

UK Chief of Defence Staff Highlights Maritime Context Within Defense Review Refresh



A Royal Navy Astute-class submarine deploys Royal Marines raiding forces during an exercise in Norwegian waters in early 2022. With NATO growing its North Atlantic naval presence, the United Kingdom's impending refresh of its 2021 Integrated Review may enable the United Kingdom to consider increasing its submarine force levels. *U.K. MINISTRY OF DEFENCE*

LONDON – As the United Kingdom adapts to the consequences of conventional war in Europe and wider emerging security challenges, it is preparing to refresh its 2021 Integrated Review (IR) of defense, security and foreign policy. The United Kingdom has already delivered on several naval capability developments outlined in the IR. However, an 'IR Refresh' may enable the United Kingdom to enhance certain elements of its naval force posture.

These themes were discussed by U.K. Chief of Defence Staff (CDS) Adm. Sir Tony Radakin, in the annual CDS lecture at the Royal United Services Institute, London on Dec. 14.

Radakin pointed to three premises in the global security situation: that current times are “extraordinarily dangerous”; that these “extraordinary times call for an extraordinary response,” which is being delivered and is countering Russia’s aggression in Ukraine; and that the response to the Ukraine war has reinforced U.K. requirement to retain a global outlook.

In the Ukraine war, focus falls on land operations. However, Radakin outlined the wider maritime context. Russian naval losses have been significant, with 12 ships (including a capital ship, the Slava-class cruiser Moskva) lost at sea or in port. In return, NATO has become stronger at sea, with Radakin noting the “hard power amassed” in the North Atlantic.

The 2021 IR identified Russia as an acute threat and China as an emerging challenge, Radakin said. However, he added, “what has happened is that events of the past year have trended towards the most negative scenarios we envisaged in the IR.”

Reflecting Western focus on high-end conventional warfare as a consequence of conflict in Ukraine, Radakin explained that the United Kingdom has delivered several significant naval capability developments since the IR. “We’ve placed the contract for the second batch of Type 26 frigates, and for the Naval Strike Missile [NSM]. The Fleet Solid Support [FSS] Ship program is moving forward, and we’ve purchased a new Multi-Role Ocean Survey Ship [MROSS] to protect our critical underwater infrastructure.”

November was a busy month for the Royal Navy (RN). The contract was awarded for the second Type 26 batch, comprising the final five hulls of the eight-ship class. The United

Kingdom announced that 11 RN ships – a mix of Type 23 frigates and Type 45 destroyers – will receive an NSM fit, with three fitted in time for operational deployment within 12 months. The United Kingdom also down-selected an FSS supplier.

Progress will continue into early 2023, when the RN is scheduled to receive the first of two MROSS vessels.

The ‘IR Refresh’ will have to address continuing challenges with Russia, but should maintain a global perspective, Radakin argued. Tackling the threats facing the United Kingdom, the review would also present opportunities.

Radakin pointed to the September 2021 Australia/UK/US (AUKUS) accord, at the core of which is building a nuclear-powered attack submarine (SSN) capability for Australia. This may enable the United Kingdom to re-assess its own SSN force level, Adm Radakin explained. “If we have the courage to do this properly, then it’s also the means to strengthen the resilience of our own nuclear enterprise and grow our submarine numbers in the decades to come,” he said. “This will benefit our contribution to NATO as well as our presence in the Indo-Pacific.”

The ‘IR Refresh,’ Radakin continued, “[is] about thinking big: accelerating the transformation of the armed forces to become even more lethal and integrated; maximising the capabilities that offer a decisive advantage; being even more global in our outlook.”

To deliver this global outlook, Radakin asked, “might it mean a British carrier regularly deployed in the Indo-Pacific at the heart of an allied strike group?”

Naval Stakeholders Assess Lessons Learned from Ukraine Conflict for Future War at Sea



Ships from multiple NATO nations including Italy, Spain, Germany and the United States, participate in Exercise Mare Aperto 22-2, a high-end exercise sponsored by the Italian Navy aimed at strengthening and enhancing the combat readiness of participating assets in the conduct of maritime operations. *U.S. NAVY / Mass Communication Specialist 2nd Class Ezekiel Duran*

PARIS – Naval stakeholders are continuing to learn lessons from the ongoing conflict in Ukraine, and are considering the implications of these lessons for future naval warfare.

In workshop briefings given at the Euronaval 2022 exhibition in Paris, France, in mid-October, navies and naval industry

alike discussed lessons ranging from strategic to operational to technological contexts.

Capt. Yann Briand, a French Navy officer serving as strategic policy branch head in France's Ministry of Defence, set out several lessons France is learning from the Ukraine war.

"The first one is that it recalls the fundamentals of naval combat at sea – that is to say, violence, velocity, and attrition," Briand said. Second, he underscored the wider strategic context of "the central role of nuclear deterrence" in the crisis.

"Another point – one not specific to the French navy, but the same for all the world's navies – is we are in close contact with our competitors," Briand said. In other words, he continued, "at sea, there is the possibility to send different political messages in a very subtle way."

"You use a fire-control radar, you come very close to another ship: all this is something you can do at sea that you cannot do on land."

This process works due to professional approaches on all sides, he said. However, he noted, instability persists.

Finally, Briand said, "Alliances and partnerships are more than very useful," with countries and their navies not able to address all such challenges alone.

The lessons learned are also indicative of a wider shift in the nature of security.

"In the last 30 years, the stability of France and Europe was based on laws, regulations and treaties; now, it is more based unfortunately on physical defense – weapons, fighters, aircraft carriers," Briand said.

Richard Keulen, a former Royal Netherlands Navy officer and frigate commander and now Dutch shipbuilding company Damen

Naval Division's director for Naval Sales Support, mirrored this perspective.

"The Baltic and Black Sea show us that Europe is flanked by important and disputed waters. Europe is depending for its prosperity and freedom to maneuver on a mare librum, in the Mediterranean also, the wider Atlantic, and even waters east of Suez."

"So, innovation in defense is extremely important, as clearly witnessed for example in the Ukraine war," Keulen said. "We have seen the pictures."

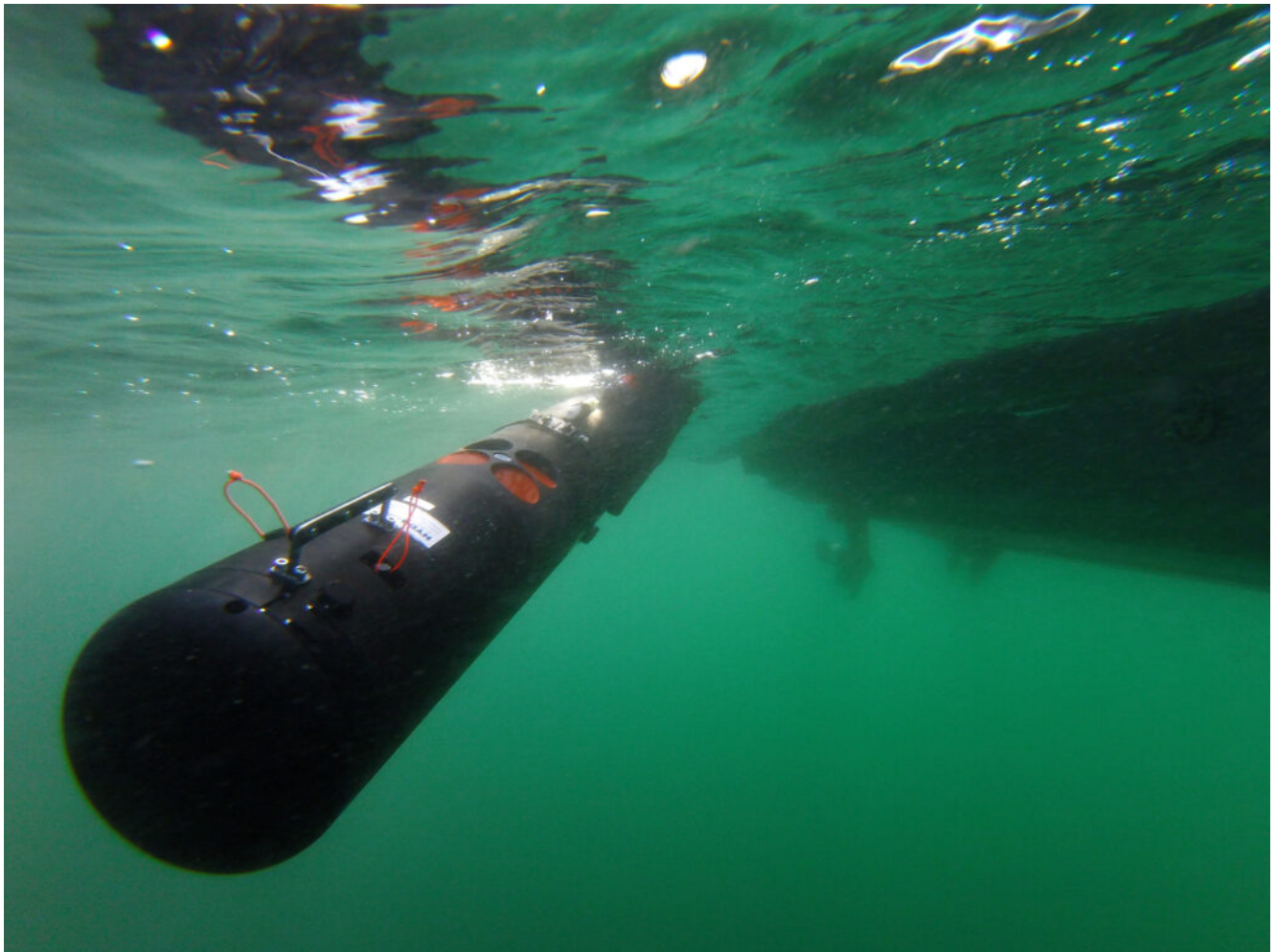
"We saw the extensive use of drones. We saw the sinking of the [Russian Slava-class cruiser] Moskva. We also witnessed the extension into northern waters of hybrid warfare towards the seabed."

In the Baltic Sea, the two Nordstream gas pipelines both suffered ruptures recently, although the cause of the ruptures has not been confirmed publicly. Such incidents prompted regional concerns about the security of sea lines of communication, including on the seabed.

"This latter phenomenon for example raises concerns and awareness in the Netherlands and its neighboring countries in the North Sea area, around the busiest waters in Europe," Keulen said.

NATO Uses Unmanned Systems Exercises to Stay Ahead in

Capability Development



A REMUS 100 unmanned underwater vehicle deploys after being launched by a Sailors during REP(MUS) in Portugal, 2019. REP(MUS) 2022 merged into NATO's Dynamic Messenger exercise in 2022. *U.S. NAVY / Chief Mass Communication Specialist Travis Simmons*

TROIA, Portugal – NATO, the Portuguese Navy, industry and other stakeholders recently conducted back-to-back exercises designed to integrate unmanned capabilities into naval operations and assist the alliance and its member states in maintaining an operational edge.

The Portuguese Navy-hosted REP(MUS) exercise – the navy's Recognized Environmental Picture (REP) activity, amalgamated since 2019 with NATO's Maritime Unmanned Systems (MUS) initiative – took place across September's first three weeks. REP(MUS) merged into Dynamic Messenger, NATO Maritime

Command's inaugural maritime unmanned systems exercise, which took place in September's final week. Both exercises occurred off Troia in southern Portugal.

The exercises aimed to drive forward NATO and member state integration of maritime unmanned systems into operational experimentation.

"These [exercises] are an accelerant to making sure we think ahead to stay ahead," Vice Adm. Keith Blount, a UK Royal Navy officer and commander of Maritime Command, told a press briefing at Striking and Support Forces NATO headquarters in Lisbon.

"We're setting commanders at sea real challenges in trying to adjust from a traditional command-and-control way of delivering warfighting capability to one that is very much at the technological edge, using equipment many of these commanders have probably not seen and operated with before," Blount added. "That drives tactics, training, procedures, the education of officers ... [and] the doctrine we follow."

Regarding Dynamic Messenger, Blount said, "This has been quite a journey in the development and construction of this exercise, going back more than two years ... We build naturally on the success of REP(MUS), a well-established exercise, and now take it on to the next step – the integration of the capability into our [activities] at sea."

For the journey's next steps, Blount said, "One of the very first things that's going to happen is we're going to start planning next year's Dynamic Messenger, building on the lessons from this year. We're doing a lot of other work as well, to try and make operational experimentation more of a norm outside of exercises so we can have it as a free good to being out in the maritime commons, doing this without any detriment to the capability we are delivering day by day."

Alongside MARCOM, Supreme Allied Command Transformation was

the second NATO strategic-level headquarters involved in delivering Dynamic Messenger.

“SACT has particular roles around innovation and experimentation within the alliance, so Dynamic Messenger provides an excellent opportunity for us to pursue both those areas,” Royal Navy officer Vice Adm. Guy Robinson, SACT’s chief of staff, told the briefing. “Working closely with [MARCOM], we can come together hopefully to get some really useful insights from which we can both develop capability within the alliance and help allies shape their own capability investments.

“We’re always trying to look ahead and ensure we maintain that competitive edge, and to embrace those new technologies when the time is right for the alliance,” Robinson said. “Exercises like this can help showcase opportunities for allies to see where they may want to invest in the future.

“The real advantage of an exercise like [Dynamic Messenger] is that ... by bringing Admiral Blount’s operational commanders into the picture, we then understand the real, practical application of these new technologies,” Robinson said. Unmanned systems “may work well in an isolated environment. [However], when you put them with commanders who have to deploy them, recover them, and see whether they are now more effective and more efficient, that’s when you get the real insight. That’s when you get the data you need to really see how they can change the battlespace.”

UK Royal Navy takes NATO

Response Force Helm, with Carrier as Flagship



The UK Royal Navy aircraft carrier HMS Prince of Wales is pictured at sea, working with NATO task groups, during the alliance's Dynamic Mariner exercise off the United Kingdom in late September 2021. The exercise was part of the certification process for the U.K. taking command of the NATO Response Force (Maritime) for 2022. *NATO MARITIME COMMAND*

The UK Royal Navy has taken command of the NATO Response Force (Maritime) task force, with a transfer-of-command ceremony held onboard the U.K. aircraft carrier HMS Prince of Wales at HM Naval Base Portsmouth, U.K. on Jan. 11.

NRF-M command rotates annually and the U.K. has handed over from the French navy. Under Rear Adm. Michael Utley, commander, U.K. Strike Force and NATO high-readiness maritime force commander, the U.K. will have the helm for 2022, with Prince of Wales as flagship in the role of afloat command platform.

In the ceremony onboard the carrier, the ship's commanding officer, Capt. Steve Higham said as Prince of Wales begins its service life, it was "entirely fitting that we start that journey as a NATO aircraft carrier." During 2022, Prince of Wales will lead maritime task groups across the Euro-Atlantic theatre, including in the Arctic and the Mediterranean. The carrier will also remain at very high readiness to respond as required to contingency operations.

Sister carrier HMS Queen Elizabeth deployed to the Indo-Pacific during its own inaugural deployment, between May and December 2021.

"If [that] deployment was a manifestation of our Prime Minister's 'Global Britain' vision, then Prince of Wales' year as a NATO command platform is a clear statement of intent by our government of the U.K.'s equally important and steadfast commitment to NATO," Higham said. The U.K. is resolute and enduring in its commitment to security, stability, and peace in the Euro-Atlantic theater, he added.



Prince of Wales is pictured carrying the NATO roundel. The carrier will operate as flagship and afloat command platform for NRF-M. *LEE WILLETT*

Integrating U.K. carrier strike capability with NATO, the carrier and its multinational battle staff will work with ships, aircraft, submarines and drones from allies and partners, the CO said.

In a media briefing onboard Prince of Wales prior to the ceremony, Higham said, in the context of challenges posed by potential adversaries, "the great advantage for us is that we will be working with partners and allies from across the NATO alliance, and that strength in depth is what gives us the real edge."

The carrier will embark airwing and other capabilities as required for specific operations.

"My job as the CO of Prince of Wales, as the flag captain, is

to make sure this deck is ready to receive helicopters, aircraft and drones from across the NATO alliance, and be ready to work alongside ships and submarines from our partners and allies,” he said. The job of a command platform is to be flexible and ready to respond, he added.

Higham noted that the ship had received an uplift in command-and-control capability to enable interoperability with NATO partners.

The 65,000-ton carrier was commissioned in December 2019, was declared fully operational on Sept. 30, 2021, and spent much of 2021 in operational generation for the very-high-readiness role as Naval Response Force -Maritime flagship.

Connecting the Dots: Gulf-Based Naval Overwatch Helps Secure ‘A to B’ Commercial Shipping Transits



Sailors assigned to the guided-missile destroyer USS Winston S. Churchill (DDG 81) wave to the Royal Saudi Naval Force frigate Makkah (814) as the ships transit the Bab el-Mandeb Strait, Nov. 20. The International Maritime Security Construct (IMSC) maintains the freedom of navigation, international law and free flow of commerce to support regional stability and security of the maritime commons. *U.S. NAVY / Mass Communication Specialist 3rd Class Louis Thompson Staats IV*

The Northern Indian Ocean region hosts some of the world’s most critical maritime trade routes. Sea lines of communication (SLOCs) crisscross the region, connecting East

and West and linking key energy supplies from the Persian Gulf.

The SLOCs pass through two vital maritime choke points: the Bab-el-Mandeb Strait, which connects the Gulf of Aden to the Red Sea, and the Strait of Hormuz, which connect the Northern Arabian Sea to the Persian Gulf via the Gulf of Oman. Currently, an average of 17,000 ships per year pass through the Bab-el-Mandeb, with 42,000 transiting the Strait of Hormuz. While international focus returns to high-end, great power rivalry, these two choke points – and the SLOCs connecting them – have continued to face emerging and enduring low-end asymmetric maritime security threats, posed by both non-state and state actors.

In and around the Bab-el-Mandeb and Gulf of Aden region, the piracy threat of the early 2000s has been replaced by maritime security risks spilling over from the civil war ashore in Yemen. Naval and merchant ships have been attacked with missiles and improvised explosive devices. In and around the Strait of Hormuz, the state-based threat to commercial shipping has persisted for some time, with malign activity continuing today. For example, on Aug. 4 the Panama-flagged MV Asphalt Princess was boarded, reportedly by armed men, in what was believed to have been an attempted hijacking.

The persistent maritime security risks across the region have prompted the establishment of several navy-led maritime security constructs, designed to secure the maritime choke points and waters across the region from the Gulf to the southern Red Sea. The Combined Maritime Forces, led by the U.S. Navy and based in Bahrain, runs three combined task forces (CTFs) that tackle various regional risks. The U.K. Royal Navy's Bahrain-based U.K. Maritime Component Command (UKMCC) supports U.K. maritime interests in the region, including providing Royal Navy ships for maritime security presence.

Both the U.S. and U.K. also have long-established constructs set up to provide primary points of contact with the merchant shipping community – the Naval Cooperation and Guidance for Shipping (NCAGS) for the U.S. and the U.K. Maritime Trade Organisation (UKMT0) for the U.K.

Following a spate of attacks on merchant shipping in and around the Strait of Hormuz in mid-2019, the U.S. Navy moved to establish a multinational organization to provide a security link between the naval and merchant communities. The International Maritime Security Construct (IMSC) is the strategic-level organization; its at-sea operational task force is CTF Sentinel.

“The phrase ‘international solution to an international problem’ is quite a good one because it does involve a lot of countries,” Chief Lynn Cook, a Royal Navy chief petty officer posted to UKMT0 but also sitting on IMSC’s watchfloor, told *Seapower*.



A U.S. Marine Corps CH-53E Super Stallion attached to Marine Medium Tiltrotor Squadron 164 (Reinforced), 15th Marine Expeditionary Unit (MEU), embarked aboard the amphibious transport dock ship USS San Diego (LPD 22), conducts a routine transit patrol in support of the International Maritime Security Construct (IMSC) in the Arabian Gulf, March 21. *U.S. MARINE CORPS / Sgt. Desiree King*

Primary Purpose

A primary purpose of NCAGS, UKMT0, IMSC and other maritime security organizations is to connect merchant shipping transiting the region with multinational security forces that can provide assistance if needed. This communications link between the military and merchant marine stakeholders has always been vital. However, as threats to commercial shipping security endure and increase – challenging the ability to keep the SLOCs open, ensure freedom of navigation and maintain international law at sea – so the importance of improving such

communication and enhancing the strategic relationship between these two stakeholders endures and increases as well.

“The crux of commercial shipping is ‘time is money’ and getting from point A to point B,” Lt. Cmdr. Adena Grundy, a merchant mariner and former subject-matter expert and maritime domain analyst with NCAGS, told *Seapower*. “Any time there’s a [security] concern that could delay the shipping, it’s ... a concern for the companies. It goes back to ensuring freedom of navigation, and that commerce can keep moving back and forth.”

The 2019 attacks – which prompted not only the establishment of IMSC/CTF Sentinel, but also a significant international crisis (even in a region where tensions traditionally run high) – underlined the importance of maintaining regional maritime security for both global maritime trade and wider international stability.

For IMSC/CTF Sentinel, which currently numbers eight member countries, its mission has three main pillars, Lt. j.g. Jennifer Bowman, the U.S. Navy public affairs officer for IMSC/CTF Sentinel, told *Seapower*. These pillars are reassurance, deterrence and partnership. “Our mission is ever vital in this region – to help reassure and stabilize the global economy,” Bowman said.

“Our main mission on the operational side is being able to deter and expose malign activities, both state and state-sponsored,” said Lt. George Gagnon, a U.S. Navy warfare officer posted to IMSC/CTF Sentinel as a lead watchstander and responsible for military staffs/task force coordination.

“We’ve also got the other side, where we want to reassure the shipping community that we’re here, we’re visible, and we’re going to do what we can both to provide that deterrence and try and expose the malign activities to the world, so we can keep the waterways safer,” Gagnon said. “We do that in a lot of different ways. We are maintaining contact, through the

ships that work for us, via maritime safety calls on bridge-to-bridge, and by sharing maritime domain awareness [MDA] information.”

“As we’ve seen, incidents have happened recently,” Bowman said. “It’s about being vigilant, it’s about making sure we are out there watching, taking calls, communicating, picking up the phone, [being] available via email and chat, so [the shipping community] knows we’re here.”

As regards understanding what the commercial stakeholders need from their military counterparts, “I think the reassurance piece of the mission is so paramount,” Grundy said.

As a business, the shipping community faces multiple pressures.

“If you’re delayed for the port, that delays the next guy. ... It’s like a domino effect. It really is just A to B, in-out.”

While the shipping community wants to retain its autonomy to maximize efficiency in moving between points A and B, it also retains anxiety over whether help will be there if needed, Grundy said.

“It’s like a policeman,” Grundy said. “You don’t necessarily want the officer living in your house or hanging out in the yard, but you want to know they’re going to show up if somebody is breaking into the house. ... The shipping community just want that reassurance that they can operate freely.”



The Royal Bahrain Naval Force coalition ship, RBNS Al Muharraq, operates in the Arabian Gulf during a sentry patrol as part of the International Maritime Security Construct (IMSC). The IMSC maintains the freedom of navigation, international law, and free flow of commerce to support regional stability and security of the maritime commons. *U.S. NAVAL FORCES CENTRAL COMMAND*

Presence and Partnership

There are several strands to how the naval community offers such reassurance.

There is simple presence at sea and communicating that presence to both the shipping community and any would-be malign actor.

“Our mission at IMSC is providing overwatch, providing detection. We want to try to de-escalate and deter,” Gagnon said. “Being able to have that transparent messaging and exposure on our side and having our ships out there so the merchant community sees them and hears them, so they can have that reassurance, means we can say, ‘Hey, we’re here, we’re doing our job, and you can continue to navigate these waters safely and freely to get to wherever your point of destination is.’”

As to building communication, reassurance and wider partnerships, organizations like IMSC and UKMT0 act broadly as middlemen between the military and shipping communities, said Cook. “[IMSC’s] job is to monitor the traffic and keep an eye on the shipping. [We] advise and guide and reassure so they are more likely to follow what we’re asking them to do.

“We give them reasons, ‘don’t go there because,’ rather than just a direct order to not go somewhere,” Cook said.

UKMT0 also acts as an initial contact hub for ships with security concerns. “If an incident does happen, first point of contact for a merchantman is UKMT0,” Cook said. UKMT0’s contact telephone number can be found on every ship’s bridge.

“UKMT0 tends to act like a directory inquiries service,” Cook said. “UKMT0 will get calls for every type of incident – an attack, a medical emergency or just a general breakdown. It then decides who to direct the call to. For instance, if it’s a U.S. ship it will go to NCAGS, if it’s a U.K. ship it will go to UKMCC.”

From NCAGS' perspective, "We're keeping constant communication on a daily level with the ships. We keep that line of communication open; we also extend it to company security officers. ... It's a reassurance piece," Grundy said. "It's a mutual relationship because they can benefit from that constant update. They know a watchstander answers that phone."



HMS Montrose shepherds a container vessel in the Strait of Hormuz. *U.K. ROYAL NAVY*

Information Sharing

A central element of this effective communication is information sharing between the military and merchant marine stakeholders. This is a two-way, mutually beneficial process, Gagnon said.

"It's being able to connect the dots on the information sharing ... understanding what avenues we can utilize right now."

He pointed to Sea Vision, a Navy-designed, ship automatic identification system (AIS)-based software product NCAGS uses to monitor shipping. "Sea Vision displays AIS and that's about as up-to-date as we can get on where merchant shipping is," he said.

"From an IMSC/CTF Sentinel perspective, we have a 24/7 watchfloor, we're constantly monitoring systems, but we really are only as good as the communication we get from the ships," Gagnon said. "Ships being able to do the little things like keeping their AIS up to date and communicating with UKMT0, NCAGS, or whomever if they're seeing things, and being able to continue to build that trust between the merchant industry and us, is going to be crucial as we move forward."

The military community also continually looks at new ways of getting messages out to the shipping community. One route, Gagnon said, is "staying up to date on how we can utilize

open-source information opportunities to expose malign activity when it happens,” for example, via social media channels like Twitter. “As technology changes, as the avenues of communication change, being able to stay on top of that, which we are, and being aware of how we can get the word out is really important,” Gagnon said.

Broadening the Base

While the IMSC, NCAGS and UKMT0 representatives all viewed the military-merchant marine stakeholder partnership as strong and effective, they said there are ways to make it stronger still: broadening the stakeholder base to include port owners and others, and improving communications between stakeholders.

“At the end of the day, we’re all trying to achieve the same endgame,” Cook said. “What we’re trying to do is increase MDA and ensure the shipping lanes stay open and the merchantmen have the freedom of navigation that they’re entitled to.”

Carrier Group Deployment Allows Combined F-35 Integration in Indo-Pac, say Senior US, UK Officers



Distinguished visitors from the USS Carl Vinson (CVN 70) and Carrier Strike Group One observe an F-35B Lightning II with the United Kingdom’s (UK) 617 Squadron launch aboard HMS Queen Elizabeth as part of Carrier Integration Operations in the Bay of Bengal on Oct. 17. Dual-carrier operations between Carrier Strike Group One and the U.K.’s Carrier Strike Group 21

demonstrate the unmatched interoperability the F-35 provides.
U.K. ROYAL NAVY Royal Navy / LPhot Unaisi Luke

The United Kingdom's deployment of its HMS Queen Elizabeth carrier strike group on its CSG21 mission has provided opportunities for F-35 joint strike fighter user countries to conduct combined integration and training in the Indo-Pacific region, senior U.S. Navy and U.K Royal Navy officers told the Pacific Future Forum conference in October.

The CSG's airwing is already an integrated, combined F-35 unit, with the 18 embarked F-35B Lightning II short take-off/vertical landing JSFs comprising 10 U.S. Marine Corps and eight Royal Navy or Royal Air Force aircraft.

However, recent activities in the Indo-Pacific theater have enabled much wider F-35 training and demonstration of multinational integration, U.S. Indo-Pacific Commander Adm. Chris Aquilino told the U.K. government-backed conference, held Oct. 20-21 on the aircraft carrier HMS Prince of Wales at HM Naval Base Portsmouth.

Aquilino highlighted CSG21's presence in a multinational exercise, in the Philippine Sea in early October, which involved four "large deck" carriers: three aircraft carriers, the Royal Navy's HMS Queen Elizabeth and the U.S. Navy's USS Carl Vinson and USS Ronald Reagan; and an amphibious ship, the Japan Maritime Self-Defense Force's JS Ise.

"You can see these strike groups conducting multidomain operations, flight operations, air-defense exercises, simulated strikes, mixing together F/A-18 Super Hornets from Ronald Reagan, F-35Bs from the [U.K.], USMC F-35Bs, and F-35Cs from Carl Vinson. That's an impressive gathering of fifth-generation aircraft that can be moved and put anywhere at a place and time of our choosing," he said.

"This kind of combined military operation needs to become more normalized. We need to orchestrate it through the lens of

campaigns, to ensure we can counter any anti-access threat," Aquilino said. "This effort to plan, coordinate and execute these kinds of operations is at the core of US INDOPACOM's approach that you'll hear referred to as 'seize the initiative'."

In what he referred to as "quad-carrier' operations," Commodore Steve Moorhouse – the Royal Navy's commander, U.K. Carrier Strike Group, embarked at sea in Queen Elizabeth for CSG21 – said the Philippine Sea exercise brought together "a combined fourth- and fifth-generation airwing of well over 120 aircraft."

Briefing the conference from the carrier, Moorhouse said, the "exercise not only helped us to develop our tactics and procedures, but it also allowed us to pursue increasingly complex and integrated activities."

"Carrier strike has ... a convening power to bring together like-minded countries, and indeed air forces and navies of all sizes and all types around the world," Moorhouse said.

He highlighted some examples relevant to F-35 capabilities.

"During our time out here, we've supported Japan operationalizing its F-35A capability, and [to] introduce into service their F-35B variant. We've engaged with the Republic of Korea, which also strengthened understanding of how to operate big decks and how it will integrate its own F-35B capability into the maritime."

South Korea is developing an aircraft carrier capability, under its CVX program, as the host platform for its F-35Bs.

Moorhouse also discussed how the Queen Elizabeth CSG's combined U.K./U.S. F-35B airwing had provided effects in the Euro-Atlantic theater, during the first phase of the CSG21 deployment.

“If I look back to our time in the Mediterranean, we were launching the first F-35 sorties from the Mediterranean north into the Black Sea – a round-trip of well over 1,000 miles – whilst also sending jets east into Iraq and Syria on six- and seven-hour missions in support of Operation Shader,” the U.K.’s counter-insurgency activity. Throughout, we were maintaining an on-deck, ready alert capability to respond to Russian air incursions and overflights.”

In the latter case, Moorhouse said over 30 live intercepts of armed Russian fighter and bomber aircraft were conducted in just over two weeks during that part of the mission.

USMC Amphibious Capability Critical to Popping Area Denial ‘Bubbles’



U.S. Marine Corps Sgt. Kaleb, a crew chief with Marine Heavy Helicopter Squadron (HMH) 461 Clark sits on the CH-53E Super Stallion’s ramp as the aircraft leaves the USNS D. T. Williams (T-AK-3009), April 5, 2021. 2nd Marine Aircraft Wing is participating in Dynamic Cape 21.1, an operational logistics exercise simulating a Marine expeditionary force’s ability to exercise command and control in a contested environment as well as exercising naval integration in a joint environment. *U.S. MARINE CORPS photo by Lance Cpl. Caleb Stelter*

Whether operating in the Euro-Atlantic or Indo-Pacific theaters, U.S. naval forces and their allies and partners must confront constrictions in operations – in both peacetime and crisis – generated by adversaries attempting to apply anti-access or area denial strategies, known as A2/AD.

Such strategies are designed to deny access for U.S. and other forces to key waters and coastal regions by inflating A2/AD “bubbles” around, for example, critical choke points at sea or entry points ashore.

In the Euro-Atlantic theater, areas like the Greenland-Iceland-U.K. (GIUK) gap region in the North Atlantic, the Kattegat and Skagerrak Straits that connect the North and Baltic seas, and the Eastern Mediterranean and Black Sea region, especially around the Bosphorus and Dardanelles straits, are examples of strategic areas adversaries could attempt to “bubble” by using mines, anti-ship missiles, submarines or strike aircraft. The East China Sea and the southern reaches of the South China Sea are areas of potential A2/AD actions in the Indo-Pacific region.

In any Western naval efforts to deter, defend against or deploy through A2/AD efforts, amphibious forces would play a critical role. Deployed at sea to deliver effect ashore, amphibious task groups and the marine forces they insert provide a capability that is critical to popping any A2/AD bubbles.

“Amphibious capability is a strategic capability – the threat of joint forcible entry remains a strategic capability,” Lt. Gen. Brian Beaudreault, commanding general of the U.S. Marine Corps’ II Marine Expeditionary Force (II MEF), told Seapower. “We’re still going to need an ability in the future to come from an unexpected direction, seize and hold ground, take something of value, and/or destroy something. Whether it’s a light raiding force or a distributed element of a larger whole, amphibious force remains a threat the adversary is going to have to honor.”

The U.S Marine Corps is the United States’ amphibious force. In the Euro-Atlantic theater, the responsibility of generating amphibious presence at sea and delivering amphibious effects ashore rests with II MEF, based on at Camp Lejeune, North

Carolina.

The Marine Corps delivers its amphibious effect in partnership with the U.S. Navy. For II MEF, this partnership is based around its increasingly integrated relationships with U.S. 2nd Fleet, based in Norfolk, Virginia, and U.S. 6th Fleet, based in Naples, Italy.

In the Indo-Pacific region, III MEF, based in Okinawa, Japan, provides the amphibious force, supported by U.S. 3rd Fleet, based in San Diego, and U.S. 7th Fleet, based in Yokosuka, Japan.

Integrated Scale

The Marines have always been tasked with exploiting the sea as a maneuver space to deliver amphibious effect across the littoral region. However, with returning great power competition and the naval rivalry it brings raising the risk of more significant security crises, Western navies are increasingly focused on delivering integrated effect at scale. For the U.S. naval force, integration between the Navy and Marine Corps components – known as Blue-Green teaming – is increasingly important in generating and delivering force at scale, whether for simple presence at sea or for inserting forces across the littoral seam between sea and shore.

Another key element in how the Blue-Green team enables force generation and delivery is forward deployment. Situated at sea in amphibious ready groups or expeditionary strike groups, Marine Corps forces will often find themselves forward deployed within striking reach of an A2/AD bubble, or even inside one.

Adversary efforts to restrict movement and access at sea is not a new development in naval strategy or warfare. What has perhaps changed is adversary joint forces are creating a layered A2/AD capability threat. In Marine Corps assessments of adversaries' A2/AD strategies and how to counter them,

amphibious force plays a certain role.

“What we realized when we studied A2/AD is that we are the inside force,” Beaudreault said. “So, while many others [ask] ‘How do you attack from the outside in?,’ it’s our view – and it’s certainly true in III MEF, day-to-day – that we’re already operating inside the weapons engagement zone. The nature of the problem is not ‘How do you fight your way into it?’ It’s ‘How do you survive and thrive within it?’”

The Marine Corps is addressing this question in several ways. For example, it is developing new concepts of operations such as distributed maritime operations (DMO) or expeditionary advanced base operations (EABO).

“The best method of ensuring your survival and effectiveness is to distribute in smaller forces, relying on capabilities that are low probability of intercept that still support a kill-chain with massed effects,” Beaudreault said.

The Marines are focused on how the service can enable naval maneuvers at sea through land-based operations, Beaudreault said. This can be done through DMO or EABO, or through using a large continental force. In all such contexts, II MEF and the Corps more widely are assessing how improved Marine Corps sensing and long-range fires capability in particular can help the Navy achieve sea denial and sea control.

Here, the Navy-Marine Corps Blue-Green team will make a significant capability and operational contribution. The F-35 Lightning II Joint Strike Fighter provides a step-up in sensing capability and will deploy this capability from expeditionary advanced bases ashore and from carrier strike groups and amphibious ready groups at sea. The U.S. naval long-range precision strike inventory includes several systems bringing different capabilities, although the Kongsberg-Raytheon Naval Strike Missile is becoming an increasingly prominent arrow in the quiver.

The Naval Strike Missile is deployed currently on three Navy Independence-class littoral combat ships. Navy spokesman Alan Baribeau told *Seapower* the service is continuing to install strike missiles on Independence-class hulls, prioritizing fits based on availability schedules and operational commitments. The Naval Strike Missile is also slated for future fits to the Freedom-class littoral combat ships and is a candidate system for future frigates and amphibious ships.

“I think the broader recognition is that the change now from before in the A2/AD [context] is that we’re going to be in there, and there are a lot of systems,” Beaudreault said. “When we look at ranges and sensing capability in the adversary, how do we deny theirs and still thrive within? That is the art of where we’re trying to go.”

In terms of building integrated Blue-Green capability, he said the two services have looked at a range of issues including ship survivability and what amphibious capabilities any future platforms will provide. In amphibious capability terms, Beaudreault highlighted the Corps’ integrated role with the Navy in addressing traditional naval warfare tasks such as antisubmarine and anti-surface warfare, and underlined the importance of capabilities like long-range precision fires and of dealing with threats such as coastal-defense cruise missiles and hypersonic missiles.

Aviation Integration

In terms of integrated capabilities that meet the “survive and thrive” requirement in the A2/AD context, assets like the F-35 provide significant increase in effect as individual platforms.

“Those F-35s can hold any target at risk essentially, and that is a huge capability for us when we’re aboard amphibious ships, being able to not just survive but again thrive as that inside force,” Beaudreault said.

Integrated airwings can provide value for operational commanders, and not just for individual operations or for Blue-Green teams, but for the U.S. Air Force, allies and partners.

Beaudreault said Marine Corps experience in recent exercises, such as the MEFEX 21.1 simulated training activity held at command-and-control hubs across the East Coast in November 2020, highlighted the benefits for combatant commanders in having a more integrated maritime airwing.

“It is the efficiencies to be gained by developing perhaps a maritime aviation command element and looking at how we better merge carrier-based aviation with the Marine Aircraft Wings,” he said.

Joint and combined integration of aviation and other force elements can provide wider capabilities, for example in contributing to integrated air and missile defense, Beaudreault said.

“Ballistic missile defense and air defense remain my No. 1 concern in a European scenario. That is by far the top of the list,” he said. “After we’ve gone through the deployment phases and we’re operating ashore, depending on what the combined force air component commander has or hasn’t been able to achieve, you still want to be able to know that I’m tucked up under a Patriot umbrella from the Army or an Aegis-capable ship from the Navy, and within their coverage.”

Communications, Information

Sharing Seen as Critical for Middle East Shipping Security



Collaboration between merchant shipping and military forces is seen as critical to securing trade flows across the Middle East. NCAGS

Collaboration between the merchant shipping community and coalition military forces is critical in securing maritime trade flows across the Middle East region, with communications and information sharing central to such collaboration, a U.S. Navy officer told a recent regional shipping stakeholder conference.

“Events have made it clear that no one entity alone can provide assurance to merchant shipping in this region,” Capt. Todd Hiller, commanding officer of Bahrain-based Naval Forces Central Command’s (NAVCENT’s) Naval Cooperation And Guidance for Shipping (NCAGS) organization, told the annual International Maritime Security Construct (IMSC) conference

last month. “Never before has it been more important to collaborate with our coalition partners and stakeholders to protect freedom of navigation in this critical part of the world.”

Established in 2019 following attacks on commercial ships in port and at sea, IMSC is a multinational maritime coalition designed to deter “gray zone” threats to commercial shipping operating between the Southern Red Sea and the Northern Gulf. The 2021 conference, titled Security through Partnership, was IMSC’s second annual event, held virtually due to the Covid-19 pandemic.

While IMSC-led naval presence has done much to deter attacks, risk persists. “From unmanned vessel-borne improvised explosive device attacks, to limpet mines attached to the hulls of tankers, to the recent seizure of the Motor Tanker Hankuk Chemi ... these threats continue to attempt to destabilize commercial shipping,” Hiller said.

“Given the high risk of navigating, and security interests in the Middle East, there has been a steady uptick in stakeholder involvement in information sharing,” he said. “More times than not, stakeholders and coalition partners have shared specific knowledge and expertise that is paramount in staying ahead of the [risk].”

NCAGS acts as a key node in such information sharing, Hiller said. “NCAGS is an organization that bridges the gap between sustainment of forward-deployed military forces and merchant shipping, by providing a framework for communicating directions, advisories, concerns, and information. The mission is to assist the [U.S. 5th] Fleet commander in managing risk by providing maritime domain awareness (MDA), real-time clarity of the merchant shipping picture, and ensuring safe passage of merchant shipping in crisis or contingency.”

Staffed by U.S. Navy reservists, many of whom are merchant

mariners or strategic sealift officers, NCAGS can scale up from providing single personnel as merchant marine advisors or liaison officers ashore or at sea, to a large theater contingent providing a shipping coordination center with teams assigned ashore or at sea.

Effective communications and information sharing is two way, Hiller said. For NCAGS, its outputs include creating incident reports, conducting ship visits, recommending transit routes, providing subject matter expertise, sharing best practice (currently based around the stakeholder-produced Best Management Practice document, or BMP 5), supporting NAVCENT forces and building and sharing an overall MDA and “pattern of life” picture. NCAGS is a touchpoint for shipping, for example for vessels transiting high-risk regions like the Southern Red Sea or the Straits of Hormuz. In return, the shipping community shares ship, cargo, and voyage information with NCAGS and encourages vessel masters to follow BMP5 guidance and report incidents to help build MDA.

“[Sharing] the most current information and accurate assessment of the merchant shipping picture is critical to the establishment of the ‘pattern of life’ and the achievement of MDA,” Hiller said.

From NCAGS’ perspective, effective communications and information sharing are enabled by its monitoring, tracking, and wider information technologies.

“Staying ahead with the latest information technology will keep NCAGS ahead of adversaries and reduce risk as it relates to operations, monitoring and surveillance, piracy, war, or other risks that could potentially impact MDA and patterns of life within the region,” Hiller said.

Hiller told *Seapower* that NCAGS information technologies include AIS Live and the SeaVision web-based maritime situational awareness tool, and that it is procuring the

Maritime Intelligence Risk Suite tool that combines shipping database, real-time ship tracking, and risk event information.

Piracy at Sea Decreasing Worldwide in 2019, Report Shows



A visit, board, search and seizure team from the guided missile destroyer USS Pinckney approaches a suspected pirate vessel after another vessel, Nordic Apollo, reported being under attack and fired upon by pirates. U.S. Navy

LONDON – Global incidents of piracy and armed robbery at sea have decreased across the first nine months of 2019 when compared to the same period in 2018, according to the London-based International Maritime Bureau (IMB).

In its 2019 third-quarter report, the IMB said 119 incidents had been reported to its Piracy Reporting Centre (PRC) compared to 156 in 2018.

According to the report, the 119 incidents included: four vessels hijacked; 95 vessels boarded; 10 attempted attacks; and 10 vessels fired upon.

The IMB noted also a decline in seafarers being seized (119 in 2019, against 151 in 2018).

<https://twitter.com/SafetyatSeaMag/status/1186212235758231559>
Despite reduced attack numbers, the report indicated that incidents involving weapons remain constant, with 23 knife-related and 35 gun-related incidents reported compared to 25 and 37 in 2018.

“These statistics confirm IMB’s concerns over continued threats to the safety and security of seafarers,” the IMB said in a statement.

The report highlighted the Gulf of Guinea as an enduring hot spot, even though attack numbers there declined. According to the IMB, 86 percent of overall crew hostage-taking (where seafarers are held on ship) and 82 percent of crew kidnappings (where seafarers are taken ashore) occurred there.

“Although incidents are down, the Gulf of Guinea continues to be a concern for piracy and armed robbery-related activities with kidnappings of crew members increasing in both scale and frequency,” IMB Director Pottengal Mukundan said.

“These statistics confirm IMB’s concerns over continued threats to the safety and security of seafarers.”

International Maritime Bureau statement

Of the attacks, 29 took place off Nigeria, including: two hijackings; 17 successful boardings; one unsuccessful boarding; and nine ships fired upon. Eleven incidents also occurred at Nigeria’s Lagos port, the highest number for any port. Incidents at Lagos included opportunistic attacks and cargo-theft attempts, an IMB spokesperson told *Seapower*.

Within the global total of four hijackings, the two other incidents also took place in the Gulf of Guinea, off Togo and Equatorial Guinea.

Other areas of recent shipping security concern include Southeast Asia and Somalia.

For Southeast Asia, the report noted a decline in incidents around Indonesia, reflecting what the IMB said has been a gradual five-year reduction in attacks there. The report counted 20 incidents, compared to 86 for the same period in

2015. "The reduction in incidents off Indonesia is mainly due to increased patrolling," the IMB spokesperson said. Indonesia and other regional countries have been co-operating in conducting patrols.

Off Malaysia, 10 attacks occurred (slightly up from nine in 2018).

For Somalia, the report said "no piracy-related incidents [were] recorded for the first nine months of 2019." However, the IMB said that "Somali pirates continue to possess the capacity to carry out attacks in the Somali basin and wider Indian Ocean."

"The IMB PRC advises ship owners to remain cautious when transiting these waters," the statement continued.

Another recent hot spot has been Venezuela, where 11 attacks took place in the first nine months of 2017. However, for the same period in 2019, six occurred.

The IMB reiterated the role of reporting in enabling more effective incident response. "It is important that shipmasters and owners continue to report all actual, attempted and suspected incidents to ensure that an accurate picture of these attacks emerges and action is taken against these criminals before the incidents further escalate," Mukundan said.

Cooperation also remains critical to reducing risk and tackling incidents. In the Gulf of Guinea, for example, the IMB PRC has relayed incident reports to the Nigerian navy, which has then deployed vessels to assist ships under attack, the IMB spokesperson told *Seapower*.