defenses, and long-range artillery and rocket systems) to enable strategic and operational maneuver of U.S. forces.

Dis-integrate—disrupt, degrade, or destroy enemy antiaccess and area denial systems to enable operational and tactical maneuver of U.S. forces.

Exploit the resulting freedom of maneuver to achieve operational and strategic objectives by defeating enemy forces in all domains.

Re-compete—consolidate gains across domains and force a return to competition on favorable terms to the United States and allies.

How Will MDO Change the Organization of the Army?

As part of the release of *The U.S. Army in Multi-Domain Operations 2028*, an Army official described to the media that specific Army echelons will be given different “problems” to address under MDO. Existing Divisions and Corps will be tasked with fighting and defeating specific components of the enemy’s system. As such, the Army will no longer organize or center itself on Brigade Combat Teams (BCTs) as it did under previous National Defense Strategies. Under the previous BCT-centered organizational construct, Divisions and Corps had a limited warfighting role, but under MDO, Divisions and Corps headquarters are to return to their historic warfighting roles, in which they employed subordinate units and allocated Corps- and Division-level assets to support subordinate units.

According to the online magazine *Breaking Defense*, MDO calls for the creation of Field Armies, an intermediate command level between already established Theater Armies—such as U.S. Army Pacific (USARPAC) or U.S. Army Europe (USAREUR)—and Corps. While one Field Army currently exists—the U.S. 8th Army in Korea—it is not known how many more Field Armies are envisioned under MDO, where they

would come from within Army force structure, and where they might be stationed. These Field Armies would supposedly be capable of commanding multiple Corps against near-peer threats.

The Army's Way Ahead

Army leaders reportedly note that MDO will not only have an impact on Army organizations and operations; it will drive Army modernization efforts as well, in terms of development and acquisition of supporting capabilities and systems. Army leadership seeks to have MDO become a joint, multiservice operational concept instead of Armycentric.

Project Convergence

Started in the summer of 2020, Project Convergence is a new Army initiative designed to rapidly merge the Service's capabilities with Joint Force assets in the air, land, sea, space, and cyber domains. The Army currently plans to conduct Project Convergence in 2021 and 2022 and potentially beyond 2022 as well. Project Convergence is intended to inform and test MDO concepts, technologies, force structures, and procedures, not just within the Army, but as they also relate to the other Services, as well as Allies and Partner Nations. (For additional information on Project Convergence, see CRS In Focus IF11654, *The Army's Project Convergence*, by Andrew Feickert.)

AimPoint Force Structure Initiative

The primary means by which the Army intends to build its MDO capability is through what it calls the AimPoint Force Structure Initiative. According to the Army, the AimPoint Force is to be a flexible force structure. While little change is expected at brigade level and below, the Army suggests major changes will occur at higher echelons—division, corps, and theater command—that have primarily played a supporting role in counterinsurgency operations such as those in Iraq and Afghanistan. Under MDO, higher field headquarters will now be required to take the lead in coordinating large-scale campaigns against well-armed nation-states such as Russia and China. The Army also notes that the AimPoint Force will be resource-informed, meaning it will be subject to budget constraints and political considerations. Because of the geographic distinctions between the European and Indo-Pacific theaters, individual higher-echelon AimPoint formation force structure will likely differ by theater as opposed to current one-size-fits-all units.

As an example, the Army plans to create five Multi-Domain Task Forces (MDTFs): two aligned to the Indo-Pacific region; one aligned to Europe; one stationed in the Arctic region and oriented on multiple threats; and a fifth aligned for global response. MDTFs are to be theater-level units intended to coordinate effects and fires in all domains against A2/AD networks so U.S. Joint Forces can conduct their operational plan (OPLAN)-directed roles. (For additional information on the Army's AimPoint Force Structure Initiative, see CRS In Focus IF11542, *The Army's AimPoint Force Structure Initiative*, by Andrew Feickert.) (For additional information on MDTFs, see CRS In Focus IF11409, *Defense Primer: Army Multi-Domain Operations (MDO)*, by Andrew Feickert.)

The Need for a Joint MDO Doctrine?

Some suggest a shared vision among the Services on multidomain operations is insufficient and a joint doctrine for MDO is needed. Such a joint MDO doctrine could compel the Services to adopt a coordinated approach to MDO and ensure corresponding investments are made in systems needed to successfully prosecute MDO. The last joint doctrine, *Doctrine for the Armed Forces of the United States (JP-1)*, was published in 2013 and updated in 2017, but this update does not fully take into account the current National Security or National Defense Strategies' emphasis on great power competition. Reportedly, a new

Joint Warfighting Concept is in the final stages of development and is expected to be given to DOD leadership this year.

How the Army Intends to Compete

Arguably, competition is a critical aspect of MDO because, if it is conducted successfully, conflict might be avoided. According to U.S. Army Chief of Staff Paper #2, The Army in Military Competition, dated March 1, 2021, the Army competes in three ways:

Narrative Competition, which is reflected in the rise and fall of a country's reputation based on general perceptions of its strength, reliability, and resolve. The Army contributes by being a lethal, competent, credible force and being recognized as such by allies and partners, as well as by adversaries.

Direct Competition, which encompasses the full range of competitive activities, from the lowest intensity competition below armed conflict through general state conflict. In direct competition, the objective is to create leverage for the United States and to deny it to the adversary.

Indirect Competition, in which the objective is to gain advantage (or deny it to the adversary). This objective is in contrast to the more forceful concept of leverage in direct competition. The Army contributes by offering a range of credible (low- and moderate-intensity and risk) options for policymakers. Some of these options include activities such as overseas exercises, security cooperation, security force assistance, military-to-military exchanges, overseas basing, intelligence sharing, and disaster relief. In this regard, indirect competition is not a "new" operational concept but instead more along the lines of a redesignation of traditional activities short of armed conflict.

7. Chinese Nuclear and Missile Proliferation

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CRS

https://www.rand.org/pubs/research_reports/RRA106-1.html

The U.S. government has continued to express concerns about China's record concerning the proliferation of nuclear- and missile-related technologies to other countries, with more recent focus on the threat of Chinese acquisition of U.S.-origin nuclear technology. (See CRS In Focus IF11050, New U.S. Policy Regarding Nuclear Exports to China, by Paul K. Kerr and Mary Beth D. Nikitin.) Official U.S. government reports indicate that the Chinese government has apparently ended its direct involvement in the transfer of nuclear- and missile-related items, but Chinese-based companies and individuals continue to export goods relevant to those items, particularly to Iran and North Korea. U.S. officials have also raised concerns about entities operating in China that provide other forms of support for proliferation-sensitive activities, such as illicit finance and money laundering.

Background

China did not oppose new states' acquisition of nuclear weapons during the 1960s and 1970s, the Department of State wrote in a declassified January 1998 report to Congress. According to a 1983 National Intelligence Estimate (NIE), China had exported "nuclear materials since 1981" that were not subject to International Atomic Energy Agency (IAEA) safeguards. Beijing did so "mainly to earn hard currency," the

estimate assesses, explaining that the Chinese became aware in 1979 that they had insufficient resources for their initially grandiose modernization program and that they needed to generate more revenue through expanded foreign trade. Accordingly, the State Council directed its subordinate ministries in late 1979 to begin selling surpluses. Consequently, according to the NIE, Beijing ended its “abstention from commercial trade in conventional arms and nuclear materials.” During the 1980s and 1990s, China transferred nuclear and missile technology to other countries’ weapons programs. China provided assistance to Pakistan’s nuclear weapons program and engaged in nuclear cooperation with Iran. Beijing exported missiles to Pakistan, Saudi Arabia, and Iran. (For more information, see CRS Report RL33192, U.S.-China Nuclear Cooperation Agreement, by Mark Holt, Mary Beth D. Nikitin, and Paul K. Kerr.)

According to U.S. government reports and official statements, China also significantly curtailed its nuclear and missile-related transfers during the 1990s; Beijing also committed to improving its export controls. For example, the 1998 State Department report cited above noted China’s 1996 pledge to refrain from assisting unsafeguarded nuclear facilities and 1997 changes to Chinese nuclear export policy, as well as other Chinese nonproliferation efforts. The United States has extensive nuclear cooperation with China, which is governed by a civil nuclear cooperation agreement, renewed in 2015. (See CRS Report RL33192, U.S.-China Nuclear Cooperation Agreement.)

The above-described changes in Chinese behavior took place after the two governments concluded their first nuclear cooperation agreement in 1985. Laws subsequently adopted by Congress required, as a condition for U.S. implementation of the agreement, the President to submit to Congress certain nonproliferation-related certifications, as well as a report about Beijing’s “nonproliferation policies and practices.” President William Clinton stated in a January 1998 letter to Congress that China had “made substantial strides in joining the international nonproliferation regime, and in putting in place a comprehensive system of nuclear-related, nationwide export controls,” since concluding the 1985 agreement.

Beijing acceded in 1992 to the Nuclear Nonproliferation Treaty (NPT) as a nuclear-weapon state (NWS) and has voluntary IAEA safeguards on its civil reactors. The treaty defines NWS as those that exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967: China, France, Russia, the United Kingdom, and the United States. All other NPT states-parties are nonnuclear-weapon states. According to the treaty, a NWS is not to transfer nuclear weapons to “any recipient whatsoever” or to “in any way ... assist, encourage, or induce any” nonnuclear-weapon state “to manufacture or otherwise acquire nuclear weapons.”

China is also a participant in the Nuclear Suppliers Group (NSG)—a multilateral control regime for nuclear-related exports. The Missile Technology Control Regime (MTCR) performs an analogous function for missiles and related items. China is not an MTCR partner but has agreed to adhere to the regime’s export guidelines.

The Chinese government continues to express support for the international arms control and nonproliferation regime. According to a July 2019 Chinese government publication titled China’s National Defense in the New Era, “China actively participates in international arms control, disarmament and non-proliferation” and “objects to arms race and strives to protect global strategic balance and stability.” Similarly, Fu Cong, Director General of the Department of Arms Control of China’s Ministry of Foreign Affairs, stated during the December 9-10, 2020, 16th Asian Senior-Level Talks on Non-Proliferation that “China is ready to enhance non-proliferation policy exchanges and cooperation with all countries, including the incoming U.S. administration.”

Current Proliferation Concerns

As noted, official U.S. government reports indicate that the Chinese government has apparently ceased direct involvement in nuclear-related proliferation and transfers of complete missile systems. However, Chinese entities have continued to engage in proliferation, and the U.S. government has repeatedly expressed concerns with regard to weaknesses in China's export control system. According to a 2019 Department of State report regarding states' compliance with nonproliferation and arms control agreements, "Chinese entities" continued in 2018 "to supply MTCR-controlled items to missile programs of proliferation concern, including those in Iran, North Korea, Syria, and Pakistan." The United States also "raised a number of [other] cases with China concerning" Chinese entities' missile technology transfers to "programs of concern" in those same countries, according to the report, which added that, despite U.S. requests for Beijing to "investigate and put a stop to such activities, most of these cases remain unresolved." The 2021 version of the report states only that "Chinese entities continued to supply MTCR-controlled goods to missile programs of proliferation concern in 2020." Editions of the report published in 2016, 2017, 2018, and 2020 contain similar language.

The United States has continued to sanction Chinese entities for proliferation. For example, on November 25, 2020, the State Department imposed sanctions on two Chinese entities "for transferring sensitive technology and items to Iran's missile program," according to then Secretary of State Michael Pompeo. In August 2017, the Department of the Treasury blocked U.S. assets of, and prohibited transactions with, a Chinese coal company for allegedly using foreign exchange generated from the sale of North Korean coal to purchase "nuclear and missile components" for North Korea.

Regarding government involvement in these sorts of transfers, former Deputy Assistant Secretary of State Vann Van Diepen told Politico in 2017 that, even if the transfers are not directly state-sponsored, "China hasn't devoted the priority, effort, or resources to thwart" such activity, adding that "when that continues to be the case over 20 years, even when they have been criticized, over time it becomes a choice, and you have to wonder what's going on."

U.S. officials have described other concerns with regard to Chinese proliferation behavior, such as money laundering, the provision of illicit financial services, and illegitimate procurement by entities operating within China. According to a 2018 Department of the Treasury report, "Chinese entities and individuals" have engaged in proliferation financing activities "for the benefit of" Iranian and North Korean weapons of mass destruction (WMD) programs. A 2017 Department of the Treasury report similarly assesses that North Korea uses and maintains a network of financial representatives, primarily in China, who operate as agents for North Korean financial institutions ... these representatives orchestrate schemes, set up front or shell companies, and manage surreptitious bank accounts to move and disguise illicit funds, evade sanctions, and finance the proliferation of North Korea's WMD and ballistic missile programs.

Then-Deputy Assistant Secretary of State Alex Wong asserted during a November 2020 speech that "China hosts no less than two dozen North Korean WMD and ballistic missile procurement representatives and bank representatives." China has flouted UN Security Council resolutions' requirements to expel such representatives, Wong claimed, adding that the United States has "provided China with ample actionable information on the ongoing UN-prohibited activities occurring within its borders," but Beijing "has chosen not to act."

Media outlets have reported that China is assisting in the construction of facilities in Saudi Arabia for possible uranium production. When asked about the topic during a September 2020 Senate Committee on Foreign Relations hearing, Under Secretary of State for Political Affairs David Hale declined to provide any information, citing classification concerns.

China's construction of civil nuclear reactors in Pakistan has been another source of congressional concern; the United States has argued that the projects violate Beijing's NSG commitments. China has constructed

four power reactors in Pakistan and is constructing two additional such reactors. Pakistan has IAEA safeguards agreements in force for all of these reactors. However, the NSG guidelines prohibit such projects in states, such as Pakistan, which lack IAEA safeguards on all of the country's nuclear facilities. Islamabad's nuclear weapons facilities are not safeguarded.

The United States argues that only the first two reactor projects are consistent with China's NSG commitments; Beijing and Islamabad concluded contracts for these reactors before China joined the NSG in 2004. At that time, other NSG members agreed to "grandfather" only ongoing Chinese reactor projects in Pakistan, then-Assistant Secretary of State Thomas Countryman said during a May 2015 Senate Foreign Relations Committee hearing.

8. Chinese PLA Deploys PHL-03 Long-range Multiple Rocket Artillery in Tibet

10.05.2021

Defense World

https://www.defenseworld.net/news/29538/Chinese_PLA_Deploys_PHL_03_Long_range_Multiple_Rocket_Artillery_in_Tibet#.YLKqzqhKiUI

A Chinese People's Liberation Army (PLA) unit of Xinjiang Military Command deployed the country's latest PHL-03 long-range multiple rocket launcher (MRL) artillery system in Tibet. At least 10 units were delivered at a commissioning ceremony Saturday, along with other eight vehicles for command & control and communications.

A report in semi-official Global Times said that the PLA Unit deployed to a high-altitude plateau (read Tibet) recently replaced its outdated artillery with digital, long-range heavy rocket artillery, greatly enhancing its all-weather combat capability in the border region. The unit, currently deployed in a snow-covered region at an elevation of more than 5,200 meters, recently received a batch of new self-propelled heavy rocket launchers, which are mobile, fast-reacting and highly accurate besides being jamming-resistant, its said quoting China Central Television (CCTV).

The new MRL artillery will be deployed for missions like seizing and control of key regions, and group assault in high-altitude terrains and deserts as well as close to rivers and lakes, under all weather conditions, the report said. The PHL-03, a 12-tube 300mm MRL. According to media reports, the PHL-03 is based on the Russian BM-30 Smerch and includes technology provided by the Russians for its launch system, trajectory control system besides rockets and warheads.

The PHL03 mounted MRL and vehicle has an overall combat weight of 43 tons. The vehicle is 12 meters in length, 3 meters in width and 3 meters in height. It is based on a Wanshan WS2400 8x8 special wheeled chassis and has a 500 horsepower diesel engine. The maximum road speed of the vehicle is 65 km / h with 850 kilometers range. The maximum range of its basic rocket shell is 70 kilometers with salvo time of 38 seconds and the refill time is 20 minutes. Chinese PLA reported that improved rocket shells were also developed with the maximum range of 150 kilometers.

Each vehicle is capable of launching 24 rocket shells continuously and a combat unit can continuously fire 96 to 144 shells, covering the range of about 2 square kilometers. Global Times said that the commissioning of the new artillery system comes with the arrival of spring to Southwest China's high-altitude border regions, as the harsh cold season withers away. Previous border conflicts often started in this time of the

year. The new weapons system shows that China is prepared to safeguard its territorial integrity at all times, the publication said quoting “observers.”

9. Worldwide Military Spending Grew 2.6% in 2020 Despite 4.4% COVID-led Decrease in Global GDP

26.05.2021

Defense World

https://www.defenseworld.net/news/29434/Worldwide_Military_Spending_Grew_2_6__in_2020_Despite_4_4__COVID_led_Decrease_in_Global_GDP#.YLKrQahKiUI

Even as global GDP dropped by 4.4% owing to the coronavirus pandemic last year, the world continued decade-long trend of buying more weapons. As per a report compiled by Stockholm International Peace Research Institute (SIPRI), worldwide military spending last year rose 2.6% compared to 2019 figures, reaching \$1.981 trillion. The United States (\$778 billion or ~39% of global total), China (\$252 billion), India (\$72.9 billion), Russia (\$61.7 billion), and the United Kingdom (\$59.2 billion) are named among those nations with the largest military budgets.

Military expenditure by the top 15 countries reached \$1.603 trillion in 2020 and accounted for 81% of global military spending. There were some changes in the composition and rank order of the top 15 between 2019 and 2020. Most notably, Israel entered the top 15 in place of Turkey, and the U.K. moved above Saudi Arabia—whose military spending fell by 10%—to become the fifth largest spender in 2020. The report notes that the growth occurred amid a significant 4.4% decrease in global GDP, caused mainly by the pandemic, with the global military burden (as a share of global GDP) reaching 2.4 percent, and breaking the previous record of 2.2 percent. This is the highest military expenditure since the severe financial crisis of 2008-9.

The main drivers of the increases in U.S. military spending in recent years were perceived threat from strategic competitors such as China and Russia and the push by former US President Donald J. Trump to build up what he saw as a depleted military, the SIPRI report said. China’s military expenditure has increased for 26 consecutive years. This growth is the result of China’s long-term military modernization and expansion process. According to China’s Ministry of National Defense, the increase in 2020 was in part motivated by perceived threats to China’s national security related to ‘power politics’. At \$72.9 billion, India’s military spending in 2020 was 2.1% higher than in 2019. This increase can be largely attributed to India’s ongoing conflict with Pakistan over Kashmir and renewed border tensions with China, as well as India’s more general rivalry with China as the main regional power in Asia and Oceania. While COVID-19 did not have a significant impact on global military spending in 2020, some countries such as Brazil and Russia allocated significantly less funds for military purposes than originally planned. Russia’s military expenditure was \$61.7 billion in 2020, 2.5% higher than in 2019. Although its military spending grew overall in 2020, the actual amount spent was 6.6% lower than its initial military budget. China’s increase in military spending of 76% was by far the largest among the top 15 over the decade 2011–20. Other top 15 countries with substantial increases between 2011 and 2020 were South Korea (41%), India (34%), Australia (33%) and Israel (32%).

Military expenditure by North Atlantic Treaty Organization (NATO) members totalled \$1103 billion in 2020. Six of the top 15 military spenders are members of NATO: the USA, the UK, Germany, France, Italy and

Canada. Together, these six accounted for 90% (\$995 billion) of total NATO spending and 50 per cent of global military expenditure. Among the top 15 spenders, the military burden increased between 2019 and 2020 in all countries except China. The GDPs of almost all the countries in the world decreased in 2020 largely as a result of the economic impact of the COVID-19 pandemic. In most countries this led to an increase in the military burden irrespective of whether their military spending rose or fell in 2020. The most notable increases in military burden among the top 15 spenders in 2020 included Saudi Arabia (+0.6 percentage points), Russia (+0.5 percentage points), Israel (+0.4 percentage points) and the U.S. (+0.3 percentage points).

10. Biden's Next Steps on North Korea Contain a Dose of Realism

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<https://carnegieendowment.org/2021/05/06/biden-s-next-steps-on-north-korea-contain-dose-of-realism-pub-84485>

The administration of U.S. President Joe Biden has concluded its North Korea policy review and offered the public a glimpse of its rough dimensions. Like its predecessors, the full content of the administration's policy review will likely remain classified, so for now analysts are reading between the lines. The administration's limited on-the-record descriptions of its policy and secondary reporting in the press suggest cause for measured, cautious optimism about the prospects for managing the challenge of a nuclear-armed North Korea. Structural factors and North Korea's own policy, however, leave cause for pessimism.

SHADES OF DENUCLEARIZATION

Early scrutiny of the review's outcome has largely focused on the exegesis of a three-paragraph statement released by White House Press Secretary Jen Psaki on April 30. Psaki clarified that the administration's desired end state "remains the complete denuclearization of the Korean Peninsula." Biden offers continuity with his predecessors going back to former president Bill Clinton, whose administration adopted "denuclearization of the Korean Peninsula" as the basis for U.S. policy on North Korea after the governments of South Korea and North Korea adopted the phrase in a 1992 joint declaration. (The founder of the North Korean regime, Kim Il Sung, had used the phrase earlier still.)

Unlike former U.S. president Donald Trump, whose administration sought the "final, fully verified denuclearization" of North Korea, the new formulation simply prefixes this familiar term with the addition of "complete." The distinction is subtle, but it appears to create daylight in how North Korea and the United States might each interpret that phrase. The interpretative space inherent in the phrase "denuclearization of the Korean Peninsula" continues to serve as a useful entry point for negotiations for the two countries—and for South Korea—despite the tremendous qualitative advancements and quantitative growth in North Korea's nuclear forces in recent years.

While Pyongyang and Washington might agree on little else, their shared acceptance of this language dates back to 1993. More recently and most importantly, "complete denuclearization of the Korean Peninsula" is the phrase that appears in the June 2018 joint statement from the Singapore summit—the sole U.S.–North Korea document that bears Kim Jong Un's signature. Even as denuclearization, however the term is defined, appears to be a vanishingly small prospect in the near term, the administration's decision to frame its policy around this phrase suggests a preference for incremental change in the U.S. approach.

Relatedly, the Biden administration appears to have rejected the more specific phrase “denuclearization of North Korea” and its variants. North Korea views this phrase as tantamount to a call for its unilateral disarmament and has never endorsed any document or agreement containing this language. The Biden administration used this phrase and “denuclearization of the Korean Peninsula” interchangeably in February and March 2021, but it appears now to have settled on terminology that augurs better for prospective diplomacy.

BEYOND DENUCLEARIZATION

Despite the Biden administration’s adoption of a familiar framing for its desired, aspirational end state on the Korean Peninsula, a dose of reality appears to have imbued the outcome of the policy review. Psaki emphasized that the new policy “calls for a calibrated, practical approach that is open to and will explore diplomacy with [North Korea].” This “practical approach” is designed to “make practical progress that increases the security of the United States, our allies, and deployed forces.”

Ever since the 2002 collapse of the Agreed Framework—the Clinton administration’s 1994 deal with Pyongyang that froze plutonium production—and North Korea’s decisive exit from the Nuclear Non-Proliferation Treaty (NPT) in early 2003, three successive U.S. administrations have found it difficult to abandon the perfect (total North Korean disarmament) in search of the good (restraints on North Korea’s arsenal that reduce the potential for nuclear conflict). As a result, the boldest component of the new policy appears to be its acknowledgment that desirable improvements to U.S. and allied security are possible short of North Korea’s complete disarmament. To stymie critics of diplomacy, the Biden administration has been careful not to explicitly frame its policy as including an openness to traditional arms control with North Korea or even more general nuclear risk reduction—a subcomponent of arms control, which might include open-ended, informal confidence-building steps.

To skeptics of engagement with North Korea, arms control has little utility because North Korea is not a worthy counterpart and the threat it presents might be managed through nuclear and conventional deterrence alone. Opponents of nuclear risk reduction similarly fear that heading down this road may end up legitimating North Korea’s possession of nuclear weapons or undermining U.S. alliances with South Korea and Japan. Yet the Biden administration deserves credit for not entirely succumbing to these skeptical voices and carefully leaving the door ajar for a phased, open-ended, and piecemeal approach to managing the growing dangers of North Korea’s ever more complex nuclear capabilities.

Though the retention of the “denuclearization of the Korean Peninsula” language implies a nonproliferation framing for U.S. policy, the Biden administration implicitly appears to be acknowledging that the burdens of nuclear deterrence with North Korea demand practical risk reduction. Where the administration’s policy constitutes a more radical departure from the past is in its acknowledgment that the United States, South Korea, and even Japan can realize practically beneficial negotiated outcomes with North Korea short of its complete disarmament.

WHERE TO NEXT?

Unfortunately, however ajar the door may be, Kim has agency of his own. While he may have signed a declaration in 2018 that outlined an aspirational goal to work toward the very same end state the Biden administration has now endorsed, that is neither necessary nor sufficient for progress in the near term. Kim’s own version of a policy review earlier this year suggested a profoundly different approach. At the Eighth Party Congress of the Workers’ Party of Korea, he outlined a dramatically ambitious plan for nuclear and conventional military modernization. North Korea has resumed the testing of ballistic missiles and is likely to continue doing so through the rest of this year—not exclusively or primarily to prod the Biden administration but to advance its capabilities in ways that it feels necessary for its own deterrence needs.

Pyongyang excels at the exegesis of U.S. policy pronouncements but likely will not find the Biden administration's North Korea statements to date impressive. The North Korean foreign ministry has already lambasted Biden's description of North Korea as a "serious threat" during his address to Congress last weekend and promised "corresponding measures." North Korea will likely say more about what it considers the United States' "hostile policy" in the meantime. That phrase refers to everything from U.S. extended deterrence in Northeast Asia to support for economic sanctions on North Korea and much more. The Biden administration's apparent decision to place greater emphasis than the Trump administration did on North Korean human rights in its policy review has and will continue to irk Pyongyang, making an opening on denuclearization diplomacy more challenging.

For Kim, nuclear weapons will remain the cornerstone of his country's national defense strategy. North Korea's basic ask of the United States remains much the same as it was in the months between the 2018 Singapore and the 2019 Hanoi summits: large-scale sanctions relief, accompanied by a secondary package of security guarantees. While Kim has an interest in maintaining stable deterrence with the United States, his level of interest in practical risk reduction may not correspond to that of Washington, Seoul, and Tokyo. North Korea can usefully manipulate risk to build pressure of its own on the United States—as it did in 2003 by leaving the NPT, in 2006 by testing a nuclear device, and in 2017 by unveiling its thermonuclear weapon and intercontinental ballistic missiles. However ajar a U.S. president might choose to leave the door, North Korea has seen benefits in simply blasting the door open by manufacturing a crisis that builds political and diplomatic pressure to act.

These realities are important for U.S. policymakers to remember as they try to convert the outcome of this policy review into real progress. Structurally, conditions today appear to be similar to where they stood toward the end of former president Barack Obama's first term, when North Korea faced food shortages and U.S. negotiators were able to broker a short-lived, misunderstood "food-for-freeze" agreement. This Leap Day Deal—announced on February 29, 2012—collapsed quickly amid a divergence in U.S. and North Korean interpretations of whether the agreement's freeze component extended to satellite launches. The Biden administration would err if it simply left progress on improving U.S. and allied security interests on the Korean Peninsula "up to North Korea." Despite the administration's exhortations that it won't repeat its predecessors' mistakes, this would be a recipe for failure.

Like much of the world, North Korea is reeling from the economic effects of the coronavirus pandemic, compounded by comprehensive economic sanctions imposed by the UN Security Council. Pyongyang also faces demons of its own making, with Kim's economic mismanagement having wrought apparent devastation on ordinary North Koreans. These crises present opportunities for the Biden administration to show North Korea that it can engage in good faith and seize on one other component of the 2018 Singapore declaration, namely, establishing "new [U.S.–North Korea] relations in accordance with the desire of the peoples of the two countries for peace and prosperity." The more difficult work—on reducing nuclear risks and improving U.S. and allied security interests—can then follow.

11. New Tools, Old Tricks: Emerging Technologies and Russia's Global Tool Kit

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Carnegie

<https://warontherocks.com/2021/04/democracy-and-grand-strategy/>

How will the Kremlin's tool kit evolve as emerging technologies like artificial intelligence, machine learning, and deepfake forgeries become more widespread?

Russia has long struggled to overcome the constraints imposed by the country's chronic inability to retain talent in support of homegrown innovation and R&D. That reality may consign it to a follower role in the technological realm. Russia's global activism continues to lean heavily on tried-and-true tactics and capabilities that are popping up more frequently in a variety of far-flung venues. The blatant and often sloppy nature of such efforts suggests the Russian leadership believes that even adverse publicity helps strengthen Moscow's claim to the status of a global power.

Part of what makes the Kremlin's current calling cards easier to spot—and more difficult to counter or deter—is a remarkable indifference to their knock-on effects. Present-day Russian cyber and influence campaigns are capable of doing a lot of damage—even if they can also sometimes be quite clumsy or fail to advance Russian strategic objectives. At the same time, Russia's operators are likely to remain highly technically capable and to make their mark by being operationally aggressive rather than by pioneering major technological advances.

INTRODUCTION

Russia's decline and technological backwardness have been touchstones for Western analyses and threat perceptions for centuries. The notion that it could not possibly compete head-to-head with more advanced countries has frequently provided false comfort to Western leaders. Even today overstated assessments of the fragility of the Russian economy encourage wishful thinking that the Kremlin will eventually come around and see the benefits of a more stable and cooperative relationship with the outside world.

In the wake of Russia's undeclared war against Ukraine in 2014 and interference in the 2016 U.S. presidential election, a common reverse of such thinking has taken hold in some Western policy and analytical circles, focusing on the Kremlin as a larger-than-life, all-powerful adversary that cunningly generates many of the ills that have befallen the West. As the cyber and disinformation expert Thomas Rid has warned, "The Kremlin's rulers are particularly adept at gaming elements of this new age, or at the very least are good at getting everyone to talk about how good they are, which could be the most important trick of all." A closer look at Russia's capabilities, intentions, and recent behavior, along with an examination of its likely path of development, tell the story of something in-between. To be sure, the dark arts practiced by the Russian security establishment have rattled much stronger adversaries like the United States. With Russia's ambitions becoming increasingly global, many of these tactics are now being utilized in various parts of Europe, the Balkans, the Middle East, sub-Saharan Africa, and Latin America.

At the same time, though, Russia's global tool kit has not evolved all that much. Time and again, it tries out the same approaches in different regions, with varying results. For the most part, Moscow leverages the cultivation of high-level political and diplomatic relationships, arms sales, intelligence cooperation, security assistance and military training, propaganda and disinformation, energy and commercial opportunities involving Russian private and state-sector players, debt forgiveness, and using proxies. Many of the Kremlin's current approaches to global competition have clear analogues in the Cold War struggle with the United States in the developing world. Yet part of what makes the Kremlin's current calling cards easier to spot—and more difficult to counter or deter—is a remarkable indifference to the knock-on effects of its behavior. Present-day Russian cyber and influence campaigns are capable of doing a lot of damage—even if they can also sometimes be clumsy or fail to advance Russian strategic objectives (and even if some of that damage stems from U.S. misperceptions or mis-reactions to Russian activity). Russia's operators are highly technically capable, but more than that they are operationally aggressive and innovative. This kind of operational art and bravado can mean more sometimes than pure technical chops.

Russia has had a lot of “firsts” in this domain. Since the mid-2000s, it has piloted and refined strategies that combine traditional cyber operations with asymmetric attacks to undermine adversaries’ information ecosystem and political processes. The war in Ukraine pushed these efforts to the next level. In 2015 the BlackEnergy cyber operation against a Ukrainian power utility turned off the lights and heat in the dead of winter in the Ivano-Frankivsk region, leaving thousands in the dark and cold on Christmas Eve. Industroyer, a substantially more sophisticated attack in December 2016, caused dangerous and widespread electricity outages in Ukraine’s capital, Kyiv. In June 2017, the NotPetya attack, disguised as a run-of-the-mill ransomware virus, partially crippled the Ukrainian economy by destroying vast amounts of data and computers belonging to the government, private sector, and critical infrastructure. The NotPetya worm, which Donald Trump’s administration described as “the most destructive and costly cyber-attack in history,” quickly spread beyond Ukraine’s borders and caused billions of dollars in losses.

More recently, the SolarWinds hack conducted by Russia’s Foreign Intelligence Service (SVR) exposed the vulnerabilities of the cyber supply chain and had a broad impact on thousands of private sector companies in the United States and other countries. (Attacks on the cyber supply chain are not a new phenomenon and have been documented by security experts since at least 2015.) Some cyber experts, including Dmitri Alperovitch, have suggested this type of cyber-espionage operation should not be portrayed as being outside the bounds of permissible activities. There is a countervailing argument that certain types of mega-hacks, even if not explicitly or initially destructive, should be considered destabilizing and subject to norms of restraint or at least met with forceful responses by the U.S. government.

This long-running Russian campaign of technology-enabled troublemaking has greatly magnified fears about future threats. Given the track record of the Kremlin and its proxies in seizing upon the harmful capabilities offered by social media and other online platforms, there is growing worry that Russia will make similar use of rapidly maturing advanced technologies such as artificial intelligence (AI), machine learning, and the sophisticated audiovisual fabrications and manipulations known as “deepfakes.” According to the final report of the U.S. National Security Commission on AI, published last month, “AI is deepening the threat posed by cyber attacks and disinformation campaigns that Russia, China, and other state and non-state actors are using to infiltrate our society, steal our data, and interfere in our democracy. The limited uses of AI-enabled attacks to date are the tip of the iceberg.”

In light of such sweeping predictions, a look at the state of Russia’s tool kit, the country’s capacity for technological innovation, particularly in the areas of AI and machine learning, and the long-term challenges facing the Russian tech sector is timely. Assembling a completely accurate picture of Russia’s future global tool kit is an impossible task. Russian government entities have every incentive to shroud advanced technologies or exquisite capabilities that are currently under development. This paper, which is based on open source reporting, assesses the extent to which Russian actors have successfully embraced certain technological innovations to enhance the Kremlin’s global activism. It also examines whether existing, off-the-shelf capabilities are largely adequate for the Kremlin’s purposes. Finally, the paper also draws inferences regarding the possible future evolution of Russia’s tool kit. At the end of the day, Russia’s claim to major-power status and ability to act as one will be rooted primarily in its nuclear and hard-power capabilities, not on generating false personas on social media or spreading disinformation using machine learning. Ongoing military modernization efforts such as the development of strategic conventional systems, anti-satellite weapons, and the like lie outside the scope of this paper.

It is also worth asking what lessons to take away from the avalanche of embarrassing revelations about rogue activities by Russian state actors and proxies. Some have been so noisy and conspicuous that one is left with the impression nobody on the Russian side actually expected them to remain secret. For example, the Main Intelligence Directorate (GRU) team that carried out the botched Novichok attack on Sergei and Yuliya Skripal in the United Kingdom in 2018 and the recently disclosed attack on an arms depot in the Czech Republic in late 2014 displayed remarkably sloppy tradecraft and a lack of attention to the

conspicuous dangers that their actions posed to innocent citizens. The same can be said for the Internet Research Agency (IRA) and its easily discoverable activities in the United States and other parts of the world in the wake of the 2016 election. In recent years, the IRA has appeared less interested in global domination than trolling U.S.-based adversaries or generating favorable public relations for its paymaster Yevgeny Prigozhin in his quest for the Putin regime's patronage and largesse.

FALLING FURTHER BEHIND

It is increasingly difficult to reconcile the image of Russia as a rising global power with the country's stagnant economy and long-standing difficulties in developing advanced technologies. With the Putin system now in its third decade, a familiar list of ills continue to hold Russia back: the failure to shift the economy away from its overwhelming reliance on the export of hydrocarbons, the increasingly dominant and predatory role of the state sector, and the lack of strong protections for private property and the rule of law. As with any country, Russia's ability to promote innovation will be driven by disparate factors—for example, the level of research and development (R&D) spending by the private sector and government, the education level and talents of the country's workforce, demographics, the emergence of globally competitive Russian firms, the pace of adoption of advanced technologies, and the clustering of innovation activities in certain regions.

As of now, the picture is, putting it charitably, mixed. The state has long been the dominant force behind the level of R&D spending, but this has barely budged since the 1990s. A deep-seated aversion to structural reforms makes it unlikely that the Russian leadership will transform the status quo and poor investment climate over the next five years. Nor does Russia seem likely to witness the emergence of a vibrant cohort of small and medium-sized enterprises capable of generating innovation for the rest of the economy.

Despite abundant human capital and a rich history of scientific and technological accomplishment inherited from the Soviet period, Russia today barely cracks the Top 50 of the Global Innovation Index prepared by the UN World Intellectual Property Organization. It lags behind countries like Thailand, Ukraine, and Romania. Since the late 1990s a large number of Russians with advanced technical skills have left the country in search of professional opportunities and higher living standards. The leading lights of Russia's scientific and engineering communities are increasingly found in the United States, Israel, and a great many other countries. Meanwhile, the total number of scientific and technology researchers working in Russia today has declined by nearly 65 percent compared to 1990 levels, and the number of graduate students was cut almost in half over the past decade. The number of researchers departing Russia annually has increased sharply since 2012, according to Russian Academy of Sciences head scientific secretary Nikolai Dolgushkin. Senior Federal Security Service (FSB) officials portray the continued emigration of IT specialists as a serious threat to national security.

Despite frequent lip service from political figures about the importance of creating a competitive digital economy based on homegrown champions like Yandex and Sber, both of which spend heavily on R&D, the government's actions tell a different story. The tech sector has been hurt by increasingly heavy-handed moves carried out in the name of national security. Opportunities for collaboration with and investment opportunities involving Western firms have slowly dried up in the wake of U.S. and EU sanctions and the spate of well-publicized Russian cyber operations against Western targets. Meanwhile, bans on the use of foreign-origin software and tech equipment by firms designated as critical infrastructure will enter into force in January 2024 and January 2025, respectively. These politically inspired moves to promote import substitution have been challenged by regime stalwarts such as Gazprom CEO Alexei Miller, but they are unlikely to disappear.

Targeted top-down government initiatives to foster innovation have been mainstays of Russian science and technology policy since the mid-1990s. But they have done little to change the trajectory of technological

development. According to a recent report by the Higher School of Economics in Moscow, the country's failure to develop advanced technologies risks consigning it to a position of being "permanently left behind." Despite outlays of nearly a trillion rubles (roughly \$13 billion at today's exchange rate) between 2006 and 2020 on state programs to foster innovation, spending on R&D in 2020 was an anemic 1.16 percent of total GDP and well below the government's 3 percent target. The Russian government continues to out-spend the private sector on a roughly two-to-one basis, which is the inverse of the situation in countries that Russia seeks to emulate, according to Academy of Sciences chief Aleksandr Sergeev.

The launch of the Skolkovo tech park in Moscow and smaller tech incubators in other parts of the country served as signature initiatives during Dmitri Medvedev's presidency. They briefly attracted interest from prominent Russian firms and foreign tech players but generally have failed to disrupt these broader trends. The national project Nauka (Russian for "science") initiated by Putin in 2018 to bolster scientific expertise has fallen far short of its targets; there are few signs that such initiatives have had a transformative impact on the overall dynamics and incentives at work in the economy or government policymaking.

The initiatives that have worked somewhat better often appear to be aimed primarily at gaming Russia's standings in various technology-related indices and league tables. For example, offering cash incentives for Russian researchers to increase the number of articles they submitted for publication created a flood of contributions on various topics in indexed journals between 2012 and 2018. However, their scientific merit has been questioned, given the significant number of articles by single authors and their relatively low levels of citations by other researchers. The reputational effects of a major plagiarism scandal at the Russian Academy of Sciences in early 2020 also continue to linger.

Clearly, the challenges facing technology development in Russia will not be overcome through such bureaucratic sleight of hand. Unlike their peers in China, with its vast population and burgeoning economy, Russian engineers have few innate national advantages when it comes to developing the large data sets or commercial applications that underlie innovation in fields like AI. Meanwhile, the authorities and security services have steadily sought to choke off exchanges and foreign scientific cooperation. Most recently, in March, the Duma passed a new law requiring educational institutions and universities to seek approval from federal ministries for foreign-related activities. Its expansive wording conceivably covers foreign participation in joint educational and scientific activities, foreign travel, and participation in foreign conferences and organizations, among other things. A series of high-profile espionage prosecutions against academic researchers has also had a chilling effect inside major research institutions.

The government is counting primarily on the defense sector to generate major technological advances in the field of AI. By necessity, the scope of defense-related AI research is fairly narrow with a particular focus placed on applications and systems in a handful of areas: robotics and autonomous systems, unmanned aerial vehicles, electronic warfare (EW), and information operations. As researchers Samuel Bendett and Margarita Konaev point out, some of these efforts are paying off. For example, the military tested various AI-enabled systems during the ongoing campaign in Syria with decent results in areas such as EW jamming equipment and unmanned ground vehicles for demining operations. But Russia is so far behind other countries in its effort to develop AI that its start-ups and researchers barely register in a landscape dominated by Chinese and U.S. competitors.

A TOOL KIT CONSISTING OF OLDIES BUT GOODIES

There are major differences between how Russia behaves in conflict zones when it is engaged in full-scale military operations and the types of actions that are part and parcel of its broader quest for global influence. In the latter context—specifically, situations where it faces formidable long-term competitors like the United States—Russian actors demonstrate appreciation of their limitations as well as awareness of their adversaries' strengths and weaknesses. In countries like France and Germany, where Russian figures

continue to enjoy considerable entrée in political and commercial circles, there is far less need to rely on exotic capabilities to exert influence. There is a strong argument to be made when it comes to Russia's global activism that what really matters is intent, and not necessarily the country's capacity to foster technological innovation. Much of the Kremlin's disruptive efforts in support of Trump's campaign in the 2016 election were produced on the back of existing internet platforms. It was Russian actors' level of skill and drive in exploiting these tools that distinguished them from the other international players that employ them. It seems safe to assume that there will be sufficient technical expertise in various parts of the Russian national security apparatus to devise similar gambits in the future.

Still, it is difficult to pinpoint signs of major technological advances in the conduct of recent Russian influence operations or malign activities. For example, fears of Russian interference ran extremely high ahead of the 2020 U.S. presidential election, but the techniques that the Kremlin eventually used had more in common with the 1920s heyday of the Comintern than sensationalized emerging technologies like AI and deepfakes. This is a common thread that runs through the 2020 U.S. presidential election and other high-profile instances of Russian election interference (for example, the 2018 U.S. midterm Congressional elections, the 2017 French presidential election, the 2016 Dutch referendum on the EU association agreement with Ukraine, and the 2016 U.S. presidential election). More recently, many Russian efforts have been so blatant or clumsy that they seem to betray a desire to be uncovered.

According to a March 2021 unclassified assessment by the Office of the Director of National Intelligence (ODNI), the Kremlin's main focus was on "conduct[ing] influence operations aimed at denigrating President Biden's candidacy and the Democratic Party, supporting former President Trump, undermining public confidence in the electoral process, and exacerbating sociopolitical divisions in the U.S." The main difference between 2016 and 2020 was that there was no hack-and-release operation. Nor were there any attempts to alter "any technical aspect of the voting process, including voter registrations, ballot casting, vote tabulation, or reporting results," according to the ODNI report. As the former director of the Cybersecurity and Infrastructure Security Agency, Christopher Krebs, has explained, "Election Day was just another Tuesday on the internet." Indeed, Russian efforts relied heavily on two Ukraine-related figures with checkered pasts: Konstantin Kilimnik, a "Russian influence agent" (in the terminology of the U.S. intelligence community) and longtime colleague of Donald Trump's former campaign manager, Paul Manafort, and Andrii Derkach, a politician/agent provocateur tied to Russian intelligence. In May 2020 Derkach leaked tapes of sensitive conversations between Joe Biden when he was vice president and then president Petro Poroshenko of Ukraine, which Derkach claimed implicated Biden and his son Hunter in corrupt dealings in the country. The Russian government made no serious attempt to disguise its hand in any of these efforts. (The U.S. government sanctioned Derkach last September and called out ongoing Russia efforts "to sow discord between political parties and drive internal divisions to influence voters.")

Disturbingly, Trump, his closest associates, pro-Trump media outlets, and grassroots supporters eagerly embraced and promoted these materials, just as they had done with the embarrassing emails stolen by Russian intelligence operatives from Hillary Clinton's campaign and the Democratic National Committee in 2016. In the end, the information supplied by Russia-tied actors like Derkach failed to generate levels of media attention comparable to what happened with the information released by Wikileaks in 2016. Still, it remains remarkable that a Russian active-measures operation was so closely connected to a sitting U.S. president and key members of his team. It is hard to imagine a more successful disinformation campaign that could have been produced using AI or machine learning.

Russian influence operations during the COVID-19 pandemic also deserve close examination. Up to now, the lion's share of attention has been focused on Russian efforts to promote the Sputnik-V vaccine and to tarnish Western governments' track records in dealing with the coronavirus. Surprisingly little attention has been paid to the fact that in December 2020 the European Medicines Agency (EMA)—the EU's drug regulator—was hacked, reportedly by both Russia- and China-tied hackers. The Russia-tied threat actors

reportedly obtained internal EMA documents, doctored some of them, and then made them available on an online hacker bulletin board. Portions of the documents were subsequently published in the French newspaper *Le Monde*, which helped to amplify suggestions that the EMA had been subject to undue political pressure by the European Commission and ignored safety concerns as it fast-tracked approval of the Pfizer vaccine. Anti-vaccination groups and conspiracy theorists have seized on the doctored documents, which continue to circulate on social media and in vaccine-hesitant communities in parts of Europe and the United States.

Such Russian efforts involve a level of human involvement (that is, a person sitting behind a keyboard) that has hardly changed in recent years. Human involvement remains a prerequisite for the types of activities that are at the heart of Russian disinformation campaigns, of spear-phishing campaigns against politicians, political campaigns, and government entities, and of the hijacking of social media platforms for nefarious purposes. The time-intensive and often tedious nature of such active measures is laid out in considerable detail in Department of Justice indictments of several Russian actors, the final report of Special Counsel Robert Mueller's investigation, and a Senate Select Committee on Intelligence report. Will the advent of new technologies create a major shift in the Russian tool kit? Perhaps. A recent report from the U.S. National Intelligence Council warns about the impending arrival of a world in which "propagandists could leverage AI, the Internet of Things, and other tools to tailor communications to large audiences, anticipate their reactions, and adapt messaging in near real time." However, there is, as of this writing, no sign that such approaches are being adapted at scale for the Russian tool kit or employed as part of the Kremlin's ongoing global malign activities.

The reason for this lag may have as much to do with the nature of contemporary influence operations as they do with Russian technological backwardness. Target audiences can be reached quite effectively with less sophisticated means, as shown above. As the technology researcher Tim Hwang has argued, "Online propagandists are pragmatists. They seek to wield the greatest degree of social and political influence at the lowest possible cost.... There is no need to spend additional resources creating an elaborate fake video when simply copying an image from elsewhere and misleadingly captioning it will achieve the same impact." At the same time, it is conceivable that advanced players like Russia could be more successful with a bit of money and persistence. A similar reality check may be in order when assessing the state of Russia's offensive cyber capabilities and how ongoing technological advances may—or may not—enhance their future role in its global tool kit. Undoubtedly, Russia will remain a top-tier cyber state actor for the foreseeable future. But we should be careful not to mythologize its capabilities. According to Marcus Willet, former senior cyber expert at the Government Communications Headquarters (GCHQ), a UK intelligence agency,

"We should not conclude that Russia is in any way the master of the internet, or that it outclasses the U.S. at cyber operations. Far from it—Russia is so worried about what it has learned about U.S. and allied cyber capabilities from U.S. intelligence leaks (especially Edward Snowden's) and by U.S. commercial dominance of internet technology (exemplified by U.S. pressure on the Chinese IT company Huawei) that the Russian government is seeking ways to isolate Russia physically from the global internet, despite the economic and social disadvantages of doing so." Assessments of the SolarWinds hack suggest that the operation's success was largely driven by fundamental weaknesses present in the cyber supply chain and the remarkable degree of stealth and discipline displayed by the SVR operators who conducted it. As former GCHQ Director Robert Hannigan has explained, "The truth is that enterprise IT and software companies—and many of the thousands of smaller companies in the average supply chain—often have significant weaknesses. Far from being unforeseen and unpreventable, these attacks are becoming wearily predictable."

As Western policymakers ponder the future evolution of Russian capabilities, they should also take note of a vigorous debate in expert circles on whether AI and machine learning will have a truly transformative effect on the potency of offensive cyber operations. The question is not whether automation will become

an important feature of Russian cyber operations—it already is. Indeed, much of the reason why the NotPetya malware spread so quickly and uncontrollably to such a wide array of victims was due to automation. In a recent paper on automating cyber attacks, Ben Buchanan, John Bansemer, Dakota Cary, Jack Lucas, and Micah Musser acknowledge that “certain offensive techniques [may] benefit from machine learning, including spearphishing, vulnerability discovery, delivering malicious code into networks, and evading cyber defenses.” At the same time, they caution that predictions that machine learning will transform cyber attacks are possibly overblown. “Attackers, especially states, are generally rational and will only turn to machine learning techniques,” they write, “if these techniques are simpler, cheaper, or more effective than the automated tools that are already available and easy to use.”

CONCLUSIONS

As Carnegie’s ongoing research project on the Return of Global Russia has shown, Russia’s activity around the world needs to be taken seriously and scrutinized carefully. At the same time, its capabilities should be evaluated without yielding to alarmism or exaggeration. This is essential for forming an accurate yet clear-eyed assessment of the Kremlin’s actual influence beyond its immediate periphery. It also means recognizing the gap between actual Russian capabilities and the Russian government’s aspirations and self-serving narratives. Western policymakers should pay greater attention to pertinent instances of Russia’s overreach and failure on the global stage. Such examples typically point not only to the meagerness of the existing Russian tool kit but also to long-term sources of Western strength and resilience. None of this is to downplay the risks that lie ahead or the harmful nature of recent Russian behavior. As CIA Director (and former Carnegie Endowment for International Peace president) Bill Burns has repeatedly warned, “Declining powers can be at least as disruptive as rising powers.” At the same time, Western policymakers must be able to set clear priorities and avoid playing into the Kremlin’s hands. After all, one key motivating factor behind Russian global activism is simply to distract Western policymakers from issues closer to home that the Kremlin actually thinks are of paramount importance and to throw them off-balance.

That means being able to identify the types of Russian actions that are most concerning and resisting the temptation to enter into a game of whack-a-mole in theaters of lesser importance. To be sure, serious harm can be done to the national security and prosperity of the United States and the EU through, say, careless Russian cyber attacks like NotPetya or destabilizing military moves in Ukraine. The flow of disinformation from niche online platforms operated by the Russian security services or the presence of Russian mercenaries in the Central African Republic are the kinds of problems that Western policymakers can afford to live with, albeit unhappily. At the same time, they must stay closely attuned to the potential evolution of the Russian tool kit and be prepared for the Kremlin’s use of AI and machine learning to match the pattern that has been observed in the information domain. If these technologies disseminate somewhat widely, Russia can be a “fast follower” and operational innovator in applying such tools to its global activism, even if Russian engineers are not the ones actually inventing, for example, new forms of deep learning.

Hence, Russia’s small AI/machine learning research field and its structurally challenged tech sector may matter less than its durable criminal and intelligence/military sectors, which have proven capable of funding a large and dangerous cyber/influence enterprise that continually develops or incorporates new techniques and patterns of activity. These actors will help determine the balance between the assimilation of increasingly sophisticated and destabilizing technologies and the continued reliance on tried-and-true tactics. For the foreseeable future, tools in the latter category appear likely to dominate.

12. The main idea behind Biden's global strategy

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CNN

<https://edition.cnn.com/2021/04/28/opinions/biden-100-days-global-strategy-miller/index.html>

You can do quite a bit in 100 days -- begin learning French; train your puppy; prepare for a 10K. But there's one thing you can't do: transform a cruel and unforgiving world. Judging from the Biden administration's first 100 days -- an unrealistic and unrealizable metric by which to judge a presidency -- there's no danger of that happening. I've worked for a half dozen administrations, both Republicans and Democrats, and have never seen one where foreign policy priorities seem so influenced by a domestic agenda and the politics that drive them. Whether this pattern holds remains to be seen. But the prime directive of President Joe Biden so far is stunningly clear -- aspire to be a transformative leader at home and a smart, careful one abroad.

It's America's broken house, stupid

It's no exaggeration to assert that Biden faces the greatest challenge of national recovery of any President since Franklin D. Roosevelt without the benefit of a world war that would leave America stronger at home and abroad. Governing is about choosing, and Biden's been crystal clear in laying out his top priorities: beating Covid, dealing with climate, restoring the economy and striving for racial equality. And if there were any doubt that for this administration foreign policy begins at home, in March, Secretary of State Antony Blinken laid out a foreign policy agenda -- virtually infused with issues tethered to domestic priorities: immigration, renewing democracy, climate and the Covid-19 pandemic.

None of this means Biden plans to ignore America's role in the world.

As someone who spent nearly 40 years as a senator and eight years as a vice president, Biden is acutely aware of the importance of not wasting political capital, especially with such narrow margins in the House and Senate, or roiling political waters at home that might undermine what he hopes will be a transformative domestic agenda. He and his foreign policy team have also sought to frame US foreign policy as one designed to be relevant to the American people and are framing their approach as a foreign policy that benefits the middle class. Many of his foreign policy moves, such as recognizing the mass killings of Armenians from 1915 to 1923 as genocide, to toughening up policy toward China by calling out human rights violations over its persecution of the Uyghur Muslims and repression in Hong Kong, have been politically popular. And for those policies that aren't well liked -- at least in Congress -- like rejoining the Iranian nuclear deal -- he has proceeded quite cautiously -- refusing to comply with Iran's demand to lift sanctions and promising a longer and stronger accord after reentry into the Joint Comprehensive Plan of Action (JCPOA).

When Biden has been faced with political opposition, as he was when he appeared to back off his campaign promise to raise the cap on refugee admissions, he's quickly retreated. And who would blame him? Since 1946, the average loss of a sitting president's party in the first midterms is 25 seats. With a slim majority in the House and a one seat advantage in the Senate, Biden has little margin for bad political decisions.

Easy low-hanging fruit will do — for now

With one or two exceptions discussed below, Biden's first 100 days in foreign policy has been understandably marked by caution, prudence and risk aversion. The world is a lot more complicated and

less friendly than when Biden was Barack Obama's vice president and surely since his tenure as chairman of the Senate Foreign Relations Committee. And given the President's formidable domestic challenges, Biden has largely confined himself to repairing the damage his predecessor had done to America's image and credibility -- mostly through executive actions and orders. This includes reversing the travel ban that primarily targeted mostly Muslim-majority countries; rejoining the World Health Organization and the Paris climate accord; and extending the New START treaty all represent an effort to rebuild and restore America's faith in diplomacy, multilateralism and leadership in the world. As president, Donald Trump's first two foreign trips were to Saudi Arabia and Israel, which broke with presidential tradition; in June, Biden will visit the UK to attend the G-7 and later Belgium for the NATO summit, signaling the importance of traditional American allies and interests.

Managing the world -- not transforming it

The riskiest thing Biden has done to date is to announce a September 11 deadline for leaving Afghanistan -- an issue in which the American public seems to have lost interest. And even here the main risk -- a degrading of American counterterrorism capability to prevent an attack on the continental US -- may take years to materialize, if at all. He's also been quite bold in identifying a set of US objectives to halve its greenhouse emissions by 2030, a deadline that seems extremely difficult to meet.

Otherwise, an administration filled with aspiring internationalists and led by an experienced foreign policy president who talked during the campaign about putting America back at the head of the table, seem to have a pretty sober and realistic view of the challenges they face in a cruel and unforgiving world. Issues with Russia, China, and Iran are to be managed if possible, not somehow neatly wrapped up and placed in the win column. Ditto with seemingly intractable problems like North Korea, Syria and the Israeli-Palestinian conflict. After the unhappy experiences in Afghanistan and Iraq, nation-building abroad is to be avoided at all costs -- a trend line that now runs through three administrations (Obama, Trump and Biden). But then governing is about choosing. Perhaps the world that awaits Joe Biden will draw him into some major foreign policy crisis. His early moves abroad, however, reflect the instincts of a man focused on matters domestic. He knows that the success of his presidency -- and perhaps the future of the republic -- hangs not on overcoming challenges abroad but on those here at home. And by the looks of things, the American people couldn't agree more.

13. Analysts Question Uniqueness of Hypersonic Weapons Capabilities

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National Defense

<https://www.nationaldefensemagazine.org/articles/2021/5/3/analysts-question-uniqueness-of-hypersonic-weapons-capabilities>

As the U.S. armed forces plow forward with their multifaceted campaign to develop hypersonic weapons, national security analysts are raising questions about how the new capabilities will impact great power competition. Hypersonics are a top research-and-development priority for the Pentagon. The weapons are being pursued by the Air Force, Army and Navy. The Defense Department is pumping billions of dollars into the technology. Military officials hope to begin fielding the new capabilities in fiscal year 2023.

Proponents say the weapons' ability to travel at speeds greater than Mach 5 combined with high maneuverability will make it difficult for adversaries to defeat them. Officials have also expressed enthusiasm for their depressed flight paths, which could delay detection from enemy defenses. They have been touted as game-changing capabilities and the Defense Department officially announced a strategy for accelerating their development and fielding earlier this year. However, some analysts say the weapons are being overhyped. Based on findings from the use of computational modeling, a recent study published in the Science and Global Security Journal said hypersonic missiles do not outperform other types of missiles in speed or in evading defense systems.

"Misperceptions of hypersonic weapon performance have arisen from social processes by which the organizations developing these weapons construct erroneous technical facts favoring continued investment," said the report, "Modeling the Performance of Hypersonic Boost-Glide Missiles," by Cameron Tracy, a fellow at the Union of Concerned Scientists' global security program and David Wright, the former co-director of the program. There are faster ballistic missiles that already exist that could be used in a regional conflict instead of hypersonic weapons, said Tracy during a recent event hosted by the Aerospace Corp.

"When we are thinking about deploying a new weapon technology, it's useful to compare that not just to what you're already using, but any other new technology you could deploy in that same space," he said. Tests of a maneuverable reentry vehicle mounted on a Trident missile in the mid-2000s showed that ballistic missiles have already achieved high levels of accuracy, he said. Ballistic missiles also do not face the challenges of degradation to the external shell of the weapon that hypersonics systems have to contend with, he added. "Even in the theater use [case], I think there is not yet a strong evidence-supported, data-supported argument that hypersonic weapons do a ton that a ballistic missile couldn't — particularly a ballistic missile armed with a maneuverable reentry vehicle," Tracy said.

Jeffrey Lewis, director of the East Asia Nonproliferation Project at the Middlebury Institute of International Studies at Monterey, said while the great speeds of hypersonics enable them to outrun missile defenses, ballistic weapons can achieve similar outcomes. Additionally, there are some cruise missiles which can

outmatch missile defense systems without solely relying on speed. Even though weapons developers and other advocates have touted hypersonics as revolutionary, “it’s unclear to me [that] this will ever be more than a niche capability, in part because there are other ways to defeat defenses,” he said.

Another concern raised by some analysts is that hypersonic weapons development could fuel an escalating arms race between adversaries. In addition to the United States, China and Russia — which the Pentagon views as great power competitors — are also pursuing hypersonics. Jill Hruby, former director of Sandia National Laboratories, noted that the rapid progression of other technologies such as inexpensive satellites and artificial intelligence combined with hypersonics technology could encourage competitors to try to outproduce one another. “We have to think about ... what arms races are you creating, versus just are our hypersonics better than your hypersonics,” she said.

However, analysts who see great military advantages in deploying such weapons say adversaries’ hypersonic systems pose a threat to the United States, and developing them domestically would add a layer of deterrence against would-be aggressors. Their speed and maneuverability would pose a challenge for U.S. missile defense systems to counter threats from Russia and China, analysts have noted. During a military parade in 2019, China showcased a hypersonic missile known as the DF-17. Russian President Vladimir Putin reported that same year that his country’s military had deployed the Avangard hypersonic weapon.

Rebecca Heinrichs, a senior fellow at the Hudson Institute, said speed, maneuverability and precision make hypersonics a particularly powerful threat. Those capabilities would make them difficult to track. “We might know when the launch is. We might know right before it hits what it’s about to target,” she said. “But if we lose track ... it makes it very challenging to close the fire control and have an interceptor or defend any other kind of active defense against this weapon system that is headed towards” the homeland or U.S. allies. Additionally, China — which wants to push the U.S. military out of the Indo-Pacific region — could use hypersonic weapons to try and achieve its objectives, and U.S. forces must be able to defend their positions there, Heinrichs said. “Clearly, they believe it’s important, which is why they’re investing in it so much,” she said. “The United States has to have a response to that.”

The Pentagon has grown increasingly concerned about the balance of power in the region. Indo-Pacific Command officials have requested a major boost in funding for capabilities to counter China. Dean Wilkening, a fellow at Johns Hopkins University’s Applied Physics Laboratory, said U.S. forces would be vulnerable if they can’t match Chinese capabilities in the region. A U.S. hypersonics arsenal could create doubt that a Chinese high-speed attack strategy would work, he said. “The Chinese are thinking in terms of rapid strikes to defang our power projection capability,” he said. “Currently, we don’t have much of a response to that.”

Hruby said U.S. hypersonics could also be deployed against other adversaries. Surgical strikes — attacks intended to damage a target with minimal damage to the target’s surroundings — could benefit from the extreme accuracy offered by the weapons, which could be used to attack terrorist groups while potentially minimizing civilian casualties. Terrorist threats are not going anywhere, she said, despite the Pentagon’s renewed focus on great power competition. “We have this tendency in the United States to forget the last war ... [which is] a war we’re still fighting,” she said. Meanwhile, the U.S. hypersonics enterprise faces supply chain and manufacturing challenges as the Defense Department gets ready to move into the next phase of weapons development, experts say.

Michael White, assistant director for hypersonics in the office of the undersecretary of defense for research and engineering, said the hypersonics community has spent many years working on research-and-development programs in support of the weapons. However, it is not as accustomed to building such weapons at scale and implementing rigorous systems engineering. “We’re talking about developing and

flying missiles and weapon systems in a way that requires us to be very, very strong from a systems engineering perspective, as well as fully understand the implications of hypersonics,” he said at an Air Force Association event in February. “Frankly, we’ve got a ways to go.” “I’m not going to be satisfied with the health of the industrial base until we are routinely successfully flying hypersonic weapons in our prototype development program,” he added. Meanwhile, improvement and growth are needed in areas such as ground testing infrastructure, he added.

Because hypersonic weapons fly extremely fast, engineers must utilize large facilities equipped to generate high energy levels to ensure the air vehicles’ thermal protection systems hold up, explained James Weber, hypersonics senior technical lead at the Air Force Research Laboratory. “We still have a ways to go, especially in terms of capability and capacity,” he said. The hypersonics field also needs to grow its intellectual capital. Thomas Mahnken, president and CEO of the Center for Strategic and Budgetary Assessments, emphasized that the pool of engineers and experts is finite and the Pentagon has been outpaced in this area by Russia and China. “We let it slide, and we’ve been paying the cost for letting that slide,” he said.

Maj. Gen. Andrew Gebara, director of strategic plans, programs and requirements, said it is a “revolutionary” time to be in Air Force Global Strike Command — which manages the nation’s bomber fleet — because of the progress in hypersonic weapons technology. Systems that are in the works such as the AGM-183 Air-launched Rapid Response Weapon, or ARRW, and the capability to put such systems on long-range bombers, are promising, he said. The Air Force is focused on diversifying its hypersonics portfolio in coming years, he said. “It would be a shame if we got to an Air Force where we were just content with one thing and that’s all we did,” Gebara said. “Those days are behind us.” Meanwhile, officials are working to collect more data about hypersonics technology through testing. Collecting such information early on to inform programs will allow industry to start the development phase sooner and keep prices down, said Air Force Brig. Gen. Heath Collins, program executive officer for weapons and director of the Air Force Life Cycle Management Center’s armament directorate. “By being able to start faster, you get done faster, and that is always a recipe for success,” he said.

14. U.S. Army’s Precision Strike Missile Completes Longest Flight to Date

13.05.2021

Defense World

https://www.defenseworld.net/news/29562/U_S__Army___s_Precision_Strike_Missile_Completes_Longest_Flight_to_Date#.YLK1e6hKiUI

Lockheed Martin said its Precision Strike Missile (PrSM) successfully completed the fourth consecutive flight test with the U.S. Army today in a 400-kilometer demonstration at White Sands Missile Range, New Mexico. The PrSM was fired from a HIMARS launcher and flew with expected precision to the target area where it once again demonstrated a highly accurate and effective warhead event. Test objectives included confirming flight trajectory, range and accuracy from launch to impact, as well as warhead lethality, HIMARS integration and overall missile performance. “PrSM accomplished all of the Army’s test objectives again today in its longest flight yet,” said Gaylia Campbell, vice president of Precision Fires at Lockheed Martin Missiles and Fire Control.

The 400-kilometer flight is the first of three demonstrations that will take place this year as part of the Enhanced Technology Maturation and Risk Reduction (ETMRR) phase of the development program. This series of flight tests follows three successful TMRR demonstrations culminating last spring. Additional ETMRR flights are slated for the second half of 2021 and will include a maximum range flight test and participation in the U.S. Army's Project Convergence this fall.

Lockheed Martin continues to successfully validate the design and performance of the baseline tactical missile and is working with the Army on Engineering Design Testing, production readiness and fielding requirements to support multi-domain operations and future needs of the soldier. The next-generation precision-strike, surface-to-surface weapon system will deliver enhanced capabilities for attacking, neutralizing, suppressing and destroying targets at depth on the battlefield. It further provides field artillery units a new long-range capability while supporting brigade, division, corps, Army, theater, Joint and Coalition forces.

15. Britain doubling range of its M270 rocket artillery

04.04.2021

UK Defence Journal

<https://ukdefencejournal.org.uk/britain-doubling-range-of-its-m270-rocket-artillery/>

Following a recent agreement struck with the United States Department of Defense, the British Army say that they will be embarking on a five-year programme to update their M270 Multiple Launch Rocket Systems (MLRS). Upgrades will be made to 44 launchers, which are currently in-service, and will include a new armoured cab and upgraded automotive and launch mechanism components.

"The upgrades will ensure that the Army's Land Deep Fires capability remains strong for the next three decades and that the British Army has the technological capability to quickly meet the threats of today and tomorrow. Taking advantage of the long-standing MLRS collaboration with the US and key allies, work will start on upgrading the first tranche of launchers in March 2022 with the fleet going through production over a four-year period. The upgrades will keep the equipment in service until 2050." It is understood that the work will be carried out under an existing production contract with Lockheed Martin Missiles and Fire Control with the work being carried out at Red River Army Depot and Lockheed Martin's facility in Camden, Arkansas.

The British Army add that the UK is also developing UK-specific systems for the new launchers, including Composite Rubber Tracks, and a vehicle camera and radar system. A new Fire Control System will be developed collaboratively with the US, UK, Italy, and Finland. "To ensure soldiers are not outranged, the Army will develop a new extended range missile with MLRS partners, to be fired from the updated launchers, which should be in-service by 2025. The Guided MLRS Extended Range (GMLRS-ER) missile will extend the Army's reach from 84 to 150km". The 44 updated launchers will also be able to fire the US's Precision Strike Missile (PrSM) which has a range of 499km and is expected in-service from 2024. "These weapons will place the British Army at the cutting edge of global deep fires capability, ready to respond to long range air defence and missile threats presented by hostile actors."

16. Wormuth Defends Army Budget, Missile Programs

13.05.2021

Breaking Defense

<https://breakingdefense.com/2021/05/wormuth-defends-army-budget-missile-programs/>

WASHINGTON: President Biden's nominee for Army Secretary, Pentagon veteran Christine Wormuth, sailed through a bipartisan lovefest of a Senate Armed Services Committee confirmation hearing this morning. Unlike most nominees, she actually made some substantive statements – starting with a strong commitment to fight for Army funding within the Pentagon. It's widely presumed that the Army will bear the brunt of post-COVID budget cuts, facing what the Joint Chiefs Chairman called a fiscal "bloodletting" to boost Air Force and Navy programs to better counter China. Army personnel endstrength is a particularly tempting target for budget-cutters.

Asked about that by former Army captain Sen. Tom Cotton, Wormuth took on the question directly. "I don't think anyone would be well served by looking at the Army as ... just a bill payer," she told Cotton, the powerful ranking member of the SASC's air land power subcommittee. "If confirmed... I would look very carefully and be quite skeptical of proposals to make major cuts to force structure. I would not want to see us return to the days of 15 month long deployments and regular use of stop loss." "I will be the strongest possible advocate for the Army inside the Pentagon and out," Wormuth said.

SASC chairman Jack Reed raised a more nuanced issue. In its urgency to accelerate acquisition and reform its organization, the Army has "created tensions between civilian and military acquisition officials." Specifically, that's the civilians in the traditional acquisition office, the staff of the Assistant Secretary of the Army for Acquisition, Technology, & Logistics (aka ASAALT), and the uniformed military officers running the two-year-old Army Futures Command and its subordinate Cross Functional Teams, which attempt to bridge the divides between bureaucratic fiefdoms. "The stand up of Army Futures Command ...as you said... put a lot of energy around the Army's modernization programs," Wormuth told Sen. Reed. "But... to try to make sure that we keep our programs on schedule and at the cost that we have been planning for, I'll want to look carefully at the work of the cross-functional teams." "I would in particular like to see the Assistant Secretary of the Army for [Acquisition], Logistics, and Technology...work very, very closely with Army Futures Command," she went on. "I think there has been some friction there, and I'd like to try to do everything possible to make sure the whole team is working together, given the challenges in the program.

"I'd like to see the strongest possible collaboration between Army Futures Command and the acquisition staff in the Department of the Army," she reiterated later in the hearing. Of the services' six modernization priorities – artillery, armored vehicles, aircraft, battlefield networks, missile defense, and soldier gear – the Army has made artillery its No. 1 priority. But some of those "Long-Range Precision Fires" have sparked controversy among the services, because they're developing missiles so long-ranged that they can strike targets traditionally reserved for airpower, even in the vastness of the Western Pacific. In a tightening budget, critics say, the Pentagon can't afford land-based missiles that do the same mission as strategic bombers, and the Pacific is naturally the province of the Navy and Air Force. So Reed's Republican ranking member, Sen. James Inhofe, and Cotton both pressed Wormuth on whether she was committed to Long-Range Precision Fires remaining the first priority.

"I think the long-range precision fires portfolio is a very important one in the Army's overall modernization program and is particularly important in the Indo-Pacific, although it's also relevant vis-a-vis Russia as well," she said. "It's the highest priority, in my view, because of the need to address the Anti-Access/Area

Denial challenges that we face in both Europe and the Indo-Pacific... Given the quite sophisticated integrated air defenses that will likely be facing, I think it behooves us to develop capabilities that allow us to strike targets from very long distances.”

In other words, if adversaries can shoot down our strike aircraft or keep them at bay – which is the main point of Russia and Chinese Anti-Access/Area Denial defenses – the Army needs a way to strike distant targets itself, from land. That’s the essence of the Army’s argument for the capability, and one Wormuth thoroughly committed to this morning. “I generally share the Army’s current assessment that the long-range precision fires priority is the top priority, but there’s also a lot of interdependence among the six big categories,” Wormuth cautioned. “So, if there is a requirement to make hard choices, I’ll want to look very carefully across the entire modernization program. “I think it’s worth reflecting on the fact that the Army has not comprehensively modernized itself in over 40 years,” she said. Faced with a choice between more personnel and more technology, she said, “a larger army that is equipped with old equipment is not going to serve us well in the future.”

17. Seoul says North Korean SRBMs test-launched on 25 March travelled 600 km

29.04.2021

Janes

<https://www.janes.com/defence-news/news-detail/seoul-says-north-korean-srbms-test-launched-on-25-march-travelled-600-km>

South Korea has revised its assessment of the distance travelled by the North Korean short-range ballistic missiles (SRBMs) that were test-launched on 25 March, according to local media reports.

The Yonhap News Agency quoted Defence Minister Suh Wook as saying on 28 April that the two SRBMs launched by Pyongyang at the time, which appear to be derived from the the KN-23 (US/South Korean designation) SRBM, flew about 600 km. The revised distance assessment is in line with that provided on 26 March by Pyongyang’s state-run Korean Central News Agency (KCNA). South Korea’s Joint Chiefs of Staff (JCS) had initially reported that the two SRBMs, which were launched from North Korea’s eastern Hamju County in South Hamgyong Province, flew about 450 km and reached an altitude of 60 km.

Speaking about the reasons for the discrepancy, the JCS told reporters on 29 March that the military initially failed to accurately determine the distance because of the blind spots that radars in South Korea have due to the Earth’s curvature. When our assets track such projectiles, there could be blind spot areas, JCS spokesperson Colonel Kim Jun-rak was quoted by Yonhap as saying, adding that South Korean and US intelligence authorities carried out in-depth analysis to come up with the new estimate.

18. New Details of Hamas' Rockets Emerge

14.05.2021

Defense World

https://www.defenseworld.net/news/29569/New_Details_of_Hamas__Rockets_Emerge#.YLK3uKhKiUI

New details have emerged of Hamas' rockets which were fired at Israel since the latest confrontation began between the Middle East's most formidable military and the Iran-supported militia group in Gaza. As per The Jerusalem Post, the rockets used by Hamas is A-120 – developed from R-120 - which reportedly has a range of about 120km. Hamas has a huge inventory of shorter-range systems like the Qassam (up to 10km or 6 miles) and the Quds 101 (up to about 16km); bolstered by the Grad system (up to 55km); and the Sejil 55 (up to 55km). These probably make up the bulk of its inventory and for the shortest ranges can be bolstered by mortar fire. It also operates a variety of longer-range systems like the M-75 (up to 75km); the Fajr (up to 100km); the R-160 (up to 120km); and some M-302s which have a range of up to 200km.

Argentina based news outlet Zona-militar has detailed the specifications of some of the Hamas rockets. None of the rocket artillery systems used by Hamas and the Palestinian Islamic Jihad (PIJ) have a guidance system that allows a precise attack on military installations. The only one that is equipped with an inertial navigation system is the Fajr-5 unveiled by Iran in 2017.

Qassem Rockets

The Qassem is nothing more than a rocket composed mainly of a metal tube filled with explosives. The first versions that came out in 2001 had a range of 5 km. One of its latest versions, Qassem 3, has an explosive warhead weighing approximately 20 kg, with a range of 16 km.

al-Quds 101 / Grad / BM21

The al-Quds rocket is only used by Palestinian forces. Like the previous one, it is homemade with a range of 16 km. The more sophisticated versions, launched in 2008 against the city of Ashkelon, derive their design from the Russian / Soviet-made Grad and BM21 rockets. Its 122mm makeshift launchers are more complex than those used for launching the Qassem rockets, with a capacity to fire up to 10 rockets simultaneously. One of the latest versions, al-Quds 3, has a range between 18-30km.

M-75

Starting in the 2010s, Hamas began development of a series of new rockets with Iranian technical support. From this cooperation emerged the M-75 rocket, as a derivative version of the Fajr-5 rocket developed by Iran during the 1990s. Unlike the previous ones, its superior range, reaching up to 75km away, made it possible to attack the city of Tel Aviv, Israel's second most populous city. The first 333mm Fajr-5 rockets began to be supplied in 2012, a fact confirmed by the then Chief of the Iranian Revolutionary Guard, with blueprints and parts being delivered to be assembled in clandestine workshops of Hamas and the Palestinian Islamic Jihad (PIJ). They are equipped with a 90 kg high explosive charge. Its first employment against Israeli cities was in 2006 by the terrorist organization Hezbollah during the Lebanon War.

M-302

The M-302 is a Syrian-made 302mm rocket, based on the design of the Chinese WS-1 rockets. Within the Palestinian forces it is commonly designated as R-160, with a range that goes from 100-200 km.

19. Army Discloses Hypersonic LRHW Range Of 1,725 Miles; Watch Out China

12.05.2021

Breaking Defense

<https://breakingdefense.com/2021/05/army-discloses-hypersonic-lrhw-range-of-1725-miles-watch-out-china/>

WASHINGTON: How far can the Army's hypersonic boost-glide missile — and, probably, its Naval variant — actually go? Consider this Pacific nightmare: China invades Taiwan, but all of America's allies refuse to let the US use their territory or airspace. Long-Range Hypersonic Weapons, based on US soil in Guam, could still strike Chinese troops besieging Taipei.

Conversely, in *China's* nightmare scenario, where US allies *do* let American missile units use their soil, LRHW batteries in Taiwan, Japan, or South Korea could strike targets more than one thousand miles inside Chinese territory. What's more, the Navy version of the LRHW, called Conventional Prompt Strike, could launch from submarines or ships at sea anywhere in the Pacific. "The Long Range Hypersonic Weapon provides a capability at a distance greater than 2,775 km," an Army spokesman told me. That's about 1,725 miles — at a minimum. The "greater than" leaves the door wide open for a significantly longer range than that. That Army statement came after years of silence on the subject, weeks of pestering by *Breaking Defense*, and at least one high-level discussion among the interservice "board of directors" coordinating hypersonics programs.

Why would the Navy need to be consulted? While the Army's statement only applies to the Army version, the land-based LRHW, the Navy's sea-launched Conventional Prompt Strike weapon uses the identical rocket booster and hypersonic "glide body," just packaged for launch from ships and subs instead of trucks. So it's hard to imagine the range could be much different. If the Army version reaches 1,725-plus miles, the Navy version almost certainly does too. For its part, the Air Force is developing multiple types of hypersonic weapons to launch from planes, which requires a different engineering approach and will result in different ranges. Now, naval vessels and strategic bombers are obviously much more mobile than truck-borne launchers, and they can fire from international waters and airspace, without worrying about allies. But land-based launchers are cheaper — they're just trucks, not jets or subs — and can hide from enemy strikes amidst terrain — which is not possible in the empty air or flat ocean. So the Army and its advocates argue its missiles can play an important supporting role and complement Navy and Air Force weapons. That argument is now up for fierce debate as the Pentagon's budget tightens.

From the Army perspective, the LRHW is the apex predator of a whole family of new Long Range Precision Fires (LRPF). While LRHW is the longest-ranged, fastest-flying, and most capable, it's also the most expensive. So hypersonics will be reserved for the highest-priority targets, while shorter-ranged weapons take on the vast majority of threats. As we've reported previously, under the Army's artillery plan, the higher the headquarters, the longer-ranged the weapons it will control: Theater commanders in both Europe and the Pacific will gain control of Multi-Domain Task Forces equipped with both the Long-Range Hypersonic Weapon, with range "greater than 2,775 km" (1,725 miles) and the Mid-Range Capability, with a range of "around 1,800 km" (ca. 1,120 miles). LRHW and MRC will each field a battery of combat-capable prototypes in 2023.

Corps commanders will get the new Precision Strike Missile (PrSM), with a range of “over 500 km” (310 miles). PrSM completed its fourth test flight today, exceeding 400 km. Future variants of PrSM have the potential to triple its range.

Division commanders will get the new Extended Range Cannon Artillery (ERCA), an armored howitzer with an extra-long barrel and high-powered propellant that can fire rocket-boosted, precision-guided shells about 70 km (43 miles). Future ramjet ammunition might double that. Brigade commanders will retain their existing 155 mm howitzers, but those will be able to fire the same XM1113 Rocket Assisted Projectile (RAP) as ERCA, which from their shorter barrels can reach about 40 km (25 miles). These weapons will depend on targeting data from long-range sensors – Army, joint, and intelligence agency – shared over a Joint All Domain Command & Control (JADC2) network. And they’ll rely on artificial intelligence to swiftly spot targets, prioritize among them, and propose the best weapon to fire.

20. U.S. Patriot, THAAD Missile Systems Integration Tests Failed

30.04.2021

Defense World

https://www.defenseworld.net/news/29477/U_S__Patriot__THAAD_Missile_Systems_Integration_Tests_Failed#.YLK5A6hKiUI

Two tests aimed at integrating Patriot and THAAD missile systems conducted by the U.S. Missile Defense Agency last year, have failed. In a report published earlier this week, the U.S. Government Accountability Office (GAO) said the Army carried out two out of a planned nine flight tests in the fiscal year 2020 designed to make the Patriot system launch an interceptor using a THAAD AN/TPY-2 radar. The remaining tests were postponed due to the COVID-19 pandemic.

In the first test, named FTX-39, the primary objective was a simulated PAC-3 MSE intercept of a threat representative short-range ballistic missile (SRBM) target utilizing Patriot Launch-on-Remote (THAAD). However, the range safety team terminated the Army-supplied Black Dagger target after a software error caused it to drift outside of acceptable flight safety boundaries. The termination occurred prior to the THAAD AN/TPY-2 radar acquiring the target. Consequently, THAAD and Patriot did not collect data on the target. MDA declared this a no-test, the GAO report said.

In the second test, named FTP-27 E2, the primary objective was a live intercept of a threat representative SRBM target with two PAC-3 interceptors utilizing Patriot Launch-on-Remote (THAAD). The interceptors failed and a subsequent Army failure review board found the root cause was that the compact disk used to update the two interceptors was missing a portion of the necessary software. According to MDA, the test still successfully demonstrated the Patriot Launch-on-Remote (THAAD) capability despite the failed intercept. Specifically, MDA officials noted that Patriot received the remote track data from THAAD’s AN/TPY-2 radar, developed a firing solution, launched its interceptors, detected and correlated with the remote track, and provided guidance uplinks. Director, Operational Test and Evaluation (DOT&E) concurred that the test demonstrated this capability, while BMDS OTA officials stated the significance of the test failure was low with regard to the operational force and future of Patriot Launch-on-Remote (THAAD).

21. The Army wants an anti-tank missile that shoots twice as far as its current weapon

16.04.2021

Army Times

<https://www.armytimes.com/news/your-army/2021/04/15/the-army-wants-an-anti-tank-missile-that-shoots-twice-as-far-as-its-current-weapon/>

The Army is looking for a vehicle-mounted missile to bust up current and future tanks on the battlefield out to 10,000 meters — more than double the distance of the missile its replacing. The Close Combat Missile System-Heavy would replace the half-century-old, tube-launched, optically tracked, wireless-guided, or TOW, missile currently in use. The Army uses the TOW on the Bradley Fighting Vehicle and on TOW-dedicated Humvees, and it wants whatever replaces the TOW to fit within the same space restrictions so that it can go on any Bradley replacement coming in the future. Mark Andrews, chief of the Close Capabilities Branch, said the new missile would be used much like the TOW, to defeat armor as well as counter-defilade and fortified positions. He spoke at the annual industry days conference of the Maneuver Capabilities Development and Integration Directorate out of the Maneuver Center of Excellence at Fort Benning, Georgia, April 7. The new missile will need to reach those farther distances but also be able to strike at shorter ranges, he said. “We want it armed early, we don’t want to wait 1,000 or 2,000 meters for the missile to arm. We want to get it at less than 100 meters,” Andrews said.

The process of firing the missile must be versatile, he said. They want to use command line-of-sight, fire and forget, and both lock on before launch and lock on after launch. Andrews said they also want the new missile to be able to target from a drone feed, a laser designator, or even fire to a box area then find the target itself. And it has to stay low. It must operate below 3,000 feet above ground level. That way, tactical units won’t have to clear airspace to fire it. In a similar session on maneuver requirements, Capt. Ari Perril said the CCMS-H would support the direct firefight against armor at the company or troop level, but also help shape operations at the battalion or brigade level. The missile will need to be able to defeat future active protection systems, those systems under use or being developed that use everything from electronic “soft kills” to their own munitions systems to knock down drones, incoming missiles or other projectiles.

Those are the primary capabilities. If those are met, the Army wants to be able to fire the missile on the move. The service would like to see the flight time reduced in comparison with the TOW, have it work without the need for GPS, and provide aided target recognition and identification. Lastly, they’d like this new missile to be programmed for prioritizing selected targets and fire from a single vehicle or from multiple vehicles within the platoon.

22. US approves \$1.7 billion Aegis missile defense sale to Canada

11.05.2021

Defense News

<https://www.defensenews.com/naval/2021/05/11/us-okays-aegis-sale-to-canada-worth-17-billion/>

WASHINGTON — The U.S. State Department has approved the potential sale to NATO member and ally Canada of four Lockheed Martin-made Aegis missile defense systems valued at up to \$1.7 billion, the Pentagon announced Monday.

The Pentagon said the Aegis Combat Systems, AN/SPY-7 radars and other related equipment would help Ottawa deliver its first Aegis-capable Canadian Surface Combatant. That in turn would “significantly improve” Canada’s network-centric warfare capability for U.S. forces operating globally alongside Canada’s, the Pentagon said. The radars on Canada’s next-generation frigate, selected for the surface combatant program, are expected to allow it to shoot at targets sensed and relayed by U.S. Navy assets. The ships will also be loaded with a 32-cell vertical launching system as well as deck-mounted launchers for Kongsberg and Raytheon Technologies’ Naval Strike Missile and launchers for torpedoes.

The potential deal is for four sets of the Aegis Combat System, four sets of AN/SPY-7 radars, three sets of the MK 41 Vertical Launching System, equipment, spare parts and technical support, the Pentagon said. The Defense Security Cooperation Agency notified Congress of the sale Monday. However, notifications do not represent final sales; if Congress does not reject the potential sale, it goes into negotiations, which determine final quantities of equipment and costs. “There are a significant number of other companies under contract with the U.S. Navy that will provide components, systems, and engineering services during the execution of this effort,” DSCA said in the announcement. “While the purchaser typically requests offsets, any offset agreement will be defined in future negotiations between the purchaser and the contractor(s).”

23. Counting the cost of deterrence: France’s nuclear recapitalisation

14.05.2021

IISS

<https://www.iiss.org/blogs/military-balance/2021/05/france-nuclear-recapitalisation>

Having formally launched the development of its third generation of nuclear-powered ballistic missile submarines, France is embarking on a broad renewal of its nuclear forces. The aim is to ensure that its deterrent remains credible into, and beyond, the middle of this century, explain Timothy Wright and Hugo Decis.

As the 50-year mark approaches since France commissioned its first nuclear-powered ballistic missile submarine (SSBN, or SNLE in French), Paris has now formally launched the development of its third generation of SSBNs – a key element in its broader nuclear-forces modernisation programme. The parallel threads of the wider modernisation effort draw together developments to ballistic and air-launched cruise missiles and their respective launch platforms, but will also place a burden on defence expenditure.

The first of the four boats to replace the current second-generation *Le Triomphant*-class is meant to be commissioned by 2035 – the same year in which the successor to the ASMPA ramjet-power nuclear-armed air-to-surface missile, the ASN4G, is expected to enter service. The *Le Triomphant* successor, presently known as the SNLE 3G, is also associated with the M51.4 submarine-launched ballistic missile (SLBM),

which will be a further improvement on the M51 and will likely be required by the early 2040s. The delivery platform for the ASN4G hypersonic cruise missile, the SCAF/Next Generation Fighter (NGF) multi-role combat aircraft, is also planned to enter service at the beginning of the 2040s. Collectively, these projects will renew France's strategic and sub-strategic nuclear forces but will also be a significant burden on defence expenditure over the next two decades. France's 2021 draft defence budget earmarked €5 billion (US\$6bn) for nuclear-related work, a figure close to 13% of core (excluding pensions) defence funding of €39.2bn (US\$47.2bn) for the year.

Submarine size and weapons

The SNLE 3G is expected to be slightly larger than the *Le Triomphant*-class, with a submerged displacement of approximately 15,000 tonnes and a crew complement of about 100. As was the case with its predecessor, the SNLE 3G will be fitted with 16 launch tubes and armed with the M51 family of SLBM, as well as with torpedoes and anti-ship missiles (AShMs) for self-defence purposes. The SNLE 3G will, however, have a new sonar suite intended to improve detection and help counter likely increased threats to future submarine operations. The yet-to-be-named class of SSBNs will also be fitted with a new and more powerful reactor, developed from the K15 model which is currently used by both the *Le Triomphant*-class of SSBNs and the *Charles de Gaulle* aircraft carrier.

In the interim period before the SNLE 3G enters service, the French Navy will receive an improved version of the M51, the M51.3, which is due to be introduced in 2025. The missile will use the same warhead design, the *Tête nucléaire océanique* introduced in 2016, but will feature a revised third stage. France's current SLBM, the M51.2, employs a solid-propellant third stage from the earlier M45 SLBM. The upgraded solid-propellant motor will likely increase the M51.3's range beyond the reported 6,000 kilometre+ range of the M51.2, although the extent of this increase has not been made public. An M51 missile was tested on 28 April 2021 by the French Directorate of Armaments (DGA), which is responsible for developing and procuring France's new SLBM. The test launch was conducted from a submerged platform at the DGA's *Essais de missiles* site in the Landes region. As for the further planned SLBM upgrade in the form of the M51.4, while there has been little public mention of this upgrade, part of the rationale for its development may be to try to ensure that the SLBM is capable of beating projected ballistic-missile defences. One option to help achieve this aim could include upgrading the M51's current post-boost vehicle (PBV), which is derived from the earlier M45 SLBM. PBVs are small liquid-fuelled propulsion systems that can be used by missiles with multiple independently targetable re-entry vehicle payloads to release the warheads during the terminal phase of flight, allowing them to follow separate trajectories and thus to strike at different targets. An upgraded PBV could complicate an adversary's missile defences through more dispersed targeting options, while providing the submarine-based nuclear force with greater targeting flexibility.

Dyad elements

The new class of SSBNs will be complemented by the ASN4G from 2035. Initially carried by the air force's *Rafale* B and the navy's *Rafale* M, the ASN4G missile will also be part of the NGF's weapons inventory from the 2040s onwards. The NGF is a tri-national effort between France, Germany and Spain to develop a successor to the *Rafale* and the Eurofighter. France, however, is the only partner to require that the successor be a nuclear-capable aircraft, and that it also be able to operate from an aircraft carrier. Concept work on the ASN4G has been under way since 2014.

France is also one of a small but growing number of countries exploring the potential of hypersonic boost-glide technology. Its V-MaX (*véhicule manoeuvrant expérimental*) project began towards the end of the last decade to explore the potential of very-high-speed glide body designs, with the aim of conducting flight-test experiments from 2021. Whether Paris is interested in the potential application of a hypersonic glide

vehicle as an element of its nuclear-deterrent force remains to be seen. What is clear, however, is that France is embarking on a broad renewal of its nuclear forces with the aim of ensuring that its deterrent remains credible into, and beyond, the middle of this century. The twin objectives of sustaining this impetus and meeting the technical and budgetary demands of the developments now lie ahead.

24. Israel's BARAK ER Interceptor Hits Ballistic Missile

19.04.2021

British Broadcasting Corporation

https://www.defenseworld.net/news/29386/Israel___s_BARAK_ER_Interceptor_Hits_Ballistic_Missile#.YLK66ahKiUI

The Barak ER (Extended Range) interceptor produced by Israel Aerospace Industries (IAI) successfully struck a ballistic missile target. BARAK provides protection against a range of air, sea and ground threats, including ballistic, ground-to-ground, and cruise missiles, UAVs, and helicopters. It consists of interceptors for a variety of ranges and advanced homing seekers, digital MMR radar or MFSTAR radar for naval platforms, command and control system, and unified launchers for different ranges. These systems are complemented by breakthrough communication and connectivity capabilities, providing the user with optimal force activation using several batteries or ships for the multidimensional battlefield. The BARAK-ER Air Defense System combines the capability to intercept airborne threats at an extended range of up to 150 km, including ballistic missile targets. The extended range capability is made possible in part by adjusting the interceptor and MMR radar capabilities to a 150 km range, and can be fitted for both naval and land platforms, the company said in a release today.

The BARAK ER interceptor tested in the trial series was taken directly from the company's production line. The BARAK ER revolutionizes air defense with unprecedented flexibility, both in real-time full net-centric combat management as well as with unique smart launchers. The launchers are capable of independently launching and managing any mix of interceptors without a dedicated command post on site.

25. British Royal Air Force invests in space capabilities

14.05.2021

Defesa Aérea e Naval

<https://www.c4isrnet.com/battlefield-tech/space/2021/05/14/british-royal-air-force-invests-in-space-capabilities/>

WASHINGTON — The United Kingdom's recent guiding plan for its military included both cuts to existing systems and investments in new technologies, with a special emphasis on increasing the U.K.'s capabilities in space.

During an April visit to Washington, Air Chief Marshal Mike Wigston, the head of the Royal Air Force, sat down with C4ISRNET to discuss some of those investments outlined in the Integrated Review of Security, Defence, Development and Foreign Policy. This interview has been edited for length and clarity.

One item listed in the integrated review was a new intelligence surveillance and reconnaissance satellite constellation. Can you elaborate on what the thinking is there?

Our aim for that program is a [constellation of] responsive launched small satellites, low Earth orbit constellation, where we have the option of selecting the payloads, selecting the role and selecting the position of the satellites, and then launching them and getting them into operation in a very, very short decision action cycle. This is something that is attractive to me as an operational commander. And I think it will have direct utility for the war fighter, that ability to respond to a crisis in a particular part of the world, or perhaps a requirement to add some resilience to another part of the space network. [This design] means we can respond, launch and get something into service very rapidly. And that's the work that we will be continuing over the next couple of years, for that particular aspect of our space program.

The U.K. government has invested in the company OneWeb. Is that something you think might be a fit for this system?

The U.K.'s investment with OneWeb was a another part of government, so that's separate from the United Kingdom's Ministry of Defence. But there are elements of OneWeb — and all of the similar systems that are being launched into space at the moment — around the command and control, the level of autonomy and autonomous control in those satellite constellations, where there's huge numbers of small and very small satellites working together. So there are elements of what OneWeb is doing, which are of interest to me, in a similar way to some of the other similar systems that have been launched at the moment. But that's not something that I'm directly involved with.

The U.K. was involved in the European navigation system known as Galileo but was forced out following Brexit. British official discussed doing a U.K.-only system, but that has been delayed and is seen by some analysts as too expensive. What is the current status of these discussions?

So again, the primary responsibility for that is in another part of government, but of course, the Ministry of Defence is involved because of our interest in, and the importance of, GPS and global positioning. And we're still analyzing and assessing what the options are, because nobody needs us to build a direct duplication of a system that's already in place like GPS. But what would be really helpful, as we look at a more challenged, a more competitive [space] and potentially a need for greater resilience in space, is a system that's complimentary, that might be made in a different model, with a mix of nodes on the network, some of them on the surface of the Earth, some of them in space. There are some options there, and an opportunity to do something different, which is complimentary to GPS, but that adds resilience in a different way. So I'm very keen that we continue to explore that. And it's certainly something that the U.K. has some world-leading technologies, and we've got a lot to offer. And so that will be something that we will continue to work on over the next few years.

The U.S. stood up both a Space Command and a Space Force in the last couple of years. The U.K. is now spinning up its own Space Command. Can you walk us through what that's going to look like, and what the interaction with its U.S. counterpart might be going forward?

The U.K. Space Command is an opportunity for us to bring together some quite disparate elements — of largely Royal Air Force units — that are operating in space and are closely linked in with U.S. Space Command and the U.S. Space Force already, but we haven't had a unifying command and control and a unifying organization for them. I think this, at the very outset of the U.K. Space Command, it's an

opportunity for us to bring together everything that we're doing in space, in the Royal Air Force and in the U.K. Ministry of Defence, bring it all under one organization to make sure that we're channeling the investment that we're going to make, that we're giving the people in that organization the skills and the equipment they need to make sure that we are living up to our ambition and our prime minister's ambition for the U.K. to take a leading role in Europe in space. And so the Space Command will be that nodal point where we engage with allies, like the United States, that we share information, that we develop new systems, and that we continue to benefit from all of the opportunities that space offers.

Across the board, the commercial sector outspends governments on technology investment, but it's particularly true with space. You have billions earmarked in the integrated review for space, which is real money, but the reality is that you will need to rely on private sector investment going forward. How do you make that work?

Space is already an enterprise where some of the leading progress that's being made at the moment is in the commercial sector and private companies making enormous leaps in space technology and what we are doing in space. And so working closely with those will be a key part of the U.K.'s space plan and the U.K.'s role in space. The figures for commercial investment in space, of course they dwarf what we are doing from a military perspective, but our role is significantly different. Because whilst those commercial organizations are investing in space to provide services, to enable things to go faster and further on Earth to enable people's day-to-day lives, the role of the Royal Air Force, the role of armed forces in space, is fundamentally different. We're there to understand what some of our potential adversaries, some malign actors, are doing, to understand and to protect what's our critical national infrastructure in space, and to be ready to defend it. That's about information sharing, that's about understanding and having a clear picture of what's going on in space. And that's about working with allies so that we're ready to act when we see something which, you know, crosses the line of unacceptability.

26. Next-gen intercontinental ballistic missile interceptor estimated cost? Nearly \$18B

27.04.2021

Defense News

<https://www.defensenews.com/pentagon/2021/04/27/next-gen-intercontinental-ballistic-missile-interceptor-estimated-to-cost-nearly-18-billion/>

WASHINGTON — The Pentagon's Next-Generation Interceptor — a weapon the department is competitively developing to replace the current ground-based interceptors within the United States — will cost nearly \$18 billion across the life of the program. An independent cost estimate from the Defense Department's Cost Assessment and Program Evaluation (CAPE) office — first reported by Bloomberg and since obtained by Defense News — has determined the total cost to develop the NGI will come to roughly \$13 billion while procurement as well as operation and sustainment will come to a little over \$2 billion each.

The Pentagon announced in August 2019 its intention to build a new interceptor after the Redesigned Kill Vehicle (RKV) program — one that would upgrade the Ground-Based Interceptors (GBI) with the ability to go after more complex threats more reliably — was abruptly killed. The interceptors make up the Ground-Based Midcourse Defense System that has been in place in the continental United States to defend against

possible threats from North Korea and Iran. The RKV would have specifically upgraded the GBI's Exoatmospheric Kill Vehicle (EKV) — or warhead — designed to destroy targets in high-speed collisions after separating from the booster rocket. The EKV required technical changes due to issues in tests, and so the Missile Defense Agency decided to initiate the RKV program. In the meantime, the agency has had several successful tests of the GMD system with the EKV following engineering changes.

RKV struggled with insurmountable technical issues resulting in delayed schedules and cost increases. Since then, the Defense Department has embarked on a new effort to entirely replace the GBIs in place at Fort Greeley, Alaska, and Vandenberg Air Base, California, with the new NGIs. The Pentagon has already selected Lockheed Martin and Northrop Grumman to go head-to-head in a competition to develop and build the interceptors. The companies beat out a Boeing team that included General Atomics Electromagnetic Systems and Aerojet Rocketdyne. The contract has an estimated maximum value of \$1.6 billion through fiscal 2022 and will carry both designs into the technology development and risk reduction phase of the program, according to a March 23 Pentagon announcement. The CAPE estimate takes into account the acquisition plan to keep two NGI contractor teams through the Critical Design Review (CDR) phase, the CAPE summary states. The Missile Defense Agency will choose a single vendor to proceed into final tests and production.

27. ESCOLA DE ARTILHARIA TEM NOVO CENTRO DE SIMULAÇÃO

03.05.2021

Exército Brasileiro

https://www.eb.mil.br/web/noticias/noticiario-do-exercito/-/asset_publisher/MjaG93KcunQl/content/id/13242547

Rio de Janeiro (RJ) – No dia 29 de abril de 2021, os alunos do Estágio de Operação do Sistema de Mísseis Antiaéreos Telecomandados RBS-70 do ano de 2021 tiveram a oportunidade de utilizar a nova sala de simulação do sistema de mísseis, realizando o batismo de instrução nas novas instalações do pavilhão do Centro de Simulação. O centro ainda possui uma sala de instrução com simulador do míssil Iglá 9k38 e outra para o simulador do míssil RBS-70 NG. O Centro de Simulação da EsACosAAe já está sendo expandido com a criação de um outro pavilhão anexo com previsão de término para o 2º semestre do corrente ano.

28. Empresas selecionadas para operar no Centro Espacial de Alcântara são conhecidas

28.04.2021

Ministério da Defesa

<https://www.gov.br/defesa/pt-br/centrais-de-conteudo/noticias/empresas-selecionadas-para-operar-no-centro-espacial-de-alcantara-sao-conhecidas>

Brasília (DF), 28/04/2021 – As quatro empresas selecionadas para realizar lançamento de veículos espaciais não militares no Centro Espacial de Alcântara (CEA) foram conhecidas, na tarde desta quarta-feira (28), durante evento na Base Aérea de Brasília. O Ministro da Defesa, Walter Souza Braga Netto, compareceu ao evento ao lado do Presidente da República, Jair Bolsonaro.

As selecionadas, em chamamento público, são corporações, sendo três americanas e uma canadense. São elas: Hyperion, C6 Launch, Virgin Orbit e OrionAST. Após o anúncio, o Chefe do Estado-Maior da Aeronáutica, Tenente-Brigadeiro do Ar Marcelo Kanitz Damasceno, e o presidente da Agência Espacial Brasileira vinculada ao Ministério da Ciência, Tecnologia e Inovações (MCTIC), Carlos Moura, cumprimentaram e entregaram placa simbólica referente ao evento aos representantes das empresas.

A Força Aérea é responsável pela gestão do CEA. Em 2020, firmou acordo de cooperação, com a Agência Espacial Brasileira (AEB) para as tratativas iniciais com empresas interessadas em utilizar bens e serviços para lançamento de veículos espaciais não militares utilizando a estrutura da base espacial. Assim, o evento desta quarta-feira, apresentou o resultado final do chamamento público iniciado no ano passado.

Na cerimônia, o Ministro da Ciência e Tecnologia, Marcos Pontes, destacou que esse era momento muito esperado, parabenizou os representantes das empresas e relembrou conquistas relacionadas à Base Espacial de Alcântara. “Desde 2019 até agora, lançamos quatro satélites e vem outros pela frente, com desenvolvimento nacional e parceiras internacionais”, disse. Ele relembrou, ainda, que, em fevereiro deste ano, foram entregues 120 títulos de propriedade às famílias dos arredores da Base, remanejadas por ocasião da criação da Base Espacial na década 80. Representando o Ministro da Defesa, o Comandante da Aeronáutica, Tenente-Brigadeiro do Ar Carlos de Almeida Baptista Júnior, ressaltou que “para o Brasil, a implantação do Centro Espacial de Alcântara implicará em intercâmbio de experiências, aperfeiçoamento técnico dos nossos recursos humanos, da nossa infraestrutura, desenvolvimento de novos processos e aumento no nível de prontidão operacional”.

Ele reforçou ainda que haverá benefícios em escala local, regional e nacional, com o “desenvolvimento de serviços e da indústria, incorporação de produtos de alto valor agregado, geração de emprego, aperfeiçoamento da mão de obra e investimentos na infraestrutura local”, enumerou. O evento ocorreu em um salão escuro iluminado por luzes azuis. À frente das autoridades, estrelas no infinito eram projetadas em um telão, contribuindo para que os presentes tivessem a sensação de estar no espaço sideral.

A cerimônia também foi prestigiada pelo Ministro das Relações Exteriores, Carlos França; da Economia, Paulo Guedes; do Turismo, Gilson Machado Neto; pelo Comandante do Exército, General de Exército Paulo Sérgio Nogueira de Oliveira; pelo Chefe do Estado-Maior Conjunto das Forças Armadas, Tenente-Brigadeiro do Ar Raul Botelho; e pelo representante do Comandante da Marinha, o Chefe do Estado Maior da Armada, Almirante de Esquadra Marcos Silva Rodrigues. Além de embaixadores, senadores, deputados e autoridades militares e civis.

29. Militares participam de mais uma etapa do Exercício Meridiano

05.05.2021

Ministério da Defesa

<https://www.gov.br/defesa/pt-br/centrais-de-conteudo/noticias/militares-participam-de-mais-uma-etapa-do-exercicio-meridiano>

Brasília (DF), 05/05/2021 - No período de 03 a 07 de maio, nas instalações da Escola Superior de Guerra, Campus Brasília, militares do Ministério da Defesa e das Forças Singulares deram continuidade ao planejamento do Exercício Conjunto Meridiano I. Na abertura dos trabalhos, Oficiais Gerais do Ministério da Defesa (MD), Comando de Operações Navais (COMOPNAV), Comando de Operações Terrestre (COTER) e Comando de Preparo (COMPREP), além de oficiais de diversas organizações das Forças Armadas, estavam presentes para a apresentação da Chefia de Operações Conjuntas (CHOC) do Estado Maior Conjunto das Forças Armadas (EMCFA), abordando agenda a ser seguida pelos participantes, os documentos a serem apreciados bem como as orientações necessárias para a entrega dos produtos ao término da semana.

No evento, os militares tiveram a oportunidade de se aprofundar em temas importantes, como a finalização do corpo do Caderno de Exercício, o qual orienta, o preparo e a execução do exercício; os meios a serem empregados; e as metodologias de avaliação de desempenho operacional para as ações conjuntas. O Exercício Conjunto Meridiano, ações com tropas e meios, ocorrerá de 25 de outubro a 17 de novembro

do ano corrente, sendo dividido em três módulos: Meridiano Dragão, Meridiano Ibagé e Meridiano Poti, nas regiões Sudeste, Sul e Central do país, respectivamente.

O Exercício Meridiano I será o maior exercício Conjunto, das Forças Armadas sob a égide do MD e possibilitará a avaliação e mensuração de ações conjuntas, à luz de cenários e ameaças estabelecidos, proporcionando um elevado aperfeiçoamento doutrinário, e significativa interoperabilidade.

30. Ministro da Defesa acompanha atividades da Operação Ágata Amazônia de combate a delitos transfronteiriços

08.05.2021

Ministério da Defesa

<https://www.gov.br/defesa/pt-br/centrais-de-conteudo/noticias/ministro-da-defesa-acompanha-atividades-da-operacao-agata-de-combate-a-delitos-transfronteiricos>

Tabatinga (AM), 08/05/2021 - Combater ilícitos nas fronteiras marítima, terrestre e aérea também é tarefa das Forças Armadas. Em parceria com Órgãos de Segurança Pública e Fiscalização (OSPF), está em curso a Operação Ágata Amazônia. O Ministro da Defesa, Walter Souza Braga Netto, esteve em Tabatinga para acompanhar a missão, na quinta (06) e sexta-feira (07). Desde segunda-feira (03), cerca de 600 militares atuam em ações preventivas e repressivas contra crimes como de contrabando, descaminho e narcotráfico. "É uma oportunidade ver de perto o trabalho realizado aqui, de segurança das fronteiras. Trabalhamos também para que todas as necessidades de operacionalidade deles seja atendida", disse Braga Netto, ao término da visita. A Operação Ágata é coordenada pelo Comando Conjunto Operação Ágata Amazônia, com a participação de três Comandos Militares. São eles: o 9º Distrito Naval, da Marinha, o Comando Militar da Amazônia, do Exército, e o Comando Aéreo Amazônico, da Força Aérea Brasileira.

Localidade

O município de Tabatinga localiza-se na Tríplice Fronteira entre Brasil, Colômbia e Peru, região da Amazônia Ocidental. O município faz fronteira com a colombiana Letícia. Os arredores das duas cidades irmãs são caracterizados pela predominância da floresta e de rios, por onde ocorre a maior parte do trânsito das pessoas. Devido à essa geografia, com poucas vias terrestres, a atuação dos militares e integrantes da OSPF na Operação Ágata Amazônia concentra-se ao longo dos rios Solimões, Içá e Japurá.

O Comandante do 9º Distrito Naval, Vice-Almirante Ralph Dias, enfatizou as quatro capacidades das Forças Armadas: capilaridade, caracterizada pela presença nos mais diversos locais do país; comando e controle, que coordena as atribuições; mobilidade; e poder de comunicação. "Com a Ágata conjunta, as Forças trabalham de forma integrada. Esse trabalho faz com que se aumente a sensação de segurança do cidadão que mora na fronteira", assegurou.

"Nós empregamos ferryboats, embarcação de combate, lanchas e barcos menores de alumínio chamados voadeiras. Esses meios possibilitam segurança para realizar o patrulhamento e deslocamento mais rápido", explicou o Comandante do 8º Batalhão de Infantaria de Selva (BIS), Coronel Robson Moraes. Os militares são constantemente treinados para missões como essa. O Comandante da 16ª Brigada de Infantaria de Selva, General de Brigada Marcius Cardoso Netto, frisou que o trabalho desempenhado "visa não só o

combate a ilícitos transfronteiriços, como também defender e proteger a Amazônia". O Comandante do Comando Aéreo Amazônico, Brigadeiro do Ar Luiz Guilherme Magarão, destacou que os desafios são tão grandes quanto as dimensões continentais da região. "Para realizar o patrulhamento aéreo, utilizamos radares do Sistema de Vigilância da Amazônia (SIVAM) e a atuação de militares do Departamento de Controle do Espaço Aéreo (DCEA). Eles identificam alvos suspeitos e, a partir daí, as aeronaves de defesa aérea são acionadas para interceptação dos alvos ilícitos" explicou.

Ele reiterou que quanto mais operações conjuntas são realizadas, melhor é a organização entre as Forças Singulares e as agências de segurança pública. "A Força Aérea, quando executa uma ação de interceptação a uma aeronave não autorizada, depende do apoio em solo da Polícia Federal para dar continuidade à ação repressiva", disse ele. O Chefe do Estado-Maior Conjunto das Forças Armadas (CEMCF), Tenente-Brigadeiro do Ar Raul Botelho, enfatizou que a visita do Ministro e de autoridades da Defesa é "significativa para a tropa identificar a preocupação do Ministério da Defesa com a operação, ver o planejamento sendo executado e os resultados que estão sendo obtidos". A comitiva do Ministério da Defesa passou pela Capitania Fluvial de Tabatinga, organização militar da Marinha responsável pela segurança do tráfego aquaviário, que emprega meios e pessoal na Operação Ágata. Na oportunidade, estiveram também no Navio-Patrolha Fluvial Raposo Tavares, um dos meios de transporte dessa missão. Os militares ainda foram ao 8º Batalhão de Infantaria de Selva, onde verificaram as instalações.

A Operação Ágata ocorre ao longo do ano em diferentes estados e períodos. Neste ano, essa é a segunda Operação Ágata conjunta. A primeira ocorreu na fronteira entre Ponta Porã, em Mato Grosso do Sul, e Don Juan Caballero, no Paraguai.

Assistência social

No contexto da Operação Ágata Amazônia, o Comando Conjunto atua na ação social às populações ribeirinhas. A comitiva do Ministério da Defesa verificou o trabalho do Navio de Assistência Hospitalar Carlos Chagas, uma das quatro embarcações da Marinha utilizadas para esse fim, conhecidos na região como navios da esperança. "São navios que conduzem equipes médicas aos ribeirinhos das comunidades de baixa renda. Médicos, dentistas, farmacêuticos, enfermeiros realizam os atendimentos", explicou o Almirante Ralph. Ele informou ainda que esse trabalho é realizado em aproveitamento de parte dos meios empregados para o combate a ilícitos nas fronteiras. Os profissionais de saúde são militares do Hospital de Guarnição de Tabatinga, do Exército, e da Policlínica Naval de Manaus, da Marinha.

A Operação

A Operação Ágata foi criada, em 2011, para intensificar a presença do Estado nas faixas de fronteira em integração com órgãos federais, estaduais e municipais, bem como a cooperação técnica e de inteligência e de logística entre os envolvidos. O trabalho conjunto aperfeiçoa as ações contra os ilícitos nas fronteiras, inclusive combate os crimes ambientais, reforça o sentimento de nacionalismo e a Defesa da Pátria nessas regiões sensíveis. Desde 2017, a Ágata tem novo formato de atuação. Antes, era desencadeada em nível nacional e simultaneamente em todas as fronteiras brasileiras. Hoje são pontuais, sem datas previstas para ocorrer e sem prazo determinado.

31. La Defensa Argentina en el futuro próximo

15.05.2021

Defensa.com

El jefe de Gabinete del Gobierno argentino, Santiago Cafiero, presentó en el Congreso Nacional la programación prevista para la cartera de Defensa para el periodo 2021-23, por primera vez desde que asumió el presidente Alberto Fernández. Como es sabido, el presupuesto nacional ha sufrido modificaciones enormes debido a la crisis económica sanitaria y se efectuó una prórroga del que proviene de la Administración Macri. El Gobierno actual ya había presentado en las cámaras el proyecto FONDEF (Fondo de Defensa), que, por medio del uso de un porcentaje del presupuesto nacional, lograría obtener recursos mínimos que permitan un cierto nivel de recuperación de capacidades militares. El Ministerio de Defensa (MINDEF) ha detallado la demanda preliminar conjunta de inversiones priorizadas de las Fuerzas Armadas para el periodo citado, si bien se encuentra sujeto a aprobación del presupuesto que oportunamente deberá tratar el Congreso Nacional.

De acuerdo a lo dispuesto en los sucesivos ciclos de Planeamiento de la Defensa Nacional, sujetos a lo determinado en el Decreto 1.729/07 y concretados en el Plan de Capacidades Militares (PLANCAMIL), el primer proyecto de equipamiento estratégico prioritario del Ejército es la adquisición y renovación de helicópteros medianos y de montaña, que permitirán realizar operaciones de protección civil, incluyendo de apoyo a la comunidad, asistencia y ayuda humanitaria (sanitario, abastecimiento, lucha contra el fuego y otras). El segundo es la incorporación de VCBR (Vehículo de Combate Blindados a Rueda) 8x8 para el desarrollo de una nueva capacidad y significa un salto cualitativo para el transporte de personal y en la posibilidad de proyectar fuerzas ante un requerimiento de la ONU (incluido el equipamiento de la Fuerza de Tareas Cruz del Sur).

Se pretende la transformación de la Brigada Mecanizada X (integrante de la Fuerza de Intervención Rápida, priorizada en el PLANCAMIL) en una a Rueda, mediante la incorporación de blindados 8x8 de diferentes tipos y prestaciones, conformando una familia de vehículos, ya que sobre un mismo chasis y similar batea se configuran distintos modelos para satisfacer las diferentes necesidades tácticas: transporte de personal, combate de infantería, ambulancia, puesto de mando, cazatanques, apertura de brechas, recuperador, etc. Por el momento las dos opciones elegidas son el M-1126 Stryker y el chino NORINCO VN-1 o sus versiones más avanzadas. El tercero consiste en la modernización del TAM (Tanque Argentino Mediano) 2C, enmarcado en la Decisión Administrativa del jefe de Gabinete de Ministros 931/15, que aprueba el Convenio de Implementación para la Modernización y Actualización de 74 unidades para salvaguardar un núcleo de blindados acorde con las necesidades de la futura Brigada completa.

Hay otros proyectos prioritarios, como la renovación de vehículos de campaña y de guarnición hay actualmente con de variadas líneas y marcas para diferentes propósitos: ambulancias, autobuses, camionetas, camiones, etc. Una adecuada y constante renovación de este parque automotor permitirá realizar con eficacia las misiones de apoyo a la comunidad, con la contribución a mitigar los efectos del COVID-19. Otro es la actualización del Sistema de Comunicaciones de Campaña y Fijo, alcanzando un nivel de mando y control de la fuerza, tanto específico como conjunto, que permita mantener el ejercicio de la conducción en todos los niveles, facilitando los enlaces a través de redes integradas y con capacidad de transferencia de datos. Las facilidades tecnológicas deben estar lo suficientemente modernizadas como para permitir la interoperabilidad en acciones o ejercicios combinados regionales. A su vez, la inclusión del equipamiento adecuado permitirá implementar la seguridad para la ciberdefensa.

Se desea también la recuperación de capacidades de defensa antiaérea, para los cual la compra de un sistema de misiles portátiles RBS-70 es elemental para brindar una cobertura inicial a los medios y fracciones prioritarias y de mayor alistamiento, que se enmarca también en una necesidad básica que tiene trascendentales implicaciones operacionales y de protección de instalaciones críticas o eventos locales de

relevancia internacional; el abastecimiento y dotación de equipo básico (SEMIL), proveyendo uniformes, correajes y armamento individual. El adiestramiento y la disponibilidad de las fracciones operacionales depende de la provisión del equipo básico y de la posibilidad de ejecutar un adiestramiento elemental, para lo cual se debe contar con los insumos esenciales que lo permiten, como es la munición y el combustible.

Hay necesidad de radares, sensores y dispositivos de vigilancia terrestre, abarcando el espectro multidimensional y economizando recursos humanos. La utilización de visores nocturnos y sistemas de seguridad electrónica como radares 3D, sensores electro-ópticos giro-estabilizados, equipos optrónicos, etc., permiten la detección temprana de amenazas y el ejercicio de una defensa activa. Se modernizará el sistema de Ingenieros, potenciando el conjunto de actividades de apoyo de combate que brindan esas unidades, multiplicando su impacto en actividades duales, tanto de desarrollo nacional como de apoyo en emergencias.

Se incorporarán módulos habitacionales y sistemas de instalaciones de campaña, asegurando la supervivencia en entornos extremos mediante la provisión de carpas, contenedores, sistemas de construcción de refugios y abrigos; incluidos los sistemas eléctricos, de climatización y los servicios de alimentación y sanitarios correspondientes. Otra prioridad es el equipamiento y abastecimiento de efectos e insumos biomédicos, dotando a los once hospitales militares fijos que dispone, sumados a los reubicables, permitiendo apoyar a la comunidad a través de campañas de vacunación y prestaciones varias, sobre todo en lugares remotos y de difícil acceso. Igualmente, se requiere un sistema de defensa contracarro para dar protección primaria a los elementos no blindados y a instalaciones de alto valor, como los lanzadores Carl Gustav M4.

Las líneas generales del material que debe ser adquirido e incorporado a la Fuerza Aérea Argentina (FAA) se manifiestan en los planes Transversal Sistémico (PTS) y de Capacidades Militares (PLANCAMIL). El primero tiene como objetivo establecer las previsiones para alcanzar capacidades basadas en ciencia, tecnología y el sistema productivo nacional, a efectos de dotar al instrumento militar de alerta estratégica, reconocimiento y vigilancia aeroespacial, coordinadas a través de un sistema de mando y control en la totalidad del territorio nacional. El segundo es una herramienta que identifica y define el modelo de instrumento militar, su concepto de empleo, categoría de fuerzas y los efectos que debe asegurar, así como las capacidades militares conjuntas, sus sistemas de fuerzas y el adecuado despliegue territorial a implementar.

Con dichos planes como rectores para la planificación de Fuerza Aérea Argentina, se prevé incorporar y modernizar diversas aeronaves durante los próximos años. Para la aviación de caza se requieren 12 aparatos definidos como complementarios, de transición a un sistema de armas de cuarta generación; la modernización de 12 Embraer EMB-312 Tucano para que sigan apoyando las actividades de vigilancia y control del espacio aéreo; compra de un desarrollo nacional de un sistema de tiro para los Tucano y FAdeA IA-63 Pampa II y III (cuya flota debería alcanzar los 40), con el mismo fin; incrementar la cantidad de A4-AR Fightinghawk operativos; continuar con el desarrollo de los sistemas aéreos no tripulados para elevar la capacidad de vigilancia, exploración y reconocimiento con ese tipo de vectores; y reconfigurar parte de los IA-58 Pucará modernizando su planta motriz y la aviónica (con intervención de FAdeA) con sensores y sistemas desarrollados por INVAP las mismas funciones, especialmente en el Norte.

En aviones de transporte, el primer paso es la compra en curso de 1 birreactor Boeing 737 de mediana capacidad y alcance; proseguir incorporando 10 aparatos livianos de corto alcance Beech TC-12B Huron; recuperar progresivamente los birreactores Fokker F28, hasta disponer de 3; continuar con la modernización de los Lockheed C-130 Hercules hasta disponer de 6; seguir la recuperación de los Lear Jet 35 para verificación radioeléctrica, exploración y reconocimiento fotográfico, vuelos sanitarios, traslado de órganos, etc. La puesta a punto de la totalidad de las aeronaves de transporte restantes, es decir, los biturbohélices ligeros Saab 340 y De Havilland of Canada DHC-6 Twin Otter tiene, entre otros objetivos,

contribuir a la tarea de vuelos de enlace y fomento de LADE (Líneas Aéreas del Estado) dentro del país, especialmente en la región patagónica.

Finalmente, en helicópteros se reemplazarán progresivamente los Aérospatiale (hoy Airbus Helicopters SA-315 Lama, que llevan más de cuarenta años de servicio en la FAA, previendo la incorporación de al menos 3 unidades aptas para la operación de búsqueda y rescate y ayuda humanitaria en alta montaña; se recuperará el ciclo logístico de los 2 Mi-171E pesados, a efectos de continuar con las tareas de transporte y carga en apoyo a la actividad antártica, tareas que se llevarán a cabo en el Área Material Quilmes con asistencia rusa; y se quiere reconfigurar la Unidad Aérea en Chipre, que se encuentra operando bajo mandato de la ONU, homogeneizando la flota desplegada en la esa misión, para lo cual se retirarán los Hughes 500 ligeros y se unificará con biturbinas Bell 212 de la Institución.

La Armada precisa un grupo de patrulla marítimo con la incorporación de los 4 OPV (Off-shore Patrol Vessel) adquiridos a Francia por la Administración anterior; un buque multipropósito LPD para la mejora y ampliación de las capacidades anfibas, de ayuda humanitaria y de apoyo logístico a las actividades antárticas; un grupo aéreo de vigilancia y exploración de superficie y submarino con la incorporación de aviones Lockheed P-3C Orion; mejorar las bases y puntos de apoyo logístico a nivel de arsenales y talleres, con la puesta en seco y reparación del dique de carena n° 2 y la recuperación de la operación del dique N° 1 del ARPB, mediante su reparación integral para la conservación de la subcapacidad de sostén logístico fijo; y la incorporación de 2 buques transporte marítimo.

A nivel de Estado Mayor Conjunto se contempla la incorporación de equipamiento de ciberdefensa para el desarrollo de acciones tendentes a alcanzar un sistema de respuesta ante incidentes en el Comando Conjunto de Ciberdefensa; la incorporación de equipamiento para un sistema de comunicaciones satelitales, para la ampliación de la subcapacidad de mando y control a nivel operacional para la Red Satelital para la Defensa; el reemplazo y renovación de bienes de uso del material de las bases antárticas permanentes y transitorias de las Fuerzas Armadas (Esperanza, San Martín, Belgrano 2, Orcadas, Marambio, Primavera, Matienzo, Cámara, Melchior, Decepción y Base Conjunta Petrel, incluyendo todos los refugios activos) desplegadas en el Territorio Antártico argentino, con la finalidad de adecuar sus instalaciones y completar el equipamiento necesario para cumplir sus funciones. Se adquirirá equipamiento para la OMP (Operación Militar de Paz) desplegada en Chipre.

Todo esto constituye el punto de partida del Gobierno argentino, alejado de las necesidades perentorias de la Defensa Nacional. La clave es la aprobación del FONDEF, sin el cual son meros enunciados. De aprobarse este proyecto, el MINDEF recibiría una cantidad aproximada y equivalente a los 350 millones de dólares anuales para sus planes. La difícil situación económica implica pocas certezas y menos aún seguridades. Queda por ver si los anuncios se plasman en concreciones, aunque está claro que la defensa no es prioridad a nivel político, pese al terremoto sanitario. Centenares de miles de personas diariamente son alimentadas por los uniformados en todo el país, asistidos hasta en el último confín y con probidad y eficiencia, agotando muchos de sus medios. Uno de los escasos recursos estatales que operaron con buenos resultados han sido las instituciones castrenses, marcando unos de los pocos logros de la Casa Rosada.

32. La china CATIC llega a Buenos Aires para ofrecer armamento a Argentina

12.05.2021

Defensa.com

<https://www.defensa.com/argentina/china-catic-llega-buenos-aires-para-ofrecer-armamento-argentina>

Una comitiva perteneciente a la China International Aero-Technology Import & Export Corporation (CATIC) se reunió con el Jefe del Estado Mayor Conjunto de las Fuerzas Armadas, General de División Juan Martín Paleo, y con el Secretario de Asuntos Internacionales para la Defensa del Ministerio de Defensa, Francisco Cafiero. Pese a que no fue brindada información sobre los tópicos conversados en esta reunión entre funcionarios de ambas naciones, se supo extraoficialmente que se trataron puntos como el ofrecimiento de material bélico, desde blindados a ruedas y aviones de combate como los JF17, un programa chino-paquistaní del cual se habla hace tiempo.

33. CISMAR participa do exercício Trans-Regional Information Shipping Exercise I/2021 (T-RISE I/2021)

17.05.2021

Marinha Brasileira

<https://www.marinha.mil.br/noticias/cismar-participa-do-exercicio-trans-regional-information-shipping-exercise-i2021-t-rise>

O Centro Integrado de Segurança Marítima (CISMAR) participou, no período de 11 a 13 de maio, do Exercício T-RISE I/2021, conduzido pelo Comandante in Capo della Squadra Navale (CINCNAV) da Marinha Militar Italiana (MMI). O exercício é semestralmente realizado entre os participantes da *Virtual-Regional Maritime Network* (V-RMTC) e da *Trans-Regional Maritime Network* (T-RMN). Esta edição contou com a participação dos seguintes países: Argentina, Brasil, Bulgária, Chipre, Croácia, Geórgia, Grécia, Itália, Malta, Montenegro, Reino Unido, Romênia, Singapura, Turquia.

O exercício contribuiu para a integração entre os operadores da Marinha do Brasil (MB) e das diversas Marinhas pertencentes a V-RMTC e T-RMN, por meio da ferramenta SMART Fenix, que é acessada pela *internet*, sendo o sistema de monitoramento e compilação do panorama de superfície da MMI. O cenário criado para realização do exercício permitiu a identificação de embarcações, classificação de contatos de interesse, criação de áreas, bem como a partilha de informações via texto, empregando o *chat* disponibilizado na própria ferramenta.

O T-RISE possibilitou implementar, empregar e impulsionar a troca de informações sobre o Tráfego Marítimo e prover a compilação do Panorama de Superfície comum a fim de incrementar a Consciência Situacional Marítima Trans-Regional, que deve ser efetivada desde os tempos de paz. Esta foi também uma oportunidade para a MB ampliar seus conhecimentos por meio da troca de experiência com outras Marinhas, aumentar o intercâmbio de informações sobre o Tráfego Marítimo, bem como estreitar os laços com Marinhas amigas e troca de informações.

34. Brasil lanza su primer conglomerado de nanosatélites: la Constelación Catarina

15.05.2021

Defensa.com

<https://www.defensa.com/brasil/brasil-lanza-primer-conglomerado-nanosatelites-constelacion>

La Constelación Catarina integrará un conjunto de sistemas espaciales, que servirán, principalmente, a los sectores agrícola y de defensa civil nacional. El Consorcio Catarina es el grupo de entidades participantes, que coordinan sus actividades en la cooperación y actividades del programa, tras un respectivo acuerdo de adhesión. Proporciona, a través de instrumentos de cooperación, el intercambio de infraestructuras, conocimientos, datos, servicios y aplicaciones, fomentando la industria espacial en el estado de Santa Catarina. La Agencia Espacial Brasileña es miembro permanente del órgano y presidirá el Consejo de Catarina, responsable de aprobar los acuerdos

Todos los gastos correrán a cargo de los participantes, sin transferencias de fondos federales a entidades privadas. El conjunto de nanosatélites atenderá las demandas de Santa Catarina y otros estados interesados en las áreas de prevención de eventos climáticos y agricultura de precisión, también llamada agricultura 4.0.

La noticia fue anunciada por el ministro de Ciencia y Tecnología, Marcos Pontes, el presidente de la Agencia Espacial Brasileña (AEB), Carlos Henrique Teixeira de Moura y el diputado federal Daniel Freitas, quien representa a Santa Catarina en el Frente Parlamentario Mixto del Programa Espacial Brasileño. “Esto es innovador. No es el gobierno federal el que lo está haciendo. Fuimos al gobierno del estado, junto con el congresista Daniel Fretas y todo el banquillo de Santa Catarina. Se identificó un problema, estudiamos la mejor solución técnica y con todo ese ecosistema en Santa Catarina, que es innovador, se concluyó que una constelación de nanosatélites ayudará en demandas muy específicas de esa región”, dijo Carlos Moura, director de AEB.

El gobierno de Santa Catarina, a través de Defensa Civil, ha invertido en varios satélites geoestacionarios para monitorear el clima a fin de prevenir desastres, pero los resultados no han sido satisfactorios. La última falla fue el 17 de diciembre de 2020, cuando una fuerte lluvia provocó la muerte de 18 personas en Presidente Getúlio, en el Valle de Itajaí. El 30 de junio del año pasado, un ciclón bomba también provocó muertes y pérdidas millonarias en el estado.

Brasil cuenta con el desarrollo de nanosatélites por iniciativa del Instituto de Innovación en Sistemas Embarcados del Senai (Servicio Nacional de Enseñanza Industrial) en Florianópolis, en sociedad con Visiona, una empresa conjunta entre Telebras y Embraer, que ya gestiona el Satélite Geoestacionario de Defensa y Comunicaciones. Los satélites pesarán hasta 10 kilos, portarán gran tecnología y podrán brindar diversos servicios en las áreas de clima, protección ambiental, agricultura, ganadería y seguridad.

El equipo piloto de la “Constelación Catarina” debería lanzarse en 2021 y, para la primera etapa, que debería llevarse a cabo para 2024, está prevista la construcción y lanzamiento de otros 12 satélites.

El gobierno de Santa Catarina y la Federación de Industrias de ese estado venían pidiendo incentivos para la creación de una cadena de producción aeroespacial allí. La Universidad Federal de Santa Catarina acoge desde 2017 el Centro de Convergencia de Tecnología Aeroespacial, que cuenta con recursos de Fapesc

(Fundación de Investigación e Innovación de Santa Catarina) (**Javier Bonilla, corresponsal del Grupo Edefa en Brasil**).

35. El casco del primer submarino nuclear brasileño, el SN-BR, comenzaría a construirse este año

11.05.2021

Defensa.com

<https://www.defensa.com/brasil/casco-primer-submarino-nuclear-brasileno-sn-br-comenzaria-este>

Nuclep, la empresa estatal de equipos pesados vinculada al Ministerio de Minas y Energía, prevé cerrar el contrato para la producción del casco externo del primer submarino convencional de propulsión nuclear para la Marina brasileña, el SN-BR, en los próximos dos meses. La estimación es que la obra pueda costar alrededor de 40 millones de dólares.

El contrato, que se firmará con la Marina y el astillero ICN, el cual construye el buque, marcará el inicio de los trabajos en la estructura del que será el primer submarino de este tipo en Brasil, resultado de un acuerdo de transferencia de tecnología firmado en 2012 con Francia, en la iniciativa denominada Prosub (Programa de Obtención de Submarinos). El pasado año, la Marina de Brasil daba un paso significativo en el proceso de obtención de su primer submarino convencional de propulsión nuclear, objeto principal del Programa Submarino (PROSUB), mediante la firma de la Aprobación de las Bases del Anteproyecto (ABPP), paso inicial hacia el proceso de licenciamiento del proyecto y el proceso de construcción de SN-BR.

El Comandante de Marina, mediante Ordenanza No. 332, de 16 de noviembre de 2020, creó el cargo de Autoridad Naval de Seguridad y Calidad Nuclear (ANSNQ), designando al Director General de Desarrollo Nuclear y Tecnológico de la Marina, Almirante de Escuadrón Marcos Sampaio Olsen, para ejercerlo, concomitantemente con las demás tareas a su cargo. Este documento normativo también establece la estructura de esa Autoridad, que tiene la tarea de promover el licenciamiento e inspección de medios navales, de sus plantas nucleares embarcadas para propulsión, además del transporte de su combustible nuclear.

Para que la ABPP se materialice, la Agencia de Calidad y Seguridad Nuclear Naval (AgNSNQ) elaboró una nota técnica recomendando su aprobación a ANSNQ, precedida de un examen exhaustivo y mejoras en los documentos técnicos que fueron remitidos por la Coordinación General del Programa de Desarrollo de Submarino de Propulsión Nuclear, con el apoyo del Centro de Desarrollo Submarino y la Dirección de Desarrollo Nuclear de la Armada, Organizaciones Militares se unieron a la estructura orgánica de la Dirección General de Desarrollo Nuclear y Tecnológico de la Armada. (**Javier Bonilla**)

ASTROS & INDÚSTRIA DE DEFESA

Destaques sobre Indústria de Defesa e andamentos do Projeto ASTROS

36. Reconhecimento para o tiro de astros na operação Amazônia

12.05.2021

Exército Brasileiro

https://www.eb.mil.br/web/noticias/noticiario-do-exercito/-/asset_publisher/MjaG93KcunQI/content/id/13285267

Formosa (GO) – No dia 30 de abril, integrantes do Comando de Artilharia do Exército (Cmdo Art Ex), sediado em FORMOSA (GO), realizaram um reconhecimento aéreo, no contexto da Operação AMAZÔNIA 2021, com apoio do 4º Batalhão de Aviação do Exército (4º BAvEx), a fim de levantar as posições para a realização do tiro do sistema de mísseis e foguetes ASTROS 2020.

37. Comandante do exército sul dos Estados Unidos visita comando de artilharia

11.05.2021

Exército Brasileiro

http://www.eb.mil.br/web/noticias/noticiario-do-exercito/-/asset_publisher/MjaG93KcunQI/content/id/13281931

Formosa (GO) – Na manhã do dia 5 de maio, o Comando de Artilharia do Exército (CmdoArtEx) recebeu a visita do Comandante do Exército Sul dos Estados Unidos da América, *Major General Daniel R. Walrath*. Na oportunidade, o comandante norte-americano conheceu as instalações do Forte Santa Bárbara e o Sistema Astros 2020 e analisou a possibilidade de adestramento conjunto entre os dois exércitos no Campo de Instrução de Formosa.

Acompanharam a atividade o Subcomandante do Exército Sul dos Estados Unidos da América para Interoperabilidade, General de Brigada Alcides Valeriano de Faria Junior, e o 5º Subchefe do Estado-Maior do Exército, General de Brigada Otávio Rodrigues de Miranda Filho.

As autoridades visitaram o Sistema de Treinamento Baseado em Computador (TBC), a plataforma de Simulação Virtual para o adestramento dos operadores do Sistema Astros no Centro de Instrução de Artilharia de Mísseis e Foguetes (CI ArtMslFgt) e conheceram a família de viaturas do Sistema. A comitiva também visitou o Centro de Logística de Mísseis e Foguetes (C Log MslFgt), onde foi apresentada a infraestrutura de apoio à manutenção Astros.

38. Aeronáutica e Embraer firmam cooperação para desenvolver aeronaves remotamente pilotadas

27.04.2021

Ministério da Defesa

<https://www.gov.br/defesa/pt-br/centrais-de-conteudo/noticias/aeronautica-e-embraer-firmam-cooperacao-para-desenvolver-aeronaves-remotamente-pilotadas>

Brasília (DF), 27/04/2021 – Para aumentar a capacidade de manutenção da soberania do espaço aéreo brasileiro, a Aeronáutica e a Embraer realizarão estudo conjunto para desenvolver aeronaves remotamente pilotadas. O documento que estabelece a cooperação foi assinado, sexta-feira (23), no Comando da Aeronáutica, em Brasília (DF). A intenção é utilizar tecnologia nacional na construção de veículo aéreo não tripulado (VANT) de classe superior. O desenvolvimento dessas aeronaves, conhecidas como drones, contribui para fomentar a Base Industrial de Defesa (BID), além de atender necessidades do País no âmbito aéreo.

Mais eficiência

Sistemas e veículos aéreos não tripulados são importantes aliados da Força Aérea, que possui vasta experiência no tema. Estudos internos apontaram que, utilizados em quantidades adequadas, a partir de diferentes bases aéreas do território nacional, aumentariam a eficiência de operações de inteligência, vigilância e reconhecimento. Além disso, propiciariam mais êxito com a performance e o desempenho adequados para a dimensão territorial, fronteira e costeira brasileira.

39. Iveco Defense Vehicles entrega el primer 4x4 LMV-BR al Ejército de Brasil

29.04.2021

Defensa.com

<https://www.defensa.com/brasil/iveco-defense-vehicles-entrega-primer-4x4-lmv-br-ejercito-brasil>

Ayer se entregó al Ejército de Brasil el primero de los 32 vehículos LMV-BR, en función del contrato suscrito en 2019, para ser evaluados y aprobados, durante una ceremonia realizada en la planta de Vehículos de Defensa de Iveco, en Sete Lagoas (Minas Gerais). El evento contó con la presencia de representantes de la empresa y de la Fuerza. Las 31 unidades restantes de este contrato serán entregadas en 2022, como parte del proceso de modernización de los medios del Ejército.

Además de las configuraciones estándar de la plataforma LMV 4x4, todos los vehículos están equipados con Sistemas de Armas y Sistemas de Comando y Control, según lo solicitado por el Ejército. El LMV-BR fue elegido en 2015 por el Ejército de Brasil como el nuevo Vehículo Blindado Multitarea, Ligero (VBMT-LR). El montaje final de los vehículos, fabricados en Bolzano, se realiza en la factoría de Sete Lagoas, donde se integran varios componentes nacionales - armamento, así como mando y control. El proyecto prevé la

adquisición de 186 unidades e Iveco Defense Vehicles espera comenzar la producción de los próximos lotes en 2022.

Iveco Defense Vehicles ya suministra al Ejército Brasileño la familia de vehículos blindados anfibios Guarani VBTP 6 x 6. Se han entregado más de 480 unidades desde 2012, tras la firma del primer contrato en 2009. Ya se han exportado unidades guaraníes 6 x 6 a otros clientes. El vehículo LMV se concibe de alguna manera como el miembro más pequeño de la familia Guarani, un proyecto que crecerá hasta fabricarse el futuro 8 x 8, con cañón 105 mm.

40. ABIMDE comunica que a 6ª Mostra BID Brasil será de 7 à 9 de dezembro deste ano

14.05.2021

Defesa Aérea e Naval

<https://www.defesaaereanaval.com.br/defesa/abimde-comunica-que-a-6a-mostra-bid-brasil-sera-de-7-a-9-de-dezembro-deste-ano>

A ABIMDE (Associação Brasileira das Indústrias de Materiais de Defesa e Segurança) comunica que a 6ª Mostra BID Brasil, prevista para agosto, acontecerá entre os dias 7 e 9 de dezembro de 2021, em Brasília. A decisão pelo adiamento está fundamentada no compromisso da ABIMDE com a qualidade do evento e com a segurança dos expositores e visitantes, considerando o atual cenário da pandemia da Covid-19 e as normas vigentes no Distrito Federal, que impedem, nesta data, a realização de grandes eventos.

A nova agenda foi definida com base no cronograma do Plano Nacional de Imunização contra o Coronavírus que deverá garantir um ambiente mais seguro e permitir a flexibilização das normas restritivas. A ABIMDE espera ter a compreensão de todos os apoiadores e expositores pela difícil, mas necessária, decisão de adiamento. Temos também a grata satisfação em informar que a Mostra BID Brasil atingiu 100% de ocupação e, pela primeira vez na história do evento, haverá uma expansão da planta, com a criação de novos estandes.

41. MBDA realiza o primeiro lançamento do MMP de um veículo blindado Jaguar

11.05.2021

Defesa Aérea e Naval

<https://www.defesaaereanaval.com.br/defesa/mbda-realiza-o-primeiro-lancamento-do-mmp-de-um-veiculo-blindado-jaguar>

Em 14 de abril, a MBDA e a Nexter participaram do primeiro lançamento lock-on de um míssil MMP de médio alcance de um veículo blindado de reconhecimento e combate Jaguar (EBRC – Engin Blindé de Reconnaissance et de Combat). A DGA executou os disparos em seu Centro de Teste de Técnicas Terrestres

como parte da qualificação do JAGUAR. Lançado do Pod retrátil na torre do Jaguar na configuração de dois mísseis, o MMP atingiu seu alvo com sucesso. A integração do MMP ao JAGUAR está sendo realizada em etapas durante a qualificação. Este disparo é o primeiro estágio, demonstrando com sucesso acertar um alvo fixo. O sistema oferecerá a capacidade de destruir alvos terrestres fixos ou móveis, incluindo blindados de última geração. O alvo poderá ser direto ou BLOS (Beyond-Line-Of-Sight). Ele também será preciso e com danos colaterais mínimos, qualidades que caracterizam o MMP.

As capacidades do MMP, integradas à torre do Jaguar pela Nexter, junto com a estação de arma controlada remotamente desenvolvida pela Arquus, a solução Scorpion desenvolvida pela Thales e o canhão de 40 mm desenvolvido pela CTAI, dão ao Jaguar um papel fundamental no combate. Durante esta demonstração, o Optrolead PASEO fez a interface com o sistema de mísseis, oferecendo aquisição optrônica em tempo real durante o dia e a noite. Isso dá ao Jaguar excelentes capacidades de observação e identificação de longo alcance.

Frédéric Michaud, Head of Battlefield Sector for Sales & Business Development da MBDA, disse que “Este disparo marca um primeiro passo importante do trabalho realizado com a Nexter para desenvolver a torre Jaguar e integrar o MMP em um sistema de armas construído sobre as mais recentes soluções tecnológicas. Esta configuração de torre com dois mísseis expande consideravelmente o poder de fogo do veículo”.

David Marquette, gerente de projeto do Jaguar na Nexter, elogiou o trabalho excepcional da equipe do programa neste projeto de integração de sistema extremamente importante: “Esse é um marco importante, demonstrando as habilidades técnicas de nossas equipes em projetar e desenvolver uma capacidade operacional diferente de qualquer outra em o mundo”.

42. P. Albuquerque (Abimde): “A pandemia acabou por abrir muitas oportunidades para o setor de defesa do Brasil”

10.05.2021

Infodefensa

<https://www.infodefensa.com/latam/2021/05/10/noticia-albuquerque-abimde-pandemia-acabou-abrir-muitas-oportunidades-setor-defesa-brasil.html>

A Abimde (Associação Brasileira das Indústrias de Materiais de Defesa e Segurança) anunciou no início de maio corrente uma parceria com a Fundação Dom Cabral (FDC), uma das nove melhores escolas de negócios do mundo, segundo o ranking do jornal britânico Financial Times (edição de 2020), visando atender as empresas associadas (mais de 200) disponibilizando conhecimento e formação em gestão para potencializar negócios. O lema "ABIMDE de todos para todos" norteia diversas frentes de trabalho da Associação, dentro e fora do Brasil, seja na difícil questão tributária, no apoio as exportações ou na criação de uma instituição de certificação e homologação de produtos de Defesa, dentre outras ações.

Fundada há 35 anos, a entidade representativa do setor atua como "A voz da Base Industrial de Defesa e Segurança" promovendo e valorizando as empresas da BIDS dentro do território nacional e no exterior por meio de eventos, contatos e relacionamentos com todas as esferas governamentais - federal, estadual e municipal - apresentando os anseios dos empresários e desafios a serem suplantados.

Para falar sobre as atividades recentes da Associação, Infodefensa entrevistou Paulo Albuquerque, diretor de projetos e relações institucionais da Abimde.

Albuquerque é oficial da reserva na Marinha do Brasil, membro permanente da Abeic (Associação Brasileira de Estudos de Inteligência e Contraineligência) e possui os cursos de Estado-Maior da carreira e o superior de inteligência estratégica da Escola Superior de Guerra (ESG).

A ênfase em exportação é uma marca dessa gestão a frente da entidade? Quais os sucessos alcançados?

A exportação é uma busca constante das empresas brasileiras da Base Industrial de Defesa e Segurança (BIDS). A atual gestão da Abimde está atenta e tem atuado fortemente para criar novas oportunidades de negócios. Nós realizamos diversos eventos, como a série virtual Brazilian Defense Day, que apresentou nossas empresas para os mercados do Egito e dos Emirados Árabes Unidos. E em abril atuamos em um grande evento B2B em parceria com o governo da Turquia. Isso sem falar em outros junto a representantes de Portugal, Itália, Espanha e Índia, para citar alguns países. Além desses eventos, a retomada das feiras internacionais de Defesa abriu diversas janelas para empresas brasileiras em Abu Dhabi e no Catar (IDEX e Milipol, respectivamente), num esforço de organização conjunto entre a Abimde e APEX-Brasil, com apoio dos Ministérios da Defesa e de Relações Exteriores.

Como você avalia o estado atual do mercado de defesa e o impacto da pandemia nos resultados da associação?

Uma característica marcante do setor é a inovação e a tecnologia de ponta. E, por isso mesmo, a pandemia acabou por abrir muitas oportunidades para o setor de Defesa. As empresas acabaram criando novas oportunidades, muitas vezes explorando a potencialidade dual de suas tecnologias. Por exemplo, empresas que fabricavam câmeras térmicas para vigilância nas fronteiras agora têm seus equipamentos utilizados para monitoramento térmico em eventos e espaços públicos, como hospitais, aeroportos e shoppings. Outras empresas passaram a fabricar máscaras e respiradores, além de tantos outros equipamentos. Então, podemos dizer que esse cenário acabou gerando uma expansão para o segmento, garantindo empregos e abertura de novas vagas. Importante ressaltar também a rapidez e precisão com que as empresas de defesa trabalharam para apoiar a sociedade nesse momento crítico, demonstrando assim, a dualidade do setor.

Qual é o papel da Abimde diante do desejo crescente de empresas estrangeiras em se associarem a empresas locais?

As parcerias com empresas estrangeiras são relevantes para a BIDS, principalmente se significarem o ingresso das nacionais em cadeias globais de valor. Além disso, pode ser oportuno à prontidão, que certos desenvolvimentos tecnológicos nacionais sejam acelerados por meio de parcerias de co-desenvolvimento. Nós acompanhamos o mercado, atentos a tudo e buscando novas oportunidades favoráveis às indústrias e ao país.

As grandes empresas do setor utilizam suas cadeias produtivas para ampliar os mercados e exportar. O que a Abimde está fazendo para que as PMEs surfem nessa onda?

Abimde de todos para todos é um lema que a atual gestão criou e segue com afinco. Nosso trabalho é fazer com que o crescimento da BIDS contemple pequenas, médias e grandes empresas, criando oportunidades de negócio para todas as associadas. A Abimde possui uma extensa e sólida rede de relacionamentos, que é de vital importância para que as empresas do setor fechem novos negócios e gerem mais emprego e renda. Além disso, num esforço contínuo de melhor apoiar as empresas da BIDS e utilizando o novo ambiente regulatório proporcionado pela Portaria nº189 -EME de 18 de agosto de 2020 (Normas Reguladoras dos

Processos de Avaliação de Produtos Controlados pelo Exército), criou uma nova divisão de certificação de produtos controlados.

Quais serão as vantagens disso?

As empresas fabricantes vinham enfrentando um fator muito prejudicial à competitividade com uma fila de espera para homologação de produtos controlados que girava em média de um ano e meio a dois anos. A certificação de produtos que será proporcionada pela ABIMDE, além de reduzir drasticamente o tempo de espera e dar garantia ao mercado da qualidade no atendimento às normas técnicas, gerará mais valor aos produtos que eram antes homologados e recebiam um atestado de cumprimento de normas técnicas e que passarão a receber um certificado de conformidade com selo Inmetro/Abimde, inclusive com reconhecimento internacional de certificação.

A Abimde avançou na formalização funcional de uma política fiscal que desonere o setor?

Não é uma tarefa fácil enfrentar o intrincado sistema tributário brasileiro, mas temos obtido alguns avanços que nos mostram a importância de seguir trabalhando em prol de reduzir as distorções. Um exemplo é a nota técnica que desenvolvemos com sugestões para gerar isonomia tributária entre as empresas que vendem a partir do Brasil com aquelas que vendem a partir do exterior. Essa nota deu origem à PLP 244/20, que foi protocolada no Congresso Nacional pelo deputado federal Luiz Philippe de Orleans e Bragança (PSL-SP), passou pelo crivo dos líderes partidários e deve ser votada em plenário. Outro exemplo é nossa luta para manter reduzida a base de cálculo do ICMS para alguns produtos e serviços de Defesa. Temos conseguido, ao lado de outras entidades, manter essas reduções por prazos determinados, mas queremos que essas condições sejam prorrogadas por mais tempo. Outra ação importante da Abimde foi pela prorrogação dos regimes de tributação especial, como o Retid e o Retaero. Os incentivos fiscais ao setor são importantes para manter a competitividade de nossas empresas.

O que podemos esperar de novidades ABIMDE na 6ª Mostra BID Brasil?

A 6ª Mostra BID Brasil é um evento único e extremamente importante para a consolidação do setor nos dias atuais, servindo de vitrine para as empresas da BIDS e fomentando a recuperação econômica do país. Teremos mais de 50 expositores e mais de 30 apoiadores, que irão mostrar suas inovações tecnológicas aos principais players nacionais e internacionais, reforçando inclusive a dualidade de seus produtos e serviços. Não temos dúvidas de que a Mostra BID Brasil é um marco no segmento e a cada edição busca inovar e trazer novidades para que as empresas possam aproveitar ao máximo sua participação. É um evento onde reunimos embaixadas, adidos militares, Forças Armadas, Polícias Civil, Militar e Federal, além de entidades representativas. Estamos confiantes que o evento reforce e potencialize a BIDS. Sabemos dos desafios para este cenário de pandemia, mas estamos adotando todas as medidas sanitárias necessárias para segurança dos participantes. Acredito que a Mostra será um vetor de retomada para nossa indústria e incentivo a ampla participação do segmento.

43. Chile y Brasil analizan el desarrollo de la industria de Defensa y la Ciberdefensa

05.05.2021

Infodefensa

<https://www.infodefensa.com/latam/2021/05/05/noticia-chile-brasil-analizan-desarrollo-industria-defensa-ciberdefensa.html>

Los ministerios de Defensa de Chile y Brasil realizaron la XI Reunión del Grupo de Trabajo Bilateral de Defensa (GTBD) donde abordaron diversos temas de cooperación en temas de Defensa. Según la Subsecretaría de Defensa de Chile (SSD), el pasado 28 de abril, a través de videoconferencia, se celebró la reunión bilateral copresidida por el jefe de la División de Relaciones Internacionales de la SSD, George Brown Mc Lean, y el subjefe de Asuntos Internacionales del Estado Mayor Conjunto de las Fuerzas Armadas de Brasil, general de brigada Himario Brandão Trinas, acompañados por los integrantes de las respectivas delegaciones técnicas. El equipo chileno estuvo integrado por el jefe de la División de Desarrollo Tecnológico e Industria de la SSD, Óscar Bustos; el jefe del Departamento de Asuntos Bilaterales y Multilaterales, capitán de navío Sergio Guevara; y representantes de las Divisiones de Relaciones Internacionales y Desarrollo Tecnológico e Industria y del Estado Mayor Conjunto. En la reunión del GTBD, principal mecanismo de diálogo y trabajo entre ambos ministerios de Defensa, se abordaron distintas materias de interés mutuo, tales como el rol de las Fuerzas Armadas en apoyo a la autoridad civil en el combate a la pandemia del Covid-19, y la cooperación bilateral en materias de industria de Defensa y Ciberdefensa, entre otros.

Además se revisó el cumplimiento de las tareas de cooperación cumplidas durante el último periodo y acordadas aquellas a desarrollar en el ciclo 2021-2022 entre ambos ministerios. Durante la cita, el ministro de Defensa de Brasil, Walter Souza Braga Netto, se hizo presente para extender un saludo a la contraparte chilena, particularmente, al ministro Baldo Prokurica, destacando la importancia de la reunión. Al finalizar el encuentro ambas partes acordaron mantener el diálogo y la comunicación periódica para realizar un nuevo encuentro telemático entre el subsecretario de Defensa de Chile, Cristián de la Maza, y el jefe del Estado Mayor Conjunto de las Fuerzas Armadas de Brasil, teniente de brigada aérea Raúl Botelho.

44. A indústria do setor vai se reunir em Santa Catarina

18.05.2021

TecnoDefesa

<https://tecnodefesa.com.br/a-industria-do-setor-vai-se-reunir-em-santa-catarina/>

A segunda edição da SC Expo Defense, feira de tecnologias e produtos de defesa, está prevista para os dias 2 e 3 de setembro, na Base Aérea de Florianópolis (BAFL). Trata-se de uma iniciativa da Federação das Indústrias do Estado de Santa Catarina (FIESC), por meio do seu Comitê da Indústria de Defesa (ComDefesa) e da Força Aérea Brasileira (FAB).

Estarão presentes profissionais da área com o objetivo de mostrar o que há de mais moderno em produtos e tecnologias, promovendo a integração das Forças Armadas com a indústria, centros de tecnologia e academia.

O presidente da FIESC, Mario Cezar de Aguiar, destacou que o setor de defesa oferece oportunidades diferenciadas de novos negócios. As Forças Armadas adquirem produtos que englobam praticamente todos os campos como alimentos, roupas, máquinas, equipamentos, eletrônicos, software e tecnologia, itens amplamente produzidos em Santa Catarina. “A atividade de defesa emprega tudo aquilo que as pessoas e as empresas usam no dia a dia, mais os produtos específicos de sua atuação. A tecnologia militar agrega valor e contribui para a internacionalização da indústria local. Assim, vamos promover a aproximação com

as demandas militares”, afirmou. Ele registrou que Santa Catarina já tem 11 indústrias no seleto grupo das 110 brasileiras consideradas estratégicas de defesa. Isso significa que elas atendem a uma série de requisitos especiais para fornecer à área militar.

O presidente do ComDefesa, Cesar Augusto Olsen, espera que a nova edição da SC Expo Defense venha a potencializar os negócios. “A primeira foi excepcional. Para este ano, estamos preparando um perfil mais internacional, com a participação de outros países, que serão convidados a conhecer os produtos fabricados pela nossa indústria”, disse.

Também estão programadas sessões de negócios e palestras que irão abordar temas de interesse da indústria. Haverá a presença de autoridades civis e militares, representantes governamentais e executivos. Para a segurança a feira contará com os mais rigorosos protocolos sanitários.



A S T R O S

PROCAD DEFESA
