NAVY NEWS WEEK 18-5

5 May 2022

Op Atalanta strikes on "*Hash Highway*" and "*Smack Track*"

Written by defenceWeb -
4th May 2022

Atalanta drug bust.

Drug trafficking, identified by South Africa Navy Chief Vice Admiral Mosiwa Hlongwane as one of ten major threats to African maritime security, at present finds itself with a bloody nose in the western Indian Ocean. The efforts of the European Union Naval Force (EU NavFor) **Operation Atalanta**, until March confined to escort duties for World Food Programme (WFP) vessels and interdicting pirates, now includes narcotics interdiction. The tasking was added to its mandate in the wake of piracy incidents reaching an all-time low off the coasts of Somalia and the Horn of Africa. The **first** successful drug bust took place early in April followed by a further six in quick succession, netting in total over eight tons of various narcotics. An EU NavFor statement has it the French surveillance frigate ***Floréal* (F730)**, under **Atalanta**'s command, successfully carried out four consecutive drug seizures in international waters while on counter piracy patrol duty. She seized close to 1 400 kg of heroin, 1 200 kg of methamphetamines and 25 kg of hashish, worth 50 to 60 million euros in wholesale value and more than 200 million euros ($236 million) in European street value according to data from the United Nations Office on Drugs and Crime (UNODC). These four seizures were made when the ***Floréal*** was heading north, following the "*Smack Track*", the name given to one drugs route in the Western Indian Ocean, which connects the northern coast of the Arabian Sea to the Southern-Eastern African coast, eventually ending in European markets. ***Floréal*** was again in action a fortnight later, netting six tons of dagga in three interceptions of flagless ships. Since 7 April, vessels detached to **Operation Atalanta** confiscated over eight tons of narcotics with an estimated street value in the region of 200 million euros ($236 million). The latest seizures were on what is colloquially known as the "*hash highway*", another major drug route linking the western Indian Ocean, Arabian Sea and Gulf of Aden. EU NavFor said **Atalanta**'s secondary counter narcotics executive task is closely linked to its primary mission objectives of counter piracy, "*targeting illegal activities into which piracy networks diversify*", as well as tackling sources of funding for violent extremist organisations throughout East Africa from Mozambique to northern Somalia. Addressing a recent maritime security conference in Simon's Town, Vice Admiral Mosiwa Hlongwane listed 10 major threats to continental maritime security. They are illegal arms and drug trafficking, piracy, armed robbery at sea, crude oil theft, maritime terrorism, human trafficking, waste dumping and environmental harm, unregulated and illegal fishing as well as overfishing. **Source: https://www.defenceweb.co.za**

USS *The Sullivans* Righted

Mike Schuler
May 3, 2022

Photo courtesy Buffalo and Erie County Naval & Military Park

The effort to "**Save The Sullivans**" at the Buffalo and Erie County Naval and Military Park will transition to the next phase response as the **USS *The Sullivans*** was dewatered and righted at its pier. Park officials report that the historic U.S. Navy destroyer is now near-level, with only a 0.1-degree list, a major improvement from the almost 30-degree starboard list after the ship partially sank last month. As of Monday, divers had plugged a total of 51 holes in the hull and crew members removed approximately 95% of the water from the vessel. Due to the success, the mission has now Emergency Response Phase to a Maintenance and Decontamination Phase. Crew have been working to save **USS *The Sullivans*** after the decorated U.S. Navy destroyer-turned museum ship partially sank at its pier on April 13 after a "*serious hull breach*" on its starboard side. Built in 1943, **USS *The Sullivans*** is one of only four Fletcher-class destroyers remaining in existence. The class is known for being the largest and most important class of U.S. destroyers used in World War II. **USS *The Sullivans*** is also the first ship in the U.S. Navy to be named for more than one person—named after the five brothers from Waterloo, Iowa who were killed in action in 1942 while serving together on board the **USS *Juneau***. The **USS *The Sullivans*** is owned and maintained as a museum ship by Buffalo and Erie County Naval & Military Park, the largest inland Naval Park in the United States. The Buffalo and Erie County Naval & Military Park said as the operation moves into the next phase, the number of workers at the site will be reduced and some equipment removed. The BIDCO Marine Group will continue to work with us to complete the 2-part epoxy repair to the hull that was started last summer. "*We would like to thank the men and women who came to the Buffalo and Erie County Naval & Military Park from across the country to help **Save the Sullivans**, and to the community that provided so much support in all forms. There is still more work to do, but we have much to be grateful for*," the park said in an update on its Facebook page. **Source: https://gcaptain.com**

Two Russian ships destroyed by Ukranian drone strikes

By Ryan Finnerty
2 May 2022

The armed forces of Ukraine say they have destroyed two more Russian warships in the Black Sea, this time using drone air strikes.

A still frame from a video released by the Ukranian military, which purports to show the destruction of a Russian patrol boat by a TB-2 armed drone *Source: Ukrainian Ministry of Defence*

Two black-and-white videos released by the Ukrainian defence ministry each show a small patrol vessel manoeuvring in the water before being struck by a missile. A large explosion follows the impact in both

videos. "*Two Russian Raptor boats were destroyed at dawn today near Snake Island*," Ukraine's defence ministry said via social media on 2 May. Snake Island in the western Black Sea was made famous in the earliest days of the war when video showed Ukrainian defenders refusing a Russian demand to surrender. Thirteen Ukrainian personnel from the island were ultimately captured and later released. Ukraine's top military officer claims that Turkish-made Baykar TB-2 Bayraktar unmanned air vehicles (UAVs) were used in the 2 May Raptor strikes.

A TB-2 Bayraktar drone, built by the Turkish manufacturer Baykar. The platform has been used extensively by Ukrainian forces in the ongoing war with Russia

"*The Bayraktars are working*," says General Valeriy Zaluzhnyi in a translated statement on Twitter. Bayraktars are considered medium-size UAVs and are capable of carrying four laser-guided munitions and a surveillance package. The platform has been used extensively in Ukraine for air-to-ground strikes on Russian forces. A Bayraktar was also reportedly involved in the attack that destroyed the ***Moskva***, the flagship of Russia's Black Sea Fleet. That ship was heavily damaged after being struck by two shore-based, anti-ship cruise missiles. It later sunk while being towed to port by other Russian ships.

Source: https://www.flightglobal.com

U.S. Air Force Tests New Ship-Sinking Bomb in Gulf of Mexico

Mike Schuler
May 3, 2022

Courtesy Air Force Research Laboratory

The U.S. Air Force has demonstrated a lethal new weapon that could provide a low-cost and more widely-available alternative to sinking ships with traditional torpedoes. The new weapon, known as the GBU-31 Joint Direct Attack Munition, or JDAM, was tested during a demonstration last month in the Gulf of Mexico. It was the second experiment in the QUICKSINK Joint Capability Technology Demonstration, funded by the Office of the Under Secretary of Defence for Research and Engineering. During the test, a modified 2,000-pound modified JDAM precision-guided bomb was launched from an F-15E Strike Eagle onto a full-scale ship in the Gulf of Mexico, successfully sinking the vessel in a matter of seconds. This can be seen in this short video https://www.youtube.com/watch?v=RmfRi2VI3JQ. While torpedoes predominantly sink enemy ships via submarines, QUICKSINK is exploring new method to achieve similar anti-ship lethality with air-launched weapons. "*Heavy-weight torpedoes are effective [at sinking large ships] but are expensive and employed by a small portion of naval assets*," said Maj. Andrew Swanson, 85th TES division chief of Advanced Programs. "*With QUICKSINK, we have demonstrated a low-cost and more agile solution that has the potential to be employed by the majority of Air Force combat aircraft, providing combatant commanders and warfighters with more options*."

An F-15E Strike Eagle at Eglin Air Force Base, Florida, with modified 2,000-pound GBU-31 Joint Direct Attack Munitions as part of the second test in the QUICKSINK Joint Capability Technology Demonstration. (U.S. Air Force photo / 1st Lt Lindsey Heflin)

The demonstration was conducted by the Air Force Research Laboratory (AFRL) and Eglin's Integrated Test Team at Elgin's 120,000 square mile Gulf Test and Training Range. AFRL scientists and engineers are developing a weapon open systems architecture, or WOSA. According to AFRL, the QUICKSINK program, conducted in partnership with the U.S. Navy, aims to provide options to "*neutralize surface maritime threats*" while demonstrating inherent flexibility. This latest experiment allowed researchers to assess the scientific and technological challenges associated with the QUICKSINK concept for operational use. "*QUICKSINK is unique in that it can provide new capabilities to existing and future DOD weapons systems, giving combatant commanders and our national leaders new ways to defend against maritime threats*," said Kirk Herzog, AFRL program manager. "*A Navy submarine has the ability to launch and destroy a ship with a single torpedo at any time, but the QUICKSINK JCTD aims to develop a low-cost method of achieving torpedo-like kills from the air at a much higher rate and over a much larger area*," added Herzog. **Source: https://gcaptain.com**

Denmark installs SM2 missiles on frigate *Niels Juel* for first time

Naval News May 2022 Navy Forces Maritime Defense Industry

Posted On Tuesday, 03 May 2022 16:41

According to information published by the Danish MoD on May 3, 2022, surface-to-air SM2 missiles are installed for the first time on the Iver Huitfeldt-class frigate ***Niels Juel.***

Iver Huitfeldt-class frigate **HDMS *Niels Juel*** (Picture source: Danish MoD)

HDMS *Niels Juel* (F363) is an Iver Huitfeldt-class frigate in the Royal Danish Navy. The ship is named after ***Niels Juel***, a 17th-century Danish admiral. The Iver Huitfeldt class is a three-ship class of air defence frigates that entered service with the Royal Danish Navy in 2012 and 2013. The ships were constructed in blocks in Estonia and Lithuania. These blocks were then towed to the Odense Steel Shipyard where they were assembled. The Iver Huitfeldt-class displaces at 6,500 tons full load and is propelled by four MTU 20V 8000 M70 diesel engines in Combined Diesel and Diesel (CODAD) configuration, allowing a maximum speed of 28 knots, and a maximum range of 9,300 nautical miles at 18 knots. The Iver Huitfeldt class frigates are equipped with four Mk. 41 8-cell VLS, two Mk. 56 12-cell VLS, up to 16 Harpoon anti-ship cruise missiles, 2 OTO Melara 76mm guns, a 35mm Oerlikon Millenium naval gun, and two triple lightweight torpedo launchers. It also has a hangar and helicopter deck for medium-sized military helicopters. The SM-2 missile chases threats closer to the water's surface, defending against anti-ship missiles and aircraft out to 90 nautical miles. SM-2 is a cornerstone of a ship's layered defence. It can also be

used against in-coming missiles, from very low to very high altitudes and from stationary to supersonic speeds, under a variety of weather conditions, and across a spectrum of electronic countermeasures environments.

Source: http://navyrecognition.com

Russia Threatens NATO Convoys With Submarine Strike

May 4 (Reuters) –

A satellite image shows loading of probable Kalibr missiles on a Kilo-class submarine in the Black Sea port of Sevastopol, Crimea, April 29, 2022. Satellite image 2022 Maxar Technologies/Handout via REUTERS

Russia said on Wednesday it had fired two Kalibr cruise missiles at Ukrainian targets from a submarine in the Black Sea and reiterated a warning that it would seek to hit shipments of NATO weapons to Ukraine. The defence ministry published video footage of the cruise missiles being launched from the Black Sea, and said they had hit unspecified ground targets in Ukraine. Russia previously said it had mounted similar strikes from a submarine on April 29. Earlier on Wednesday, Defence Minister Sergei Shoigu reiterated a warning that Russia would seek to destroy convoys of arms shipments to Ukraine from Western countries, which in recent weeks have stepped up these supplies. "*The United States and its NATO allies are continuing to pump weapons into Ukraine*," Shoigu told a conference of defence ministry officials on day 70 of what Russia calls its special military operation in Ukraine. "*We view any transport of the North Atlantic Alliance arriving on the territory of the country with weapons or materials destined to the Ukrainian army as a target to be destroyed*." Russia's defence ministry said earlier that it had disabled six railway stations in Ukraine used to supply Ukrainian forces with Western-made weapons in the country's east by bombing their power supplies. It was not possible to independently verify the claim, which did not say which Western-made weapons were supplied to Ukrainian forces via those stations. There was no immediate reaction from Kyiv. Chief of Staff Valery Gerasimov was shown at Shoigu's side during the meeting of defence officials. On Monday, the United States said it believed Gerasimov visited Ukraine's eastern Donbas region last week but could not confirm media reports that he was wounded during fighting.

Source: https://gcaptain.com

Putin's thinking presently must worry the EU and NATO, as he seems set to start a war with NATO. This is a war he cannot win, but the nuclear option comes more firmly on the table.

Babcock Lays Keel of Royal Navy's First Type 31 frigate

Babcock, the aerospace, defence and security company, has started construction of the first of five Royal Navy Type 31 frigates, HMS *Venturer*, at its Rosyth facility.

Naval News Staff 27 Apr 2022

Babcock press release

After cutting the first steel on the programme in September 2021, the traditional keel laying event formally recognised the start of the build, including placing a specially commissioned coin under the keel. On completion of the ship, the coin will be presented to the Captain and crew. The ceremony was held in the new build hall,

the Venturer Building, which forms part of a £60 million investment programme, on top of an additional £100 million over the last ten years.

Artist impression of a Type 31 frigate as part of a CSG. Royal Navy image.

The fully covered hall will house two frigates for uninterrupted, parallel assembly and will support increased productivity gains through improved access to the platforms and digital connectivity. All of this underpins Rosyth's shipbuilding capabilities and maximises the benefits of state-of-the-art engineering infrastructure and digital innovation. The Type 31 programme is an important part of the shipbuilding pipeline set out in the ***National Shipbuilding Strategy*** *that was refreshed last month. The strategy's stated vision for 'a globally successful, innovative and sustainable shipbuilding enterprise' is being borne out in Rosyth, with the company investing in and accelerating its ship building prowess and ambitions. Guests from the Royal Navy, Ministry of Defence and other partners joined Babcock at the event and watched a short film celebrating the role of Rosyth's workforce. Showcasing its* ***#WeareDeliveringInspiration*** *theme, Babcock shone a spotlight on the talent and motivations of team members working on the programme and how they are helping to progress the build.* The event comes just over one month since Babcock secured its second export contract for its Arrowhead 140 frigate (the export variant of the UK Type 31 platform) with the company announced as the platform design provider and technology partner for **Poland's MIECZNIK** (Swordfish) new frigate programme. Babcock had previously secured a design licence agreement with PT PAL Indonesia (Persero) to enable PAL to build two Arrowhead 140 frigates in Indonesia with bespoke design modifications for the Indonesian Navy. Sean Donaldson, Babcock Managing Director at Rosyth said: "*The keel laying ceremony for the future* ***HMS Venturer*** *was a great occasion as we joined with our customer and colleagues to mark this milestone. It's my privilege to work with this talented team each day and to witness their drive, determination and relentless pursuit of quality. A big well done to our competition winner Josh Duffy (7), who designed the coin that we had minted for the keel laying ceremony and whose mum works for Babcock at Rosyth and to our apprentices Ian Stevenson and Naimh Charleston for a flawless job laying down the coin*." Dan Bishop, Director Ships Acquisition DE&S said: "*It's great to be here today at the Type 31 Keel laying ceremony. This is a great example of successful delivery through co-operative working. The Royal Navy and DE&S worked in unison to set the Type 31 requirement and have successfully championed a new competitive procurement process – the first major warship procurement in a generation to meet this challenge. We're really proud to work alongside Babcock to deliver this capability for the Royal Navy. Today marks a significant milestone in the programme for the Royal Navy, Defence and shipbuilding in Scotland and it's great to see the first of the British military's new Type 31 warships keel being laid at Babcock's Rosyth dockyard*."

Source: https://www.navalnews.com

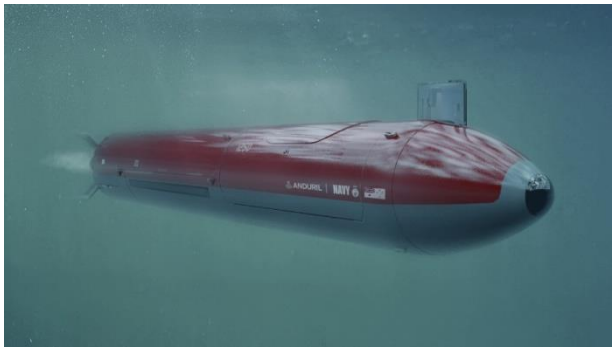
S. Korea, U.S. to begin two-week combined air drills next week: sources

May 03, 2022
By Song Sang-ho and Kang Yoon-seung
SEOUL, May 3 (Yonhap) –

South Korea and the United States plan to kick off regular combined air force drills next week, informed sources said Tuesday, in yet another move to highlight their defense posture especially against North Korea's evolving missile threats. The allies are set to begin the two-week Korea Flying Training on Monday, the eve of the inauguration of President-elect Yoon Suk-yeol, who has vowed to bolster the Seoul-Washington security alliance under his slogan of "*peace through strength*." "*The two air forces plan to begin the two-week training on the same scale as the past trainings*," one source told Yonhap News Agency on condition of anonymity. The source stopped short of giving details including specific air assets to be mobilized. The upcoming training is a scaled-back version of the large-scale **Max Thunder** exercise that the two countries staged in the past with the massive mobilization of their air assets and service members. The allies' Navies also plan to start a four-day anti-submarine exercise Tuesday in the East Sea, officials here said. For the **Ship Anti-Submarine Warfare Readiness and Evaluation Measurement** (SHAREM) exercise, the Navies are set to mobilize a series of key assets, including the guided-missile **USS *Sampson*** destroyer that arrived here last week. South Korea and the U.S. have recently stepped up their security coordination in the wake of North Korea's missile launches, including its test-firing of an intercontinental ballistic missile (ICBM) on March 24. **Source: https://en.yna.co.kr**

Anduril tapped to develop autonomous undersea UAVs for RAN

05 May 2022
By: Charbel Kadib



The global defence technology company, founded by a former Facebook executive, has secured a deal with the Royal Australian Navy for the local development of uncrewed undersea capability. Anduril Industries, which announced its expansion into Australia earlier this year, has commenced commercial negotiations with Defence for a co-funded design, development and manufacturing program for extra-large autonomous undersea vehicles (XL-AUVs). The three-year deal – worth an estimated AU$140 million – is expected to involve capability assessment and prototyping, with three platforms set to be delivered to the Royal Australian Navy over the course of the program. The XL-AUV is billed as an affordable, autonomous, long endurance, multi-mission capable AUV. According to Anduril, the platform is modular and customisable, capable of being optimised with varying payloads for advanced intelligence, surveillance, reconnaissance and targeting missions. Anduril has committed to designing, developing, and manufacturing the XL-AUVs in Australia, supported by the recruitment and retention of a highly skilled workforce to fill key roles across maritime engineering, software development, advanced manufacturing, robotics, propulsion design, and mission operations. The company has also noted plans to actively partner with local SMEs and the research and technology communities. "*The XL-AUV project is a significant investment in Australian industrial capabilities*," said David Goodrich, OAM, executive chairman and CEO at Anduril Australia. "*Through this partnership, Anduril Australia will become a major player in the thriving defence industrial base in Australia and contribute to Australia becoming a leading exporter of cutting-edge autonomous capability to the rest of the*

world." Anduril founder Palmer Luckey said the program would meet Australia's evolving defence requirements. "*The XL-AUV will harness the latest developments in autonomy, edge computing, sensor fusion, propulsion and robotics to bring advanced capability to the Royal Australian Navy*," he said. This local program builds on Anduril's global pipeline. The company secured the Autonomous Surveillance Towers (AST) with the United States government in 2020 and commenced development of an end-to-end counter-drone solution in 2019, designated as the system of choice for the US Special Operations Command as part of a $1 billion deal in 2022. The XL-AUV program is one of a number of local endeavours earmarked by Anduril following its launch in Australia. The $6.3 billion company plans to invest in the development of artificial intelligence technologies and next-generation networked weapons. Goodrich previously told Defence Connect the company would position itself for contracts across all warfighting domains. "*We are focused across all of the domains of defence and that includes maritime, land, air force, and space*," he said. "*Our technology and our operating system have the ability to add massive value across all of those domains*." Anduril Australia is headquartered in Sydney but has pledged to establish a nationwide network. **Source: https://www.defenceconnect.com.au**

It is wonderful when a country invests in developing its own technology. This is an indication that Australia is serious about its Defence Force.

Are You Ready for This? Properly Defining Joint Readiness

May 4, 2022

By C. Travis Reese

"Any military activities that do not contribute to the conduct of a present war are justifiable only if they contribute to preparedness for a possible future one." MCDP-1 Warfighting

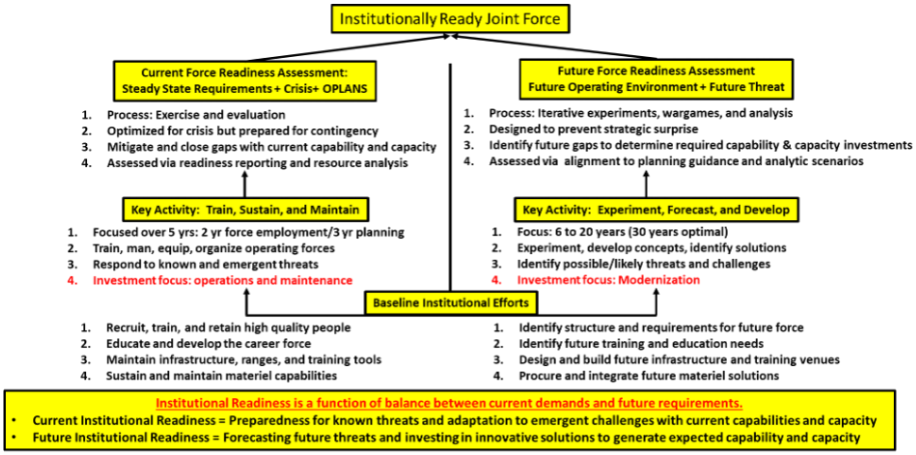
EIELSON AIR FORCE BASE, Alaska (March 25, 2022) – A formation of 42 F-35A Lightning IIs during a routine readiness exercise at Eielson Air Force Base (EAFB), Alaska, March 25, 2022. The formation demonstrated the 354th Fighter Wing's (FW) ability to rapidly mobilize fifth-generation aircraft in arctic conditions. (U.S. Air Force photo by Airman 1st Class Jose Miguel T. Tamondong)

Defense of the nation is a never-ending task. It is achieved by balancing readiness for today's threats and tomorrow's challenges. The relationship between current and future readiness is not a clean demarcation but a part of a continuum. Yet, when it comes to having a prepared force, the ambiguity around how the U.S. Department of Defense (DoD) defines readiness is muddying the prioritization between current threats and future modernization efforts. Actions in Ukraine are reinvigorating how DoD leaders evaluate preparedness for conflict. This makes the current era as important a time as any to understand how to assess overall readiness and the requirements to manage risk as the force prepares to address a peer adversary. What would a better method of defining institutional readiness look like? In a nutshell, it would require DoD to establish an easily understood criteria for institutional readiness. This will allow co-equal comparison between the current and future to manage the risk between investment and divestment as it applies to the transition between the "*as is*" force and the future "to be" force. Why? Because as the character of war inevitably evolves it is necessary to know and develop those first principles of readiness that enable DoD to succinctly

identify needed changes. This must be done in advance of when those changes may seem likely so that the wrong force is not maintained beyond its absolute utility and the current force is not undermined in its preparedness when disruption is not needed.

Readiness is the purpose behind the process

The core concern of DoD leaders is the readiness of the force, both for current and future challenges. Talk of concepts, manpower, capability, acquisition, forward basing, etc. are attributes and features of one great concern: readiness. There is no common definition of readiness across DoD, but there are some frameworks to help understand the components of current readiness and generating future readiness.



The Components of Institutional Readiness diagram provides one example:

The Components of Institutional Readiness Diagram represents a framework to help understand the components of current readiness and generating future readiness.

Components of Institutional Readiness

Current readiness is enabled and assessed through the items on the left side of the chart and focused principally within the 5 year time frame of the current Future Years Defense Program (FYDP) (or military budget to the laymen). It is actual and real, not conceptual for which existing assets are committed as determined in the global force management and annual joint assessment process as key activities. It is the writ of commanders (both providers and employers) to assess their forces and identify gaps in capability and capacity based on existing theater Operations Plans (OPLANS). OPLANS are approved through the appropriate chain of command from Combatant Commanders to the Secretary of Defense and clearly identify the approach to engage *current* threats. They are evaluated through exercises and war games that test and revise the plan to maintain pace with an adversary and not a "*past tense*" frame of the problem or mission. These are "*fight tonight*" operations that current forces train to accomplish. Future readiness is created through the components on the right side. It is largely conceptual in nature and framed through approved scenarios that represent plausible interpretations of future events relative to likely threats. Scenarios are evaluated through a qualitative wargaming process testing concepts, policies, or decisions or a quantitative process of modeling and simulation objectively replicating the environment with testable and repeatable variables and conditions. Both analytic methods when filtered through a net assessment enable discovery of gaps that may impact the future readiness of the force to succeed against *future* threats. War games and experimentation are used to examine the hypothesis of the future operating environment proposed in the scenarios and evaluate attributes of potential solutions. The results then are extrapolated to the requirements that inform the development of future concepts and their supporting capabilities.

The Iron Triangle of Capabilities, Threats, and Resources

The sustainment of the "*as is*" force and the creation of the "*to be*" force is framed by the balance of capabilities, threats, and resources. Different entities within DoD, based on their responsibilities, usually adopt one of the variables as their dominant lens and position. Those viewpoints are not, nor should they be, exclusive since they must be informed by inputs from the other two variables to have any context or meaning at all. Building a thing for a thing's sake with no appreciation of why or with how much is anathema in any sense, let alone for a military application. Typically, in DoD capabilities are the lens of Services as force developers and force providers. Threats are the focus of the combatant commands as well as the Intelligence Community. Resources (especially money) are the dominant viewpoint of the Secretary of Defense and the Joint Staff given their statutory duties in that regard. There are nuances within that, but that is the organized tension within DoD, which, when managed in collaboration vice competition can be highly effective. To reconcile those points of view as they apply to future force design, a scenario-based analysis through wargaming or simulation is conducted. The scenario does not dictate the outcome but rather fuels the context to identify the balance between the three variables. Truly useful scenarios are agnostic of solution but present the plausible framework to consider problems and identify the attributes of potential solutions usually within a given timeframe of consideration. Good scenarios allow the introduction of any range of options or approaches. Scenarios for any military context should look and feel like military plans and orders. This realism helps to distinguish the difference between using current means and practices or adopting future ones. Scenarios must be accompanied with a thorough explanation of the factors and ideas that form their creations so they can be modified as needed with new data or plausible projections. Managed iterations of scenarios help to show an evolution of thinking and learning about future problems. Scenarios that are suitable for wargames at the Department-level to identify future gaps and challenges are the result of interactions among three entities. The Office of the Undersecretary of Defense for Policy provides an understanding of the desired "*ends*" from the **National Defense Strategy** (NDS) with amplifying detail through the defense planning guidance and framework defense planning scenarios. The Services with interaction from the Joint Staff create a model of the Joint Force applied to the scenarios, giving structure to the potential "*ways*" of the NDS. This comes in the form of Joint Force Operating Scenarios (JFOS). The JFOS mimics a Level 3 Operation Plan (OPLAN) set in a future operating environment. The **Cost Assessment and Program Evaluation** in the Office of the Secretary of Defense (OSD(CAPE)) and Service's programming and budget evaluation offices examine the potential solutions necessary to achieve the ways and provide comparative assessment of the "*means*" presented by the Services to recommend the best composition for the force. The work of CAPE and other service analytic organizations is generally performed through quantitative modeling and simulation derived from the conditions applied to scenarios and war games. Only one product, the Joint Operating Environment (JOE), produced by the Joint Staff J7 routinely attempts to articulate a plausible future out to twenty years. The JOE is not comprised of any specific scenario but more a well-considered primer of issues influencing future security considerations. The case for modernization is derived from the results of wargames and analyses from the scenarios and impacts the ability of the Service chiefs to design and fund the needs for the next evolution in the character of conflict. The case for maintaining the current force is based on current threats and emergent conditions which impact the ability of Combatant Commanders to fulfill their approved plans and missions. Suffice to say, there is no substitute for thinking

hard about a problem which often corresponds to buying institutional time to think long as well. Planning earlier and including the potential growth in adversary capacity facilitates delivery of capabilities at the time they are needed, not after. Further, it can prevent retaining something long after it is useful, which causes current gaps to become more urgent and draws institutional focus to the present at the expense of the future. There is also a tendency at times to consider readiness by covering as many options through sub-specialization and regionalization in force development. That can provide useful insights, but in general those should be unique exceptions needed for a particular challenge balanced by the general demands of the force with tools that are applicable and adaptable to nearly any circumstance.

Assessing Risk between current and future

Understanding how institutional readiness is derived must be synchronized with a method for weighing risk against current and future threats. Much ink and rhetoric has been expended to complain over who has the best view and need to lead the efforts of force design in DoD. Secretary of Defence staff? Joint Staff? Combatant Commanders? Service Chiefs? A simple answer is "*yes*", and it depends on what is being measured. Quite clearly Combatant Commanders come with a regional and threat-specific focus gauged on the near-term. That would make it inappropriate for them to manage efforts and Service-level resources to design a force that requires 10 years on average just to identify and develop. Further, Combatant Commanders compete against each other for resources and do not have a unitary appreciation of the threats. Yet they are totally within their purview to request forces with capabilities that make it possible to achieve assigned missions, and modify those forces as needed to suit the task. Conversely, the Service Secretaries and Chiefs must adjudicate that world-wide view and create forces capable of operating in any climb and place. They must deliver capabilities that require alignment of entire enterprises in complex discovery regardless of how often priorities shift or misguided defense acquisition efforts can be. This can be a complex process which requires OSD, with the aid of the Joint Staff, to provide an objective assessment of the proposed solutions to current and future readiness by the Combatant Commanders and the Services. Richard Betts' 1995 book ***Military Readiness: Concepts, Choices, Consequences***, articulated a framework for thinking about readiness where he argued that decision-makers need to ask three key questions about readiness: Ready *for* what? Ready for when? And Ready *with* what? How can Betts' framework be converted into a common model of comparison between current and future to co-equally weigh the sustainment of the current force against the imperative to modernize? An example is below:

Decision-makers need to ask three key questions about readiness: Ready for what? Ready for when? And Ready with what?

Risk Framework for Capability and Capacity

This model takes the three questions posed by Betts and frames them in three different graphs to help visualize risk and assess value based on the interactive variables of mission relevance, readiness to conduct a mission, and the capability of various force options. The graph under "**Ready for What**?" shows risk in terms of a military problem based on the likely frequency of occurrence. For example, nuclear forces may rest on the highest risk challenge with the lowest likelihood of occurrence. They are relevant to strategic deterrence but may have limited value in terms of day-to-day competitive activities. This graph also shows that generally lower risk activities (that can be cumulatively consequential to national security) have a higher probability of occurrence opposed to existential concerns. This gives a scale of an investment's value based on its use case and the risk of not having it poses to our nation and our interests. The graph in **Ready for when?** shows how the duration of an expected challenge and how quickly it must be responded to factors into the cost of sustained preparedness. An immediate response requirement (ex. hostage rescue) requires a persistent ready posture. This may be opposed to larger scale contingencies that historically have longer periods of indication and warning with corresponding windows in time to prepare. The graph shows how overall daily readiness and training requirements factor into cost and sustainment of unique capabilities. Lastly, under "**Ready with what?**," risk can be evaluated in terms what type of force is required for a challenge (large or small) and how long that force will be used. Generally, a short duration mission requires a discrete force of specialized capability, and a longer mission requires a larger force but that will take longer to prepare and enable. That will reflect on the capability of a force to operate effectively and how much investment is required to reach the standard necessary for a planned contingency. The effectiveness of this model is a function on two factors. First, it converts Betts' framework into a formula that can be applied to readiness for both current and future challenges to provide co-equal metrics of comparison. Second, it provides a clear criteria and visualization for the significance of those criteria by assessing the risk of maintaining a current capability or necessity of transitioning to a future one. Regardless of the choice, Betts' framework can help move the Department forward when it comes to weighing risk with more empirical values that balance subjective and objective concerns in current force employment and future force design.

Conclusion

The DoD has struggled to define institutional readiness and find a risk framework that can be equally applied to future and current concerns. Bett's framework and other models in this discussion are templates for conducting comparative analysis of current and future risk to identify which focus areas are of primary concern. The framework used for distillation of those focus areas will inform the investment balance and mitigate tension between current urgent and future important concerns. This competition is framed by an acceptable risk level tolerance competition, pitting current and future challenges against each other. If a current challenge is unmitigated and high risk, it may require DoD to de-emphasize evaluation of future objectives. If the future appears to be riskier and the current challenges are as "*in hand*" as they will ever be, then an emphasis on addressing future concerns would be required. Currently, the DoD does not compare current and future threats to a common framework. The lack of framework creates an inability to weigh efforts and resources for either near term security or long-term effect or to even make an assessment. Instead, they are lumped into a pot of "*threats*" and sorted out by the whomever is the most successful advocate posturing around a vague definition of the need to be "*ready*" with very few metrics of

prioritization or categorization. The goal of readiness is to avoid "*present shock*" – a condition in which "*we live in a continuous, always-on 'now'*" and lose the sense of long-term direction. This can only be achieved when readiness is clearly defined with common criteria for evaluating the risks of sustainment and modernization of capabilities as they apply to current problems or future dilemmas.

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