



NPS IN THE NEWS

Weekly Media Report – January 11-17, 2022

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RESEARCH:

[We've Taught Kids to Fear School Shootings. But Lost Sight of How Uncommon They Are](#)

(USA Today 14 Jan 21) ... James Alan Fox

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[Indian Ocean Region Needs to Prioritize UDA Framework](#)

(Sunday Guardian Live 15 Jan 21) ... Arnab Das

The Security And Growth for All in the Region (SAGAR) declaration of Prime Minister Narendra Modi will be truly realised only with an effective underwater domain awareness (UDA)... The Naval Facility Point Sur was another interesting component of the SOSUS project. The **Naval Postgraduate School** Monterey, extensively used the Point Sur underwater facility to undertake field experimental validation of underwater sonar development during the Cold War period. The infrastructure was a state-of-the-art R&D facility, exclusively for the US Navy that was started in 1949 to serve the Cold War security requirements, however had to be shut down in 1984 due to budget constraints to fund exclusive naval facilities.

FACULTY:

[Why would Putin invade Ukraine?](#)

(Washington Post 16 Jan 22) ... Aleksandar Matoyski

Troubles at home may be his strongest motive

The looming threat of a full-scale Russian attack on Ukraine kept the world on edge for much of 2021, and for good reason — an attack of this magnitude would arguably be the most significant invasion of a European country by a more powerful neighbor since Adolf Hitler's assault on Poland in 1939... Aleksandar Matovski is an assistant professor in the department of national security affairs at the **Naval Postgraduate School** and the author of "Popular Dictatorships: Crises, Mass Opinion, and the Rise of Electoral Authoritarianism" (Cambridge University Press, 2022). The views expressed here are those of the author and do not reflect the views of the U.S. government, the Defense Department or the Navy.

[Uncomfortable Expositions for Unpopular Questions #1: Expendable Aircraft on Call](#)

(CIMSEC 13 Jan 22) ... Naval Postgraduate School Senior Lecturer Harrison Schramm and Collin Fox

This is the first in a series of articles that ask necessary but unpopular questions of the West's defense-industrial complex. The best questions for this series are also the worst: they should be unpopular to ask and produce disquieting answers — when an answer is even possible... Lieutenant Commander Collin Fox, U.S. Navy, is a



foreign area officer serving as a military advisor with the Department of State. He is a graduate of the **Naval Postgraduate School** and the Chilean Naval War College.

Harrison Schramm is a retired Naval Aviator. He is President of the Analytics Society of INFORMS and a Principal Research Scientist at Group W. College and current **Naval Postgraduate School** Senior Lecturer.

NPS professor wins big in “Jeopardy!” Professors Tournament final

(DC Military 11 Jan 22) ... Lt. Cmdr. Edward Early

Who is Dr. Sam Buttrey?

The Naval Postgraduate School (NPS) professor will forever be memorialized as a trivia answer — phrased, of course, in the form of a question — for avid fans of the hit TV quiz show “Jeopardy!” Buttrey, an associate professor in NPS’ Operations Research department, was the big winner in the inaugural “Jeopardy!” Professors Tournament, which was recorded in Los Angeles earlier this fall and televised Dec. 6-17.

ALUMNI:

RDML Christopher Alexander on Accelerating Surface Navy Tactical Excellence

(CIMSEC 11 Jan 22) ... Dmitry Filipoff

CIMSEC had the opportunity to discuss the evolution of the Surface Navy’s tactical development with Rear Admiral Christopher Alexander, commander of Naval Surface and Mine Warfighting Development Center (SMWDC). In this discussion, RDML Alexander covers new initiatives on measuring tactical experience, the increasing demand for Surface Warfare Advanced Tactical Training (SWATT) exercises, and how SMWDC is transforming to accelerate tactical skill across the surface fleet... Rear Admiral Christopher Alexander, a graduate of the U.S. Naval Academy and the **Naval Postgraduate School**, assumed the role of Commander, Naval Surface and Mine Warfighting Development Center in May 2021. Alexander commanded USS Sampson (DDG 102), USS Princeton (CG 59), and the Surface Warfare Schools Command.

10 New Space Explorers Join NASA Training for Future Missions

(East Mojo 11 Jan 22)

With the addition of these 10 members of the 2021 astronaut candidate class, NASA now has selected 360 astronauts since the original Mercury Seven in 1959...42, major, retired, U.S. Marine Corps, grew up in Debary, Florida. He holds a degree in mechanical engineering from the University of North Florida and a master’s degree in aerospace engineering from the **Naval Postgraduate School**. He is a distinguished naval aviator who participated in exercises throughout the Asia Pacific region and conducted combat missions in support of Operation Enduring Freedom

Board Elects Lukas as Chairperson, Wilson as Vice Chairperson

(Charles County Public School 11 Jan 22)

The Board of Education of Charles County today elected Michael Lukas as its chairperson and Latina L. Wilson as its vice chairperson at the start of the Jan. 11 meeting. The Board votes annually in January to elect a chairman and vice chairman. Both the chairperson and vice chairperson serve a one-year term... Lukas retired as an engineer and branch manager for the U.S. Department of the Navy where he has worked for more than 35 years. Lukas attended Prince George’s Community College and the University of Maryland, College Park where he earned a degree in electrical engineering. He completed graduate studies in systems engineering at George Mason University and the **Naval Postgraduate School**. Lukas has volunteered with the Greater Waldorf Jaycees where he served as the community vice president. He has lived in Charles County for more than 25 years with his wife, Kim, who is a teacher at the College of Southern Maryland, and their son who is a 2016 CCPS graduate.

Hanson to Lead North Dakota Homeland Security

(Devils Lake Journal 14 Jan 22) ... K. William Boyer

Maj. Gen. Al Dohrmann, North Dakota Department of Emergency Services (DES) director, announced Darin Hanson will serve as the state’s director of Homeland Security... In January 2021, Hanson earned his master’s degree in Security Studies at the **Naval Postgraduate School** (NPS), Center for Homeland Defense and Security (CHDS). While there, he joined Homeland Security officials from across the nation for an 18-month curriculum and



authored a thesis titled, “Normalizing Cybersecurity: Improving Cyber Incident Response with the Incident Command System.”

Webb Assumes Command of Warlocks

(DVIDS 14 Jan 22) ... Nicholas Pasquini

Cmdr. Jeffrey Webb relieved Cmdr. Ian Lilyquist as commander of the U.S. Naval Research Laboratory’s Scientific Development Squadron (VXS) 1, the Warlocks, Jan. 14 during a change of command ceremony held at Naval Air Station Patuxent River... Webb, a native of Boise, Idaho, graduated from the U.S. Naval Academy in 2003 with a Bachelor of Science degree in Engineering, and received his Master’s of Science in System Engineering from the **Naval Postgraduate School**, with distinction, in June 2015.

USS Tennessee Blue Changes Command

(DVIDS 14 Jan 22) ... Chief Ashley Berumen

The Ohio-class ballistic-missile submarine USS Tennessee (SSBN 734) Blue Crew held a change of command ceremony onboard Naval Submarine Base Kings Bay, Georgia, Jan. 14... Wilson, the incoming commanding officer, graduated from the U.S. Naval Academy with a Bachelor of Science in ocean engineering. He received a Master of Business Administration from the **Naval Postgraduate School**.

FACULTY PUBLISHED BOOKS:

Historical Dictionary of Afghanistan

(ROWMAN) ... Thomas Johnson and Ludwig W. Adamec

Afghanistan is an extremely complex and nuanced country that has been one of the centers of imperial conflict at least for 150 years. From the Czarist Russia’s march south in the 19th Century threatening British India, three Anglo-Afghan Wars, the Soviet Invasion and occupation of Afghanistan starting in December 1979 and the resulting anti-Soviet Jihad by the Afghan Mujahideen to Kabul’s and their allies’ (U.S. and NATO) conflict with the Taliban, Afghanistan has been one of the centers of important international and regional conflicts and events.

Historical Dictionary of Afghanistan, Fifth Edition contains a chronology, an introduction, and an extensive bibliography. The dictionary section has more than 1,000 cross-referenced entries on important personalities as well as aspects of the country’s politics, economy, foreign relations, religion, and culture. This book is an excellent resource for students, researchers, and anyone wanting to know more about Afghanistan.

[Historical Dictionary of Afghanistan, Fifth Edition - 9781538149294 \(rowman.com\)](https://www.rowman.com/9781538149294)

UPCOMING NEWS & EVENTS:

Jan 24-25: [Black Sea Symposium](#)

Jan 25-28: [Center for Executive Education SC Workshop](#)



RESEARCH:

We've Taught Kids to Fear School Shootings. But Lost Sight of How Uncommon They Are

(USA Today 14 Jan 21) ... James Alan Fox

The recent shooting at Michigan's Oxford High School in which four students were killed and seven others were injured has rekindled fears for students and their parents everywhere – fears that had been eclipsed by other safety concerns while schools were shuttered due to COVID-19.

With most students back in classroom after the holiday break, in the minds of some folks, it is once again open season for school shootings: time to beef up security, arm teachers, and train students how to “run, hide, fight” in case theirs is the next school to be confronted by an armed assailant.

The risk of school shootings has been a major point of concern over the past decade. From 2010 through 2021, there were more than 800 K-12 school-related shootings in the U.S. involving a total of 1,149 victims (910 of whom were injured in any way), according to a database compiled at the **Naval Postgraduate School's** Center for Homeland Defense and Security.

That's an average of more than one shooting incident a week. Sounds awful indeed.

In-school shootings and fatalities

It is noteworthy that fewer than half of the victims (532, to be exact) were students; the rest included staff members, parents, plus hundreds with no connection to the school whatsoever.

Moreover, 94 of the student victims suffered gunshot wounds that proved to be fatal; some who were targeted escaped unharmed or suffered only minor injury.

In the realm of school shootings, it is, as they say in real estate, all about “location, location, location.” Around three-quarters of all victims, including students, were shot at a location outside of the school building – in the parking lot, on the athletic fields, on a school bus, or at an off-campus school event.

In-school shootings are somewhat more likely to result in fatalities given the confined space that limits the ability to escape. Over the past dozen years, nearly 70 students have been fatally shot inside of school during school hours, a death toll that translates to an average of almost six student fatalities per year.

That is out of the more than 50 million children attending public or private schools – for a roughly one-in-10 million chance of death by gunfire.

Most of those in-school student fatalities were associated with five mass killings (20 students at the Sandy Hook Elementary School in Connecticut; four students at Marysville High School in Washington; 14 students at the Marjory Stoneman Douglas High School in Florida; eight students at Santa Fe High School in Texas; and four at the recent incident in Oxford, Michigan).

Since 2010, there have been 19 in-school shootings with at least one student fatality, for an average of less than two per year.

And that is out of 130,000 schools nationwide.

Notwithstanding the occasional fatal assault, schools are safe. While in class, students enjoy a level of supervision and structure that they don't necessarily have during the riskier after-school hours or even while at home. Of course, considering the relative risks amid the omicron surge, we must at this juncture focus more on getting vaccine shots in student arms and worry less about students getting shot by someone armed.

What do you think? Shape your opinion with a digest of takes on current events.

Realistically assessing the risk

We can all sympathize with the families who lost a child to gun violence at Oxford High School and the handful of other schools that have endured similar dreadful events. The pain caused by these tragedies is immense and wide-ranging. We should continue to encourage vigilance so that students and teachers might help to avert a tragedy when observing signs suggesting an impending attack.



At the same time, however, we must be just as concerned not to instill fears that are well beyond the actual level of risk. Many students are traumatized by participating in unannounced and realistic active shooter drills, and surrounding them with fortress-like security serves as a constant reminder of impending danger.

Finally, schools can make better use of scarce resources than to spend excessive amounts on security measures designed to ward off the unlikely active shooter. Instead, investment in teachers, guidance counselors and school psychologists can help millions of school children – not just the handful who might come to school armed with an intent to kill.

[Shooter drills terrify students. And overplay the risk at schools. \(usatoday.com\)](#)

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Indian Ocean Region Needs to Prioritize UDA Framework

(Sunday Guardian Live 15 Jan 21) ... Arnab Das

The Security And Growth for All in the Region (SAGAR) declaration of Prime Minister Narendra Modi will be truly realized only with an effective underwater domain awareness (UDA).

Pune: The Indo-Pacific strategic construct has become the most critical geopolitical and geostrategic paradigm in the recent past. Starting with the Japanese Prime Minister Shinzo Abe announcing it in Indian Parliament in 2007, the Indo-Pacific has come a long way. Quoting the Mughal scholar-prince Dara Shikoh, Abe spoke of the “confluence of the two seas”—the Indian and Pacific Oceans—that were undergoing a “dynamic coupling as seas of freedom and of prosperity.” India and Japan, said Abe, shared an interest in and responsibility for securing these seas “by joining forces with like-minded countries”. Ironically, both India and Japan find no place in the newly announced AUKUS, in spite of being an integral part of the Quadrilateral Security Dialogue (Quad). AUKUS is a formulation for strategic dominance in the Indo-Pacific.

The Cold War era found substantial efforts to build Underwater Domain Awareness (UDA) in the Greenland, Iceland and United Kingdom (GIUK) region. These were the initial days of sonar design and development and coupled with the Cold War realities, the field experimental R&D was given top priority. Starting with the setting up of the Sound Surveillance System (SOSUS), in 1949 the journey has been long and with multiple twists and turns. It was an exclusive Naval Facility (NAVFAC) for deployment of passive sonars by the United States (US), to track the Soviet submarines, until it was declassified in 1991 at the end of the Cold War. The system was capable of long-range oceanic surveillance due to the deployment at the deep sound channel or the SOFAR channel. The linear arrays of hydrophones placed within the sound channel enabled beam forming processing, at the shore stations to form azimuthal beams. The SOSUS was the first of its kind field deployment of passive arrays that provided continuous acoustic data for massive UDA efforts. The arrays were deployed both in the Atlantic and the Pacific Ocean and grew in numbers in the first three decades, before it started to get progressively deactivated in 1980. Post 1991, the data was also made available to non-military researchers for processing marine mammal sounds and others. One can observe the location of the SOSUS, in figure 1.

The Naval Facility Point Sur was another interesting component of the SOSUS project. The **Naval Postgraduate School** Monterey, extensively used the Point Sur underwater facility to undertake field experimental validation of underwater sonar development during the Cold War period. The infrastructure was a state-of-the-art R&D facility, exclusively for the US Navy that was started in 1949 to serve the Cold War security requirements, however had to be shut down in 1984 due to budget constraints to fund exclusive naval facilities.

The end of the Cold War era saw a significant decline in the UDA focus and the American establishment was of the view that their unipolar status was unchallenged. However, towards the end of the 20th century, the strategists monitoring the Chinese capabilities realised that China has developed formidable submarine fleet to challenge the US hegemon. This was a significant shift in the Anti-Submarine Warfare (ASW) requirements. The necessity to deploy underwater assets in the tropical littoral



waters of the South China Sea (SCS), to detect the Chinese submarine fleet was an entirely different UDA requirement. The US establishment initiated ASIAEX in the year 2000, for enhanced acoustic capacity and capability building in the SCS and the East China Sea (ECS).

The ASIAEX was a massive Shallow Water Acoustic Measurement (SWAM) exercise to generate local site specific field experimental data in the SCS and the ECS. The University of Washington started the first phase along with five other US universities to build a massive modelling and simulation framework for the two regions. The phase two was focused on field experimental validation and massive data collection was initiated in the two regions for over three years. The second phase included local academic institutes in China, Hong Kong, Singapore, Taiwan and more. Over 20 universities came together to participate in phase two. The entire ASIAEX was funded by the Office of Naval Research (ONR), US and operationally driven by the University of Washington. This is a unique model where strategic capacity and capability building was undertaken through an academia driven mega initiative. The US developed significant UDA capabilities and continued to augment the same through regular deployment of acoustic arrays and underwater drones post ASIAEX.

The takeaways for the US was very clear in terms of enhanced capabilities for littoral ASW in the tropical waters of the SCS, however the Chinese were also not far behind. They whole heartedly participated in the ASIAEX phase two, to learn how such a mega field experimental R&D is undertaken. The Chinese declared the Underwater Great Wall (UGW) project in the year 2015. This is a massive underwater field experimental facility built to generate substantial inputs on the tropical littoral UDA. The location of the UGW is indicated in figure 1. The establishment of the UGW is clearly an indication of sustained Chinese effort to generate UDA in the tropical littoral waters of the SCS and beyond. Such facility has to be an effort of at least two decades if not less, indicating that the ASIAEX was part of the larger Chinese strategy to build on their acoustic capacity and capability for enhanced UDA.

In December 2016, the Chinese navy captured an Unmanned Underwater Vehicle (UUV) deployed from the US oceanographic survey vessel USNS Bowditch in the South China Sea. The timing of the incident was more significant than the incident itself. The US Presidential elections had just concluded and President Trump was yet to take over his presidency. President designate Donald Trump, broke protocol to condemn the Chinese action. This was a very significant incident with massive strategic messaging from the Chinese. The continued data collection in the SCS by the US Navy post ASIAEX, to continuously consolidate the UDA effort was challenged by the Chinese formally. It was also timed well to declare to the world that the Chinese are no more a power that can be ignored in strategic matters. During the Trump presidency, the Chinese Navy continuously challenged the freedom of navigation asserted by the US Navy and disrupted the movement of the US fleet in the SCS. The Indo-Pacific is seen by the Chinese, as a strategic formulation to counter their undeclared hegemon, by the West and their allies. Initially, the Europeans were reluctant to openly back the Indo-Pacific strategic construct, however, during the pandemic there has been a decisive and sharp alignment of the pro and anti-China entities. More and more nations have joined the Indo-Pacific initiative and deployed their strategic assets in the region. It is also important to note that more and more nations with limited know-how and resources are indulging in submarine proliferation in the Indo-Pacific region, raising safety concerns. Even nuclear submarines are also being seen and more worrying is that the origin of these submarines, is fast shifting from the traditional submarine manufacturers in the west to new entrants like China.

The Indian Ocean Region (IOR) has somehow not seen enough efforts to build on the acoustic capacity and capability to build on the UDA framework. The geopolitical and geostrategic realities in the past somehow ensured a low priority for the IOR, however in the 21st century more and more nations and also the extra regional powers are maintaining their strategic presence in the IOR. The Indo part of the Indo-Pacific must be understood in the strategic context. The enhanced UDA in the IOR and the Indo-Pacific region is inescapable in the tropical littoral waters. SWAMs and the field experimental R&D with indigenous effort are critically required. India is well placed to take the lead and establish its claim as a responsible and capable player in the Indo-Pacific region. With Quad, the global community recognizes the relevance of India in the strategic power play, however we must also make sure that India and the Indo part of the Indo-Pacific are inseparable. The Security And Growth for All in the Region (SAGAR)



declaration of Prime Minister Narendra Modi will be truly realized on the ground only with an effective UDA. The traditional Maritime Domain Awareness (MDA), being security driven has to change and make it more inclusive by allowing other stakeholders to participate and pool in resources. Unlike the Cold War era, it is no more politically and economically viable to allocate massive budget for security purposes. Democracies have to balance socio-economic requirements with security and build more optimum models to meet strategic requirements with state-of-the-art high Science and Technology (S&T) tools. The UDA framework proposed by the Maritime Research Centre (MRC), Pune has the potential to overcome the political, economic and military challenges and opportunities of the Indo-Pacific strategic construct.

Dr (Cdr) Arnab Das is Founder & Director, Maritime Research Center (MRC), Pune.

[Indian Ocean Region needs to prioritise UDA framework - The Sunday Guardian Live](#)

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FACULTY:

Why would Putin invade Ukraine?

(Washington Post 16 Jan 22) ... Aleksandar Matoyiski

Troubles at home may be his strongest motive

The looming threat of a full-scale Russian attack on Ukraine kept the world on edge for much of 2021, and for good reason — an attack of this magnitude would arguably be the most significant invasion of a European country by a more powerful neighbor since Adolf Hitler’s assault on Poland in 1939.

But what purpose would this move serve? As Russia’s preparations and threatening rhetoric have mounted, analysts have pointed out that another invasion of Ukraine would make little sense from a foreign and security policy standpoint.

The dominant foreign policy argument is that Russia is threatening war to extract concessions from Ukraine and the West. But Moscow’s demands, which appear clearly designed to be rejected, undercut this rationale.

The alternative explanation — that Russia seeks to reverse Ukraine’s pro-Western drift — assumes this is possible if Moscow doubles down on its ongoing, lower-grade aggression. Yet this approach seems to be alienating Ukrainians, not bringing them back to Russia’s fold. A December survey even suggests that a quarter of the traditionally pro-Russian population in Eastern Ukraine, which has suffered the most from the current “frozen” conflict, would take up arms against another Russian invasion.

And it is not clear Russians would agree with an attack on Ukraine. Surveys by the independent Levada Center show 62 percent of Russians fear a global conflict, while only about 15 to 20 percent support the unification of Russia and Ukraine. These attitudes have raised doubts that another war would rally Russians behind Putin’s leadership.

Popular discontent has risen sharply

Putin, however, may need a conflict not to rally but to restrain his population. In recent years, public support for Putin’s rule has fallen to new lows, while popular discontent has reached record heights. According to state-owned Russian pollster WCIOM, at the end of 2021, just 25 percent of Russians trusted Putin to resolve their problems. Based on Levada Center data, a mere 32 percent would vote for Putin. Those figures are about half the confidence and support levels Russia’s leader enjoyed until 2018.

And 20 to 25 percent of Russians indicated they would participate in protests with political and economic demands. The signs of public unrest — and the sharp uptick of labor protests in 2021 — had not been seen since the 1990s. Adding to these concerns, popular revolts have pushed neighboring dictatorships in Belarus and Kazakhstan to the brink of collapse, threatening to motivate Russians to do the same.



Comparative evidence shows that even unpopular conflicts, initiated by autocracies similar to Russia's, effectively defused mass discontent of this sort. When, for instance, Serbian strongman Slobodan Milosevic incited successive conflicts to "protect" his co-ethnics across the former Yugoslavia, overwhelming majorities of Serbs opposed the wars. Nevertheless, these highly unpopular conflicts enabled Milosevic to survive repeated mass revolts by creating social pressures to conform, dividing the opposition and justifying internal repression.

What do Russia's cyber moves mean for the Ukraine crisis?

Russia's experience is similar. A recent landmark study by political scientist Henry Hale finds that three-quarters of those who rallied in support of Putin after the 2014 Crimea annexation actually faked their newfound approval for Russia's leader — out of fear of social censure by a Russian majority that appeared to become more militantly patriotic. But this faked rally behind Putin's leadership had a real effect on popular dissent. His ratings stayed high and protests largely ceased for over four years.

Would Putin fight abroad to survive at home?

Going forward, the Russian regime may struggle to stem this current without another conflict, for at least two reasons. First, the Kremlin will have a hard time justifying the current campaign of internal repression and censorship with no compelling external threat — the sort observed in wartime. Lacking this, the domestic political crackdown may backfire; By early 2022, Russians had expressed record-high concerns about government arbitrariness and repression.

The second, deeper motive for invading Ukraine lies in Putin's shrinking appeal. A 2021 Levada survey suggests that Russians are most likely to name only pacifying Chechnya, increasing Russia's military prowess and enhancing its international stature as Putin's successes over his 22-year reign.

At the same time, Russians are nearly twice as likely to cite Putin's efforts to improve living standards as a failure than a success. This severely limits Putin's options for justifying his rule, especially given Russia's bleak economic prospects. In this context, a conflict in Ukraine could, paradoxically, prove a safer bet for defusing the mounting discontent and for preserving Putin's regime.

This response would align well with the nature of the Putin regime. As my forthcoming book explains, electoral autocracies in the mold of Putin's Russia attract genuine majority support by promising efficient, strong-armed rule in societies traumatized by crises and instability. However, elected strongmen become redundant in the eyes of their populations not only when they fail, but also when they succeed in restoring stability. To justify their rule, they must maintain or manufacture crises.

Elected autocrats, in other words, rely on crises and conflicts to establish and sustain their appeal. Putin rose to power thanks to the stage-managed invasion of Chechnya in 1999, which allowed him to project an image of a capable strongman who could "raise Russia from its knees" after the cataclysmic post-Soviet decline.

And when "strongman fatigue" turned Russians against his regime in 2011 and 2012, Putinism was resuscitated by another conflict. As the chart below shows, by 2013, more Russians wanted Putin to leave office than stay for another term. But Putin's annexation of Crimea completely reversed this trend. With Putin appearing as Russia's indispensable protector, the conflict in Ukraine paved his way to another easy reelection in 2018.

Support for Putin to continue as president at the end of his current term

As Russians grow increasingly weary of Putin again, Levada surveys show the number of Russians who want him out of office after his current term in once more about to surpass the number who would like him to stay on as president. And in 2024, Russia's leader faces his most controversial reelection yet, enabled by constitutional changes that would allow him to rule Russia for life. Against this backdrop, the temptation to instigate another conflict in Ukraine may become overpowering.

Aleksandar Matovski is an assistant professor in the department of national security affairs at the **Naval Postgraduate School** and the author of "Popular Dictatorships: Crises, Mass Opinion, and the Rise of Electoral Authoritarianism" (Cambridge University Press, 2022). The views expressed here are



those of the author and do not reflect the views of the U.S. government, the Defense Department or the Navy.

[Putin, like other elected autocrats, relies on crises and conflicts to sustain his regime. - The Washington Post](#)

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Uncomfortable Expositions for Unpopular Questions #1: Expendable Aircraft on Call

(CIMSEC 13 Jan 22) ... Collin Fox and Harrison Schramm

This is the first in a series of articles that ask necessary but unpopular questions of the West's defense-industrial complex. The best questions for this series are also the worst: they should be unpopular to ask and produce disquieting answers — when an answer is even possible.

Choose your own adventure: How is America's next great power war most likely to end? (Pick one.)

A: The conflict is over rapidly, the U.S. is victorious, life goes on, and there's nothing to analyze,

B: The conflict is over rapidly, the U.S. is defeated, and there's nothing to analyze, or

C: The conflict is over quickly, everyone is dead, and there is nothing to analyze.

If you chose 'none of the above,' you probably don't have a future as a late 80's action screenwriter,¹ but you might have one as a strategist.

Let's pull the thread on the implicitly rejected option D: The conflict drags on. The defense establishment's preoccupation with nuclear conflict throughout the Cold War has left a poisonous fallout of assumptions with an unexpectedly long half-life, chiefly the implicit expectation for a short, sharp conflict between great powers. While this expectation has many repercussions, from combat logistics to global economics to conflict termination, the attrition of combat aircraft is the topic today.

Each Services' jet fighter community chase highly favorable attrition ratios; these cannot be assumed for a future conflict. Although current U.S. aircraft are exquisite feats of engineering that border on the miraculous, the trend creates an (un)virtuous cycle: Fewer aircraft need to be more exquisitely engineered, and more exquisite aircraft are fewer in number. This cycle is perhaps best described by Norman Augustine: "In the year 2054, the entire defense budget will purchase just one tactical aircraft. This aircraft will have to be shared by the Air Force and Navy 3½ days each per week except for leap year, when it will be made available to the Marines for the extra day."

In contrast, a conventional conflict against a peer adversary could very easily result in the rapid attrition of top-line munitions and aircraft, both in the air and on the ground. From there, the war would become an entrenched stalemate – an admittedly unpopular yet plausible proposition. What actions should the United States and its allies take now as a hedging strategy?

The idea of a stalemated war in the skies over the sea against China or Russia echoes the First World War's Western Front. Here, a stalemate is not defined by earthworks and wire across physical territory, but rather the inability to field a second wave of air power after the first is lost. American airpower would get very thin very fast after removing F-22s and F-35s from the flightline, and even more so when the runway itself becomes cratered rubble scattered with burning aircraft.

In the other corner, China's significant production capabilities are neither unlimited nor invincible. The need for experienced replacement pilots to operate replacement aircraft may also be a critical factor in a future great power war, just as it was for Imperial Japan. In such a future, the ability to rapidly reconstitute a force of "acceptable" — vice "exquisite" — aircraft will be a vitally important factor for the United States to support war termination on favorable terms.

A threefold sequential hedging strategy can preserve and expand aerial combat power against rapid attrition. The first tenant is that an aircraft saved is an aircraft produced. Existing exquisite platforms need to be carefully employed and well-protected by legions of Unmanned Combat Aerial Vehicles (UCAVs). Secondly, the United States should seriously consider – and exercise – a true capacity to quickly return



retired (“mothballed”) aircraft to active status. Third, and perhaps most importantly, the United States should invest in the design and prototype production of new, replacement combat aircraft, both manned and unmanned, that are designed to be built quickly and in large numbers.

No plan survives first contact with the adversary

General war is (generally) unpredictable. Clausewitz underscores the play of random chance and probability in war; Sun Tzu advises commanders to win without fighting. After all, when politics can deliver desired aims with certainty, why escalate to the chaotic friction of combat? The present authors have formal education in applied probability and endorse the wisdom of getting a sure thing over a wager with blurry odds. A great power war in the coming decades would likely result from strategic miscalculation by one or more belligerents – namely, the eventual loser(s) – which would create a heady and uncertain operational fog in the opening engagements. Many commanders would be tempted to extract a rapid, decisive victory from this melee. In an era of long-range, precision guided munitions fired across expansive distances, combat aircraft will be the closest thing to shock troops charging to the front line, the bloody fray of attrition warfare.

For the United States and its Allies, the risk to force for exquisite and hard-to-replace platforms needs to be understood, acknowledged, and mitigated before they are exposed to risk in high-stakes battles. One way to mitigate the risk to force is to rely on unmanned systems; however, as these systems have similar – or in some cases, greater – complexity to manned systems, we expect that they will be subject to the same production shortages as manned systems.

Along this line of effort, an attractive and ongoing approach is to develop risk-worthy UCAVs, which would blunt enemy attacks while also distributing friendly sensors and weapons. These platforms are a low-hanging fruit, relatively inexpensive, and ready for accelerated operational development after decades of development. In addition to these operational considerations, producing these platforms in significant quantities in the near future would also help maintain the industrial base for accelerating production should the need arise.

The Replacements

Assume for a moment that the 80’s screenwriters are wrong, and a great power war drags on through months and years. What mitigations should the U.S. put in place now? An extended great power conflict would require a fallback capability of ‘second tier’ aircraft. Much of this fallback capacity already exists in the form of reserve and Air National Guard squadrons, many of which would likely see combat. Nevertheless, the logic of attrition also applies to these reserve aviation forces. Aviation-specific manpower policies, motivated in part by Imperial Japan’s pilot shortfall in WWII, grant a relative abundance of trained and experienced American combat aviators. Even so, they still need aircraft to fly.

Fortunately, the United States also has a large collection of retired but ‘preserved’ aircraft, most of which are at the ‘boneyard’, at Davis-Monthan Air Force Base in Arizona. While the modernization of current air wings are underway, budgeteers would do well to broadly consider service life extension programs (SLEP) for the ‘best’ past generation aircraft as a potential backfill for the attrition of manned aircraft and invest in greater capacity to accelerate the same.

While increasing funding for maintaining, preserving, and regenerating aircraft in the ‘boneyard’ is one course of action, it is admittedly not well-aligned with the broad incentives of either government or industry (with the possible exception of Arizona’s 2nd congressional district).

A complementary approach is to prepare plans ‘at the ready’ for aircraft that can be rapidly built and fielded. For these aircraft specifically, the more parts they have in common with contemporary military (and civilian) aircraft, the better.

“Good Enough” means both things: good must be good and enough must be enough.

The first two hedges are admittedly expedient stopgaps, not optimal solutions. The most likely operational environment (the Indo-Pacific) and the most likely/dangerous belligerent (China) frames the required operational capabilities for replacement aircraft: They must have long range to be relevant across



the vast distances of the Pacific and should be low-observable to evade detection and survive against capable air defenses.

Clear and well-justified system requirements should be based on a stable, reasonable, and coherent vision of the planned operational environment. The fiscal operational environment for this concept also means that it should be designed for rapid production and moderate cost, and by extension, low technological risk. Speed of production is a key performance parameter. Other performance parameters, like airspeed, should be strictly scoped against requirements creep.

Let good be good and enough be enough.

The Department of Defense should start with these modest and well-justified requirements to then develop progressive iterations of merely sufficient designs. Early and detailed systems engineering can help reduce risk, as can the conscious integration of mature technologies over the exotic temptation of leap-ahead capabilities. Government-ownership of these designs would allow widespread and more competitive aircraft production if the need ever arose, in keeping with the successful development and acquisition model of the Tomahawk cruise missile. A wide base of the American manufacturing and political establishment could be incentivized to invest in aerospace manufacturing capacity through the grant mechanism previously described in Distributed Manufacturing for Distributed Lethality.

Summation

The uncomfortable part of this question is not overcoming an engineering challenge or reinforcing the industrial base. It's the recognition of just how destructive a future great power war would be, and that our best, most expensive 'kit' will likely be the first to be lost. It's the acknowledgement of just how important a fieldable 'second line' of aircraft could be as a hedging strategy should most of each side's exquisite first rate forces end up on each other's spears.

Lieutenant Commander Collin Fox, U.S. Navy, is a foreign area officer serving as a military advisor with the Department of State. He is a graduate of the **Naval Postgraduate School** and the Chilean Naval War College.

Harrison Schramm is a retired Naval Aviator. He is President of the Analytics Society of INFORMS and a Principal Research Scientist at Group W. College and current **Naval Postgraduate School** Senior Lecturer.

[Uncomfortable Expositions for Unpopular Questions #1: Expendable Aircraft on Call | Center for International Maritime Security \(cimsec.org\)](#)

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NPS professor wins big in “Jeopardy!” Professors Tournament final

(DC Military 11 Jan 22) ... Lt. Cmdr. Edward Early

Who is Dr. Sam Buttrey?

The Naval Postgraduate School (NPS) professor will forever be memorialized as a trivia answer — phrased, of course, in the form of a question — for avid fans of the hit TV quiz show “Jeopardy!” Buttrey, an associate professor in NPS’ Operations Research department, was the big winner in the inaugural “Jeopardy!” Professors Tournament, which was recorded in Los Angeles earlier this fall and televised Dec. 6-17.

“Of course, I’m gratified to have played well — even recognizing that there is a substantial dose of luck in the game,” said Buttrey, who was on campus Dec. 17 to watch his victory in the tournament’s final episode on TV with other NPS faculty and staff members. “The actual game play was a lot of fun for a big ‘Jeopardy!’ fan like me, too.”

During the tournament, hosted by Mayim Bialik, Buttrey matched his knowledge against 14 other professors from universities and colleges throughout the United States.



After winning his first two matches in the first round and semifinals, Buttrey advanced to the two-day finals against Ed Hashima, a history professor at American River College in Sacramento, and Alisa Hove, a botany professor at Warren Wilson College in Asheville, N.C.

Buttrey compiled the highest cumulative total score during the finals, which were televised on Dec. 16 and 17, and captured the tournament's grand prize of \$100,000, as well as a berth in the show's 2022 Tournament of Champions. Hashima, who finished second, earned \$50,000, while third-place finisher Hove earned \$25,000.

"All of us at NPS are extraordinarily proud of Sam for his performance during the tournament and for the way he's represented our school, the U.S. Navy and Marine Corps, and all of our military students who attend NPS," said the president of NPS, retired Vice Adm. Ann E. Rondeau. "Like all of our talented defense-focused faculty members, Sam is not just an expert in his field, he is also dedicated to serving those who serve our nation in uniform. As Sam himself has pointed out during the tournament, 'Just because you graduated doesn't mean you stop learning,' and that's a valuable lesson for all of us."

It has been a whirlwind two weeks for Buttrey, who said that he enjoyed his time on the "Jeopardy!" set with his fellow professors

"I think the whole process could have been intimidating, but instead it was like a weird camp holiday punctuated by bouts with makeup technicians and hair stylists," he said. "The COVID protocols at the taping were very strict, and we weren't permitted to use our mobile phones, so I got to spend a lot of time with the other contestants, and they were uniformly very smart and funny and interesting. I made genuine friends, and that's rare enough in the world."

In the span of the tournament, Buttrey was not only noted for his quick wit, but also for his uncanny resemblance to comedian Steve Martin — something which was pointed out by multiple social media users and news outlets.

"It's been very entertaining for me — I can't speak for Steve," Buttrey said. "Steve Martin is not only hilarious, he's also a serious author and talented musician. I have been told I look like him for years, but I think I saw the resemblance most clearly on the 'Jeopardy!' cameras. Sadly, though, I never get compared to the famously good-looking people like George Clooney or Brad Pitt or Halle Berry. Still, this instant internet-era fame has been a little weird and a little fun — I don't expect to experience anything like this again."

While he will eventually return to the "Jeopardy!" set for the Tournament of Champions, Buttrey is looking forward to a well-earned break for the holidays before returning to school in time for NPS' winter quarter.

"I think this level of public scrutiny can start to get not just distracting, but exhausting," he said. "I have no idea how Steve Martin gets through life. I will definitely have enjoyed my 15 minutes of fame, but it turns out that that's just about the right number of minutes of fame. I'm looking forward to getting back to regular life."

[NPS professor wins big in "Jeopardy!" Professors Tournament final | Local | dcmilitary.com](#)

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ALUMNI:

RDML Christopher Alexander on Accelerating Surface Navy Tactical Excellence

(CIMSEC 11 Jan 22) ... Cmitry Filipoff

CIMSEC had the opportunity to discuss the evolution of the Surface Navy's tactical development with Rear Admiral Christopher Alexander, commander of Naval Surface and Mine Warfighting Development Center (SMWDC). In this discussion, RDML Alexander covers new initiatives on measuring tactical experience, the increasing demand for Surface Warfare Advanced Tactical Training (SWATT) exercises, and how SMWDC is transforming to accelerate tactical skill across the surface fleet.



How would you describe the value of SMWDC’s restructuring, such as the creation of the Surface Advanced Warfighting School (SAWS), the Fleet Training Directorates, the Technical Reachback Divisions, and other related changes?

Restructuring SMWDC from a mission-area focused organization (AAW, ASW, etc.) to an organization structured along functional lines creates efficiencies for SMWDC’s most valuable asset, the Warfare Tactics Instructor (WTI). The reorganization will improve how WTIs are trained, how they train the fleet, and their involvement in the development of future capabilities with the highest tactical benefit to our customer, the fleet.

The reorganization to the specific functional lines of WTI Production, Training Directorates, and Fleet Technical Reachback Divisions facilitates consolidation of all the WTI courses of instruction (COI) in one location with the establishment of SAWS in San Diego. SAWS will standardize training across all WTI COI, cultivate innovation and collaboration across the WTI disciplines, and drive an all-domain approach to training and Tactics, Techniques, and Procedures (TTP) development.

Fleet training directorates will manage SWATT resourcing requirements, planning and executing SWATT exercises on the East and West Coasts, and Forward Deployed Naval Forces (FDNF). With the increasing number of advanced training events each year across the globe, Fleet Training Directorates — Pacific and Atlantic — are designed to leverage and build expertise on the geographic training differences of ranges and training resources of each SWATT location while allocating more WTI time and effort for the planning and execution of the training for the ships.

Finally, SMWDC intends to bring WTI warfighters closer to the combat system, weapon system, and platform developers. We are doing this by repurposing our IAMD Division in Dahlgren to a technical support division. Currently, Dahlgren is focused on training IAMD WTIs. The transition to a technical support division allows Dahlgren to focus on developing technical solutions to tactical problems and will enable us to integrate WTIs in the weapons system development process from conception. Our goal is to field systems with approved TTP and concepts the fleet can immediately use for tactical advantage against our pacing threats.

How are the SWATT exercises becoming more intense and challenging? How are the training audiences responding to these experiences and making the most of them?

When SWATT initially kicked off six years ago, we envisioned conducting approximately four a year for Carrier Strike Groups. However, SWATT proved to be very successful, and subsequently the demand for SWATT has increased to most surface ships participating prior to a deployment. As a result, around 8-10 SWATT events are now conducted annually, with nine completed in FY21.

The blue-to-blue integration provides the opportunity for ships and staff (Air and Missile Defense Commander and Sea Combat Commander) to work together and practice TTP execution, post-Basic Phase, and before Group Sail and Composite Training Unit Exercise (COMPTUEX). As SWATT develops, we want to find the right mix of basic, intermediate, and advanced events, part of the Crawl, Walk, Run concept of progression. This mix ensures SWATT provides training for the high-end fight while addressing foundational proficiencies for the common operator and watch team, such as radiotelephone communications, link operations, risk identification, and systems setup.

SWATT is becoming more challenging as we increase Information Warfare integration, unmanned vehicle integration, leverage more complex Live, Virtual, and Constructive (LVC) training events, Live Fire With A Purpose (LFWAP) events with emphasis on offensive surface warfare. We also integrate warfighting concepts such as Distributed Maritime Operations (DMO), U.S. Marine Corps Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO). These challenging training events build watchteam cohesion, introduce warfighting concepts, and increase the performance of the participating units.

Then shortly after SWATT execution, our new Final Performance Reviews (FPR) provides feedback that is actionable prior to COMPTUEX. The FPR also allows SMWDC to improve SWATT by incorporating fresh lessons learned and feedback from the training audiences into future training events.



What is SMWDC doing to better measure and track the tactical skills and experience of individuals, such as through the Surface Warfare Combat Training Continuum (SWCTC)? How could this data be used?

SMWDC continues to improve a holistic and focused approach to generating the advanced tactical skills necessary to fight our ships and win the high-end fight. Foundational to that effort is better understanding the measures and drivers of proficiency of key tactical watchstanders. SWCTC will codify the training and experience standards Surface Warfare Officers (SWOs) will be required to meet through their careers, recognizing the individual's contribution to combat capability. By capturing training data at the individual level, the surface force will better understand performance trends and leverage data to help systematically produce the best tactical watchstanders.

A pilot program is underway to collect tactical experience data for SWOs standing tactical combat watches to understand how much tactical experience an officer gains throughout different phases of the Optimized Fleet Response Plan.

SMWDC is also developing grade sheets to assess a watchstander's knowledge and aptitude. The grade sheets, divided into three parts, comprise:

- A skills assessment (general skills based on the watch station and specific skills based on the scenario requirements).
- A survey portion that is the assessor's opinion of the watchstanders' performance.
- An overall assessment that gives the assessors' confidence level in the watchstanders' overall ability.

A framework is under development to allow SMWDC to collect tactical assessment data from the schoolhouses to measure an individual's performance in various areas and how those translate into indicators of tactical prowess on a warship.

As data is collected it will provide SMWDC the tactical competency data needed to align warfighting training across the numerous training organizations, and identify gaps and seams in warfighting training to inform risk calculations and resource decisions.

SMWDC integrates various Surface Navy functions that before were often stovepiped, functions such as tactical development, doctrinal experimentation, schoolhouse instruction, and advanced training events with operating forces, to name several. How does SMWDC manage a connected learning environment that helps these integrated areas evolve together?

Creating a more cohesive learning environment is central to the SMWDC reorganization. Since SMWDC's formation, we have taken pride in leveraging the synergy between TTP developers, instructors, and trainers. Along with consolidating all WTI training under one roof, SAWS now hosts our TTP department. By co-locating the TTP shop with the schoolhouse Subject Matter Experts (SME), we can utilize the SMEs who are teaching the future WTIs to also write and update TTP. Similar to our TTP-SAWS relationship, our N8/9 (Experimentation and Advanced Concepts) Branch is co-located with our Fleet Training Directorate in San Diego which allows for easy integration of fleet experimentation into advanced tactical training (SWATT, LFWAP, etc.).

A practical example of this advantage is when ships and SMWDC discover an urgent change is required in a weapons system's TTP during SWATT. The embarked WTI comes ashore and coordinates with the SAWS SME to begin working on the TTP change. When the change is complete, it is pushed to the Fleet Training Directorate (FTD) to include in a future underway event to validate the update. Once the TTP is validated, the updated publication is released to the fleet, and schoolhouse instructors begin teaching the updated curriculum, which then propagates out to the fleet. Before SMWDC, this process could take years to accomplish; in 2021, SMWDC reduced this time to weeks. We are constantly striving to improve the TTP update time, which is an added benefit to SMWDC consolidation.

SMWDC regularly solicits comprehensive feedback. As a result, we have created and implemented processes to capture lessons learned and integrate them into future TTP and training updates. Some examples include our FPR, WTI Re-Blue — our yearly gathering of WTIs to keep them fresh on TTP and



fleet developments — and our SMWDC ENGAGEMENT QUEUE, a classified tactical newsletter where fleet authors can share lessons learned.

How does SMWDC emphasize the culture of being a learning organization, of pushing beyond limits, and constructively harnessing failure in the drive toward tactical excellence?

Everything we do at SMWDC centers on tactical improvement and learning. One of our main goals is to inculcate a culture of tactical learning across the Surface Force to create an effect where SMWDC's influence lasts well after we work directly with a ship's crew. The emphasis we place on the Plan, Brief, Execute, Debrief (PBED) process is an excellent example of harnessing the value in lessons learned. During each event in a SWATT underway period, WTIs lead the crew through a deliberate process where they learn tactics and emphasize the importance of critical self-assessment. Some of the best learning experiences these crews have had are during debriefs where the execution at times was less than optimal. Through advanced playback technology, WTIs can show the "ground truth" of an event and use voice circuit recordings, chat logs, and input from the watch team to review where execution could improve. The crew then plans for a more advanced scenario and attempts to apply those lessons from the previous event's debrief. Each crew goes through dozens of PBED cycles during SWATT with the goal of the crew assuming a lead role in that process from the WTIs. This way, the crew can continue to grow and improve without SMWDC's direct involvement.

Internally, SMWDC emphasizes critical assessment of the SWATT process, the WTI COI, and TTP development. All of these interconnected elements have the overarching goal of increasing the tactical proficiency of the surface fleet. As new systems or platforms come online, new potential adversary technology or tactics change, or national security concerns evolve, SMWDC constantly assesses if we are providing the right tactical training to the right people at the right time. In this era of great power competition, we need to remain a step ahead and anticipate the next fight, not just react to it.

Two great examples of this are LFWAP and TTP validation, which occur in conjunction with an underway SWATT. LFWAP not only increases the confidence of our crews in their capabilities and the system they are operating, but each event provides valuable information about our weapon systems for improvement during follow-on assessments. Likewise, when we draft a new TTP, we build it into SWATT scenarios to test and validate the TTP, which keeps crews involved in the innovative force development process and provides efficacy of the new TTP.

How can WTI culture and education become more mainstream across the Surface Navy? Could there come a time where all SWOs receive this kind of instruction?

Our goal remains to increase the tactical proficiency and lethality of the Navy, and the best way to do it is by spreading the education and culture of WTIs through our current and future initiatives. WTI culture and education becomes more mainstream each year across the Surface Navy as we see more WTIs in Department Head, Executive Officer, and Commanding Officer positions.

In order to improve the tactical proficiency of the fleet we need to produce more WTIs and fill the follow-on production tours. Those two ingredients, WTI COI and a production tour, are needed to produce a cadre of officers whose "Day-Job" is to think critically about how we should tactically employ our weapons systems. By filling production tour billets we also increase the number of times a ship and crew interact with WTIs as they move through the phases of training. These interactions are where the cultural shift we seek comes to fruition. The WTIs help the crews see the right way of doing things and the tactical advantages in maintaining that standard when the WTIs are not embarked. The combination of WTIs in at-sea leadership billets and increased fleet interactions with WTIs through training events is leading a cultural change for the better.

The training investment in each WTI is extensive and not likely to be replicated across all SWOs. However, the WTI investment and the improved use of metrics previously discussed will very likely drive improvements in the broader SWO training pipelines for various tours, resulting in sustained combat proficiency as the fleet reaches new and higher standards. WTI production, SWCTC, and SMWDC are all part of that long-term drive toward a higher standard in the tactical performance of the Surface Force.



Rear Admiral Christopher Alexander, a graduate of the U.S. Naval Academy and the **Naval Postgraduate School**, assumed the role of Commander, Naval Surface and Mine Warfighting Development Center in May 2021. Alexander commanded USS Sampson (DDG 102), USS Princeton (CG 59), and the Surface Warfare Schools Command.

[RDML Christopher Alexander On Accelerating Surface Navy Tactical Excellence | Center for International Maritime Security \(cimsec.org\)](#)

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10 New Space Explorers Join NASA Training for Future Missions

(East Mojo 11 Jan 22)

With the addition of these 10 members of the 2021 astronaut candidate class, NASA now has selected 360 astronauts since the original Mercury Seven in 1959.

The National Aeronautics and Space Administration has 10 new trainees aboard their team at the NASA Johnson centre for a two-year astronaut and space exploration training. This will be NASA's 23rd batch of Astronauts since the first in 1959.

"Today we officially welcomed 10 new explorers to the @NASA family! Our 2021 astronaut candidates have reported for duty at @NASA_Johnson and were sworn in this morning, kicking off their two-year training. This new astronaut candidate class is NASA's 23rd since 1959," tweeted NASA Astronauts on the micro-blogging platform announcing the same.

According to NASA, applicants for the programme included U.S. citizens from all 50 states, the District of Columbia, and U.S. territories Puerto Rico, Guam, the Virgin Islands, and the Northern Mariana Islands.

For the first time ever, NASA required candidates to hold a master's degree in a STEM field and used an online assessment tool. The women and men selected for the new astronaut class represent the diversity of America and the career paths that can lead to a place in America's astronaut corps.

Here's all you need to know about the budding space explorers:

Nichole Ayers

This 32-year-old, major, U.S. Air Force, is a native of Colorado who graduated from the U.S. Air Force Academy in Colorado Springs, Colorado, in 2011 with a bachelor's degree in mathematics with a minor in Russian. She later earned a master's degree in computational and applied mathematics from Rice University.

Ayers is an experienced combat aviator with more than 200 combat hours and more than 1,150 hours of total flight time in the T-38 and the F-22 Raptor fighter jet. One of the few women currently flying the F-22, in 2019 Ayers led the first-ever all-woman formation of the aircraft in combat.

Marcos Berríos

37, major, U.S. Air Force, grew up in Guaynabo, Puerto Rico. While a reservist in the Air National Guard, Berríos worked as an aerospace engineer for the U.S. Army Aviation Development Directorate at Moffett Federal Airfield in California.

He is a test pilot who holds a bachelor's degree in mechanical engineering from the Massachusetts Institute of Technology and a master's degree in mechanical engineering as well as a doctorate in aeronautics and astronautics from Stanford University. A distinguished pilot, Berríos has accumulated more than 110 combat missions and 1,300 hours of flight time in more than 21 different aircraft.

Christina Birch



35, grew up in Gilbert, Arizona, and graduated from the University of Arizona with a bachelor's degree in mathematics and a bachelor's degree in biochemistry and molecular biophysics.

After earning a doctorate in biological engineering from MIT, she taught bioengineering at the University of California, Riverside, and scientific writing and communication at the California Institute of Technology. She became a decorated track cyclist on the U.S. National Team.

Deniz Burnham

36, lieutenant, U.S. Navy, calls Wasilla, Alaska, home. A former intern at NASA's Ames Research Center in Silicon Valley, California, Burnham serves in the U.S. Navy Reserves.

She earned a bachelor's degree in chemical engineering from the University of California, San Diego, and a master's degree in mechanical engineering from the University of Southern California in Los Angeles. Burnham is an experienced leader in the energy industry, managing onsite drilling projects throughout North America, including in Alaska, Canada, and Texas.

Luke Delaney

42, major, retired, U.S. Marine Corps, grew up in Debary, Florida. He holds a degree in mechanical engineering from the University of North Florida and a master's degree in aerospace engineering from the **Naval Postgraduate School**. He is a distinguished naval aviator who participated in exercises throughout the Asia Pacific region and conducted combat missions in support of Operation Enduring Freedom.

As a test pilot, he executed numerous flights evaluating weapon systems integration, and he served as a test pilot instructor. Delaney most recently worked as a research pilot at NASA's Langley Research Center, in Hampton, Virginia, where he supported airborne science missions. Including his NASA career, Delaney logged more than 3,700 flight hours on 48 models of jet, propeller, and rotary wing aircraft.

Andre Douglas

35, is a Virginia native. He earned a bachelor's degree in mechanical engineering from the U.S. Coast Guard Academy, a master's degree in mechanical engineering from the University of Michigan, a master's degree in naval architecture and marine engineering from the University of Michigan, a master's degree in electrical and computer engineering from Johns Hopkins University, and a doctorate in systems engineering from the George Washington University.

Douglas served in the U.S. Coast Guard as a naval architect, salvage engineer, damage control assistant, and officer of the deck. He most recently was a senior staff member at the Johns Hopkins University Applied Physics Lab, working on maritime robotics, planetary defence, and space exploration missions for NASA.

Jack Hathaway

39, commander, U.S. Navy, is a native of Connecticut. He earned bachelors' degrees in physics and history from the U.S. Naval Academy and completed graduate studies at Cranfield University in England and the U.S. Naval War College. A distinguished naval aviator, Hathaway flew and deployed with Navy's Strike Fighter Squadron 14 aboard the USS Nimitz and Strike Fighter Squadron 136 aboard the USS Truman.

He graduated from Empire Test Pilots' School, supported the Joint Chiefs of Staff at the Pentagon, and was most recently assigned as the prospective executive officer for Strike Fighter Squadron 81. He has more than 2,500 flight hours in 30 types of aircraft, more than 500 carrier arrested landings, and flew 39 combat missions.

Anil Menon

45, lieutenant colonel, U.S. Air Force, was born and raised in Minneapolis, Minnesota. He was SpaceX's first flight surgeon, helping to launch the company's first humans to space during NASA's SpaceX Demo-2 mission and building a medical organization to support the human system during future missions.



Prior to that, he served NASA as the crew flight surgeon for various expeditions taking astronauts to the International Space Station. Menon is an actively practicing emergency medicine physician with fellowship training in wilderness and aerospace medicine.

As a physician, he was a first responder during the 2010 earthquake in Haiti, 2015 earthquake in Nepal, and the 2011 Reno Air Show accident. In the Air Force, Menon supported the 45th Space Wing as a flight surgeon and the 173rd Fighter Wing, where he logged over 100 sorties in the F-15 fighter jet and transported over 100 patients as part of the critical care air transport team.

Christopher Williams

38, grew up in Potomac, Maryland. He graduated from Stanford University in 2005 with a bachelor's degree in physics and a doctorate in physics from MIT in 2012, where his research was in astrophysics. Williams is a board-certified medical physicist, completing his residency training at Harvard Medical School before joining the faculty as a clinical physicist and researcher.

He most recently worked as a medical physicist in the Radiation Oncology Department at the Brigham and Women's Hospital and Dana-Farber Cancer Institute in Boston. He was the lead physicist for the Institute's MRI-guided adaptive radiation therapy program. His research focused on developing image guidance techniques for cancer treatments.

Jessica Wittner

38, lieutenant commander, U.S. Navy, is a native of California with a distinguished career serving on active duty as a naval aviator and test pilot. She holds a Bachelor of Science in aerospace engineering from the University of Arizona, and a Master of Science in aerospace engineering from the U.S. **Naval Postgraduate School**.

Wittner was commissioned as a naval officer through an enlisted-to-officer program and has served operationally flying F/A-18 fighter jets with Strike Fighter Squadron 34 in Virginia Beach, Virginia, and Strike Fighter Squadron 151 in Lemoore, California. A graduate of U.S. Naval Test Pilot School, she also worked as a test pilot and project officer with Air Test and Evaluation Squadron 31 in China Lake, California.

With the addition of these 10 members of the 2021 astronaut candidate class, NASA now has selected 360 astronauts since the original Mercury Seven in 1959, said a NASA report.

[10 new space explorers join NASA training for future missions \(eastmojo.com\)](https://www.nasa.gov/feature/eastmojo/2021/01/10/new-space-explorers-join-nasa-training-for-future-missions-eastmojo.com)

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Board Elects Lukas as Chairperson, Wilson as Vice Chairperson

(Charles County Public School 11 Jan 22)

The Board of Education of Charles County today elected Michael Lukas as its chairperson and Latina L. Wilson as its vice chairperson at the start of the Jan. 11 meeting. The Board votes annually in January to elect a chairman and vice chairman. Both the chairperson and vice chairperson serve a one-year term.

The current Board was elected to office in November 2018. Lukas was first elected to the Board in 2010 and has served three terms. He has held the positions as its chairperson and vice chairperson in the past. Wilson has served one term as chairperson, and two as vice chair.

"It is indeed an honor to serve in any public office," Lukas said. "No one has been a stronger supporter of public schools than myself." Lukas pointed out that he has served on several committees, including the Maryland Association of Boards of Education (MABE) legislative committee and another focused on the Blueprint, a statewide education plan to expand opportunities with new resources, programs and staff. What Lukas gleaned from those positions will serve the Board as it continues its work. "It is vital during this time as we are facing changes in public education," he said.

Wilson was the Board chairperson during 2021 and served as its vice chair for two terms in 2019 and 2020, respectively. A Charles County native, Wilson said the education she received as a Charles County



Public Schools (CCPS) student served her as she went on to college and then as a member of the U.S. Army. The Gulf War veteran said it was never her intention to run for public office but realized how much she valued education. “Regardless of how you serve, or what degree of commitment you give to being a Board member, we are a Board,” Wilson said. “It doesn’t matter who is chair or vice chair but how we work together in promoting and sustaining an excellent school system.”

Lukas retired as an engineer and branch manager for the U.S. Department of the Navy where he has worked for more than 35 years. Lukas attended Prince George’s Community College and the University of Maryland, College Park where he earned a degree in electrical engineering. He completed graduate studies in systems engineering at George Mason University and the **Naval Postgraduate School**. Lukas has volunteered with the Greater Waldorf Jaycees where he served as the community vice president. He has lived in Charles County for more than 25 years with his wife, Kim, who is a teacher at the College of Southern Maryland, and their son who is a 2016 CCPS graduate.

Wilson retired from the Army after serving for 20 years. She is active in the community and serves as president of the Port Tobacco River Conservancy, vice president of the Southern Maryland Alumni Chapter for the University of Maryland, Eastern Shore, a member of the McConchie One-room School House committee and a member of Alpha Kappa Alpha Sorority. She also served many years as the education liaison for the Charles County Branch of the NAACP. Ms. Wilson earned a Bachelor of Science in business from the University of Maryland, Eastern Shore.

[10 new space explorers join NASA training for future missions \(eastmojo.com\)](https://www.eastmojo.com/10-new-space-explorers-join-nasa-training-for-future-missions/)

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Hanson to Lead North Dakota Homeland Security

(Devils Lake Journal 14 Jan 22) ... K. William Boyer

Maj. Gen. Al Dohrmann, North Dakota Department of Emergency Services (DES) director, announced Darin Hanson will serve as the state’s director of Homeland Security.

In that role, he will provide vision, leadership and direction to a Homeland Security team of about 60 employees. The agency’s mission is to provide North Dakota with a central coordinating agency for public safety communications, prevention, protection, mitigation, response and recovery, including during emergencies and natural disasters.

“Darin brings a strong background to his new role as North Dakota Homeland Security director. In his previous position, Darin lead and coordinated the state’s programs and policies on critical infrastructure security. He has shown that he is able to work with a broad spectrum of partners across all levels of government, as well as nonprofit organizations and the private sector,” said Maj. Gen. Al Dohrmann, North Dakota adjutant general and DES director. “Even more importantly, Darin embraces a culture of collaboration and teamwork, the cornerstone of everything we do in emergency management.”

Hanson, of Mandan, North Dakota, has been employed with North Dakota Homeland Security and has worked within the State and Local Intelligence Center for more than eight years. As the Critical Infrastructure Program and security manager, he helped initiate a cyber security task force in North Dakota. He also was instrumental in founding the statewide CyberCon event, which is a cybersecurity and critical information conference held in partnership with Bismarck State College. Hanson has also forged relationships with school safety security partners in North Dakota, including with the North Dakota Department of Public Instruction. His duties also included routinely conducting site visits throughout the state to advise on critical infrastructure security measures.

Hanson succeeds former director Cody Schulz who accepted an appointment by Gov. Doug Burgum as the Parks and Recreation director on Oct. 11, 2021. Homeland Security has been guided by interim Debbie LaCombe since then.

“Darin has been a true asset to the agency over the years. I and the staff here at DES are thrilled that Darin has been named as our director of Homeland Security,” LaCombe said. “Darin has the energy and



curiosity needed to successfully lead us in fulfilling our mission and vision and upholding the values of not only our agency, but the State of North Dakota, as well.”

A graduate of the University of Mary in Bismarck, Hanson holds a bachelor’s degree and a Master of Business Administration. He served in the Montana Army National Guard for more than 20 years, achieving the rank of sergeant first class. He deployed to Afghanistan from 2012- 2013, working at a tactical operations center while also leading an intel section within a military police unit. He also spent more than a year in Alaska working in law enforcement.

In January 2021, Hanson earned his master’s degree in Security Studies at the **Naval Postgraduate School (NPS)**, Center for Homeland Defense and Security (CHDS). While there, he joined Homeland Security officials from across the nation for an 18-month curriculum and authored a thesis titled, “Normalizing Cybersecurity: Improving Cyber Incident Response with the Incident Command System.”

“I am both excited and honored for the opportunity to continue my service to the State alongside a team of emergency management professionals that continue proving they are among the best in the nation,” Hanson said. “I am grateful for the opportunity and the confidence that has been placed in me. The Homeland Security team will continue our whole-of-community focus to ensure a safe and secure homeland for all North Dakotans.”

The Division of Homeland Security is part of DES, along with the Division of State Radio, which coordinates 9-1-1 services, as well as emergency medical, fire and law enforcement response. It is the primary dispatch service for the N.D. Highway Patrol and services 25 counties across the state. For more information, visit des.nd.gov.

[Hanson to lead North Dakota Homeland Security \(devilslakejournal.com\)](http://devilslakejournal.com)

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Webb Assumes Command of Warlocks

(DVIDS 14 Jan 22) ... Nicholas Pasquini

Cmdr. Jeffrey Webb relieved Cmdr. Ian Lilyquist as commander of the U.S. Naval Research Laboratory’s Scientific Development Squadron (VXS) 1, the Warlocks, Jan. 14 during a change of command ceremony held at Naval Air Station Patuxent River.

The U.S. Naval Research Laboratory Commanding Officer Capt. Gregory Petrovic presented Lilyquist with the Meritorious Service Medal. Lilyquist served as the VXS-1 Commanding Officer from November 2020 to January 2022.

Petrovic said Lilyquist’s distinguished leadership was instrumental to the squadron’s continued record of exceptional support to NRL’s airborne mission.

Rear Adm. Lorin C. Selby, the Chief of Naval Research, presided over the ceremony and took the opportunity to praise Lilyquist on a successful tour marked by world-wide deployments during a pandemic that advanced vital Science and Technology to the Fleet.

“The efforts being carried out by the VXS-1 Warlocks are critical for the Naval Research Enterprise,” Selby said. “The Warlocks conduct valuable airborne experimentation and advanced technology development that support naval scientific priorities and warfighting goals.”

This past year, VXS-1 laid the foundation to transition from the P-3 Orion to the P-8A Poseidon – the Navy’s newest maritime patrol platform – retaining the ability for VXS-1 to support heavy lift and long endurance airborne research.

Ensuring the squadron has a fleet-representative platform to demonstrate technology in operational theaters to strengthen the ties between VXS-1 and the maritime patrol and reconnaissance community.

“Leading and performing these experiments is a demanding job,” Selby continued. “Cmdr. Lilyquist and his team are to be commended for the tremendous work they have done to help our Sailors and Marines maintain their technological edge.”

As the new head of VXS-1, Webb will carry on the tradition of premier airborne Science & Technology support.



“I am deeply honored and eager to lead this talented squadron as its 15th Commanding Officer,” Webb said. “Our mission remains imperative to deliver essential scientific solutions to the warfighter. As the Navy, Marine Corps, and Department of Defense modernize and propel the rapid advances in technology that we see today, VXS-1 provides the ability to test, integrate, and field new systems to win the fight.”

In his remarks, Lilyquist thanked the VXS-1 personnel who remained steadfast in the commitment to supporting the Naval Research Enterprise airborne research missions.

“I am humbled and honored to have had the opportunity to be a part of this squadron as its Commanding Officer for the last 15 months,” Lilyquist said. “Our work allowed the Naval Research Enterprise to conduct six major projects on our aircraft, helping turn ideas into reality to transition technology into Fleet capability at the speed of relevance.”

Webb, a native of Boise, Idaho, graduated from the U.S. Naval Academy in 2003 with a Bachelor of Science degree in Engineering, and received his Master’s of Science in System Engineering from the **Naval Postgraduate School**, with distinction, in June 2015.

VXS-1 operates and maintains two uniquely modified NP-3C Orion, a RC-12 Huron, a UV-18 Twin Otter aircraft, and numerous Tiger Shark Unmanned Aircraft Systems used as airborne research platforms.

VXS-1's aircraft operate worldwide on extended detachments and annually log more than 400 flight hours. These aircraft are the sole airborne platforms for numerous projects such as bathymetry, electronic countermeasures, gravity mapping, and radar development research.

The squadron has a flawless safety record, having amassed more than 78,000 hours of accident-free flying since 1963.

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USS Tennessee Blue Changes Command

(DVIDS 14 Jan 22) ... Chief Ashley Berumen

The Ohio-class ballistic-missile submarine USS Tennessee (SSBN 734) Blue Crew held a change of command ceremony onboard Naval Submarine Base Kings Bay, Georgia, Jan. 14.

Cmdr. Matt Wilson relieved Cmdr. Justin Kaper as the commanding officer of the ship’s Blue Crew during the ceremony held at the base’s World War II memorial pavilion.

Capt. John Cage, commodore of Commander, Submarine Squadron 20 was the guest speaker of the ceremony, and praised Kaper and Tennessee’s Blue Crew for their hard work in getting the ship deployable after an extended refit period.

“The proof of Justin’s leadership is borne out not only in mission accomplishment through a successful strategic deterrent patrol lasting over 100 days while providing record-level mission execution, but also in the success of his Sailors,” said Cage. “Tennessee outpaces the rest of the fleet with qualifications, inspection performance, and maintenance execution – including the early completion of a challenging dry dock period. All of this while earning the 2020 Retention Excellence Award and leading the pack in people-centered metrics – which is the overly nuclear submarine way of saying – he takes care of his people.”

Kaper, from Washington, Pennsylvania, graduated from West Virginia University with a Bachelor of Science in industrial management systems engineering. He received a master’s degree in engineering management from Old Dominion University. He received his commission through the Nuclear Propulsion Officer Candidate program.

“When I first got orders to Tennessee Blue, I understandably started doing research on my new boat,” said Kaper. “One of the first things that struck me, was finding out that we have the absolute best motto— ‘America At Its Best!’ As I’ve gotten to work with these outstanding Sailors on both crews over the last two years, I can tell you all that USS Tennessee lives up to that motto. Getting the opportunity to work



with my crew has been the ultimate experience of my professional career. This crew is full of awesome people, and you have made this the best possible tour I could have imagined, far exceeding my expectations.”

Kaper took command of the Blue Crew in March 2020. Under Kaper’s leadership, the crew successfully completed an extended refit period and deployment. They were awarded the 2020 Commander, Submarine Squadron 20 Weapons White ‘W’ award, and achieved an above average performance on a Maintenance and Material Management Inspection, enabling the first ever completion of multiple base-wide drills.

Kaper’s personal awards include: the David L. Llyod Award, Meritorious Service Medal (three awards), Navy Commendation Medal (three awards), and various personal, unit and service awards.

Wilson, the incoming commanding officer, graduated from the U.S. Naval Academy with a Bachelor of Science in ocean engineering. He received a Master of Business Administration from the **Naval Postgraduate School**.

“To the crew of Tennessee, you are America at its best,” said Wilson. “I am excited to have the opportunity to lead and work alongside each of you. You are critical to the success of the ship and the execution of the strategic mission and I am confident in your ability to continue to excel.”

Ballistic-missile submarines are designed specifically for stealth and the precise delivery of nuclear warheads. Naval Submarine Base Kings Bay is home to all east coast Ohio-class submarines.

[DVIDS - News - USS Tennessee Blue Changes Command \(dvidshub.net\)](https://dvidshub.net/news/2020/03/2020-03-20-uss-tennessee-blue-changes-command)

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