



CUTTING THE BOW WAVE



COMBINED JOINT OPERATIONS FROM THE SEA CENTRE OF EXCELLENCE



2019





TRANSFORMING ALLIED MARITIME POTENTIAL INTO REALITY



Disclaimer: The opinions, conclusions, and recommendations expressed or implied within are those of the contributors and do not necessarily reflect the views of the U.S. Department of Defense, U.S. Fleet Forces Command, CJOS COE, NATO, ACT or any other government agency. This product is not a doctrinal publication and is not staffed but is the perception of those individuals involved in military exercises, activities and real-world events. The intent is to share knowledge, support discussion and impart information in an expeditious manner.

Front Cover: F-35C prepares to make landing on USS Abraham Lincoln (CVN 72). Source: MCSN Amber Smalley
Back Cover: F-35s onboard HMS Queen Elizabeth. Source: UK Defence Journal



Publisher's Note

Cutting the Bow Wave is an annual publication by Combined Joint Operations from the Sea Centre of Excellence, United States Fleet Forces Command, Building NH-39 in Norfolk, Virginia. For publication purposes, all articles and materials submitted become the sole property of CJOS COE. For copies and information, mail request to:

CJOS COE
ICO Bow Wave Editor
1562 Mitscher Ave. STE 250
Norfolk, VA 23551

Managing Editor:
CAPT Todd Bonnar, MSC, RCN

Deputy Editors:
CDR Jose "Hose B" Garza, USN
CDR Robert Waggoner, USN

USFF.CJOS.COE@NAVY.MIL
[HTTPS://TWITTER.COM/
CJOS_COE](https://twitter.com/CJOS_COE)

- 4** **Message from the Director**
VADM Bruce H. Lindsey, USN
- 6** **Message from the Deputy Director**
CDRE Tom Guy, RN
- 9** **"Red Storm Rising"**
CAPT Todd Bonnar, MSC, RCN
- 13** **NATO's Return to the North Atlantic**
Mr. Stephen J. Flanagan
- 18** **The Stand Up of JFC Norfolk**
CAPT Todd Bonnar, MSC, RCN
- 21** **Commanding the Alliance at Sea**
Mr. James Henry Bergeron
- 29** **An Introduction to Joint Force Command Norfolk**
CDR Josh Heivly, USN
- 32** **Allied Interoperability and Coordination Guide**
CDR Joerg Maier, DEU N
- 35** **Challenging Road Leading to Maritime Force Interoperability**
CDR Tony Ting, USN
- 38** **Development of the NATO Amphibious Task Force**
CDR Jose Conde, PRTM
LTCOL Jos Schooneman, RNLM
- 41** **Anti-Satellite Capabilities and Military Operations**
CDR Neculai Grigore, RON
- 45** **Basics of Space Support to NATO Operations**
CDR Robert Waggoner, USN
- 48** **Air Defense in the North**
LTCOL Roberto Patti, ITAF
- 51** **Unmanned Maritime Systems in the Battle of the Atlantic**
CDR Pavlos Angelopoulos, HN
- 54** **The Next Battle of the North Atlantic**
CDR Geir Hestvik, RNON
- 58** **Power Projection in the Modern-Day Maritime Domain**
LCDR Graig Diefenderfer, USN
- 61** **2019 Program of Work and Activities**
- 62** **Centres of Excellence Fact Sheet**



Source: CDR Jason Geddes

The Virginia-class attack submarine USS North Dakota (SSN 784) transits the Thames River.



In the forward to our last edition of the ‘Bow Wave’, I reflected on the scope of our work here in CJOS, particularly the importance of Alliance interoperability and collective endeavor in the face of a dynamic environment and increasingly sophisticated threats. Looking across the maritime domain today, it is clear to me that our collective efforts are even more vital. Since we last went to print, NATO has begun implementing its greatest structural reorganization in a generation, and with that, JFC Norfolk is well on its way to becoming a reality, bringing a renewed focus on deterrence in the Atlantic and the High North. CJOS has been superbly well-placed to support this activity, providing the operational context to enable the implementation of strategic intent, and what a fascinating and valuable project this has been. In step with the wider renewed focus on peer-adversary capability, you will see a perceptible shift in emphasis in this year’s Bow Wave as we aim to address the most pressing issues in the maritime domain.

With an excellent network across the NATO Alliance, with industry and academia, CJOS aims to continue to provide rigorous analysis and effective, accurate advice on maritime military matters. As the Alliance adapts and the environment evolves, CJOS is doing likewise in order to remain a valuable and relevant source of expertise – helping to turn Allied maritime potential into reality. ❄️



Source: MC3 Jameson Lynch

F-35C Lightning II prepares to take off from USS Dwight D. Eisenhower (CVN 69).



Vice Adm. Bruce Lindsey graduated from the U.S. Naval Academy in 1982 with a Bachelor of Science in Mathematics and was designated a naval flight officer in 1983. He is a graduate of the Joint Forces Staff College and the Navy's Nuclear Power Program. Lindsey holds a Master of Arts in National Security and Strategic Studies from the Naval War College in Newport, Rhode Island, and earned a doctorate in public policy from George Mason University in Fairfax, Virginia.

His initial at-sea assignments were with Antisubmarine Squadron (VS) 21 aboard USS Enterprise (CVN 65) and on the staff of commander, Task Force 70/75/77 embarked in USS Midway (CV 41). His aviation department head tour was with VS-21 assigned to Carrier Air Wing (CVW) 5 forward deployed to Atsugi, Japan, operating from USS Independence (CV 62). From 2005 to 2007 he served as the executive officer of USS Theodore Roosevelt (CVN 71).

At sea, Lindsey's first command was VS-29 flying off USS Carl Vinson (CVN 70) during the first 72 days of Operation Enduring Freedom. His first ship command was USS Dubuque (LPD 8) during Operation Enduring Freedom deployment to the Persian Gulf, North Arabian Sea and Red Sea. He commanded Carl Vinson while completing a change of homeport from Norfolk to San Diego, providing humanitarian assistance and disaster relief to the people of Haiti during Operation Unified Response and executing a deployment to the Persian Gulf and North Arabian Sea in support of Operations Enduring Freedom and New Dawn. He commanded the first Optimized Fleet Response Plan Carrier Strike Group (CSG), CSG-10/USS Dwight D. Eisenhower Carrier Strike Group. He additionally served as commander, Carrier Strike Group 4.

Ashore, Lindsey served as aide to the chief of staff, commander in chief, U.S. Naval Forces Europe in London; as the operational test director and analyst at Air and Evaluation Squadron (VX) 1 in Patuxent River, Maryland; and as a senior operations officer at the National Military Command Center on the Joint Staff (J3) in Washington, D.C. His first flag assignment was deputy director for Operations, J3, Joint Staff. He most recently served as commander, Naval Air Force Atlantic.

Lindsey received the 1997 Naval War College President's Award for Academic Achievement and Community Service, and the 2007 Adm. Jeremy Boorda Award for Outstanding Integration of Analysis and Policy.



2018 CJOS COE Steering Committee meeting held at Fleet Forces building.



As a NATO-accredited COE, we naturally focus our efforts in support of the NATO Maritime Enterprise, and the Alliance's strategic direction of travel. Our work here over the past year has seen us continuing to support our nations and NATO's activity on a broad front, some of which you will see highlighted in our Bow Wave articles. This year for the Bow Wave, we have adopted a more thematic approach and given the urgent and vigorous focus on the North Atlantic, we have structured our work to provide some insight into key themes that are of importance to those interested in maintaining peace and stability across this vast and vital body of water. Much of this has already contributed to thinking on both sides of the Atlantic as Allied maritime command and control developments have taken shape. CJOS has found itself at the nexus of the

debate, ideally situated to provide nations and NATO with advice on shaping future arrangements. As new structures coalesce, CJOS will remain engaged in this invigorating evolving thinking; as the Alliance inevitably expends some of its energy in internal reflection and revising structural arrangements, the 'close battle', it is vital that we keep a keen eye on the longer range scale. The 2019 edition of Cutting the Bow Wave highlights some of the work our international staff members completed in 2018 as well as the cohesive and inter-linked transformational efforts of our 2019 Program of Work as a critical member of NATO's Maritime Enterprise. This edition attempts to capture both the 'what' and the 'why' as NATO and nations execute the necessary refinements of the operational command structures, and force employment concepts at the tactical level, in order to maintain a visible defence and effective deterrence in the face of an increasingly more aggressive near peer adversary. The articles aim to provide a synopsis of our research, analysis and assessed challenges for NATO and contributing nations in not only in the traditional maritime warfare domains but also nascent spheres of space, cyber and gray zone conflict under the filter of how the next Battle of the Atlantic could unfold. As with previous editions, the reflections of our own team are enriched by the addition of contributions from some of our many partners, for which I am enormously grateful. If you identify a challenge that you think we could help with, please do not hesitate to get in touch! 🌐



Tom Guy is fortunate to have served in a wide variety of ships, from patrol craft to aircraft carriers, as well as enjoying some rewarding operational, staff and command roles ashore in the UK and abroad. Early appointments included Fishery Protection duties, the initial commission of the Type 23 Frigate HMS IRON DUKE and the role of Navigating Officer in the Hong Kong Squadron and the Type 22 Frigate HMS BATTLEAXE. As a Principal Warfare Officer (Underwater), he was Operations Officer of the Type 23 Frigate HMS MONTROSE and then Group Warfare Officer in the Carrier HMS INVINCIBLE. He commanded the Minehunter HMS SHOREHAM, bringing her out of build and then commanded the Type 23 Frigate HMS NORTHUMBERLAND, fresh out of refit as one of the most advanced ASW frigates in the world.

He has held several Operational Staff appointments, including service in the Headquarters of the Multi National Force Iraq (Baghdad) in 2005. He was Chief of Staff to the UK's Commander Amphibious Task Group, including the formation of the Response Force Task Group and its deployment on Op ELLAMY (Libya) in 2011. Other operational tours have included the Balkans and the Gulf, both ashore and afloat. Shore appointments have included the Strategy area in the MOD, a secondment to the Cabinet Office and Director of the Royal Naval Division of the Joint Services Command and Staff College. Latterly, he had the great privilege of serving as Captain Surface Ships in the Devonport Flotilla followed by the role of DACOS Force Generation in Navy Command Headquarters. In 2016-17 he was the Deputy UK Maritime Component Commander in Bahrain, working alongside the US Fifth Fleet Headquarters. He assumed the role of Deputy Director of the Combined Joint Operations from the Sea Centre of Excellence in September 2017.



The Combined Joint Operations from the Sea Centre of Excellence (CJOS COE) was established in May 2006. Representing 13 nations, CJOS is the only Centre of Excellence in the United States, and one of 25 NATO accredited Centres worldwide, representing a collective wealth of international experience, expertise, and best practices.

Independent of the NATO Command structure, CJOS COE draws on the knowledge and capabilities of sponsoring nations, United States Fleet Forces, and neighboring U.S. commands to promote “best practices” within the Alliance. CJOS COE also plays a key role in aiding NATO’s transformational goals, specifically those focused on maritime-based joint operations. We enjoy close cooperation with Allied Command Transformation (ACT), other NATO commands, maritime COEs, and national commands.

Comprised of 30 permanent staff and 20 U.S. Navy reservists, CJOS COE is highly flexible and responsive to its customers’ needs. The Centre cooperates, whenever possible with industry and academia to ensure a comprehensive approach to the development of concept and doctrine. ✪

REQUEST FOR SUPPORT

NATO Organizations should submit Request for Support (RfS) via the TRANSNET website for inclusion into the CJOS program of work. Individual nations or institutional stakeholders who wish to submit a request may contact CJOS COE directly and submit a request to the Directorate Coordinator. The CJOS Program of Work is on an annual cycle. Request for the 2020 Program of work should ideally be submitted by 15 August 2019. If the requests are approved by the Steering Committee, they will be included in the 2020 PoW. We also are available to take emergent request as an Out of Cycle RfS. If submitting an out of cycle request via TRANSNET, there must also be a email directly to CJOS COE for timely acceptance and work to begin on the project.

Our aim is to be a pre-eminent source of innovative military advice on combined joint operations from the sea. Our strength lies in our diverse staff spanning 13 different nations from multiple military branches. We continue to improve our products and services by collaborating with institutions, universities and other organizations that are leaders in their fields of expertise. We take full advantage of our location in Norfolk, VA and the numerous universities, and research facilities in our area. We also have a unique tie to the United States Navy’s Fleet Forces Command, the newly established SECOND Fleet, and upcoming Joint Force Command Norfolk.

If you are interested in receiving project support from our staff, simply submit a request to CJOS COE as described above. TRANSNET accounts can be requested from the TRANSNET website or you can visit our website at www.cjoscoe.org. RfS’ can be submitted to any staff member or the Directorate Coordinator at:

Email: USFF.CJOS.COE@NAVY.MIL or Phone: +01-757-836-2611

Hope to hear from you soon!





WHAT IS CJOS COE?

The Combined Joint Operations from the Sea Centre of Excellence is a pre-eminent, independent, multinational source of innovative advice and expertise on all aspects of maritime operations, charged with developing and promoting maritime concepts and doctrine in order for NATO, Sponsoring Nations, Allies and other international partners and organizations to optimize the efficient delivery of Maritime Effect.

CJOS COE MISSION

To provide a focus for the sponsoring nations and NATO to continuously improve the capability to conduct combined and joint operations from the sea. Our aim is to ensure that current and emerging maritime global security challenges can be successfully addressed across the full spectrum of maritime operations.

CJOS COE VISION

Through a managed network of sponsoring nations, academia and industry, CJOS COE will support the development of maritime concepts and doctrine in a combined and joint environment.



Source: Deniz Kuvvetleri Komutanlığı

Turkish Special Forces (SAT Commandos) fast roping on Turkish ship TCG Akar.

CJOS COE will accomplish its mission:

- Through development of innovative concepts and doctrine thus supporting transformation of NATO to meet the demands of future operations in the maritime domain.
- By identifying and resolving obstacles to a networked response to maritime security challenges.
- By applying the principles of Smart Defense and pooling subject matter experts.
- Through broad intellectual engagement thereby supporting the Connected Forces Initiative.



“This is how regional conflicts begin. This is a very dangerous game!”

Radoslaw Sikorski, former Polish Foreign Minister on Russia’s invasion of Ukraine

“RED STORM RISING”

**CAPT TODD BONNAR, RCN
CJOS COE**



Source: Russian MoD

An Akula class Russian submarine.

The Soviet Navy seizes Iceland in a covert surprise attack with an air raid disabling the NATO air base at Keflavík and a landing of amphibious forces from the Soviet merchant ship disguised as an American cargo ship. With the capture of Keflavík and the subsequent elimination of a critical node in the GIUK-SOSUS, the Soviet Navy surges its submarines into the Atlantic Ocean without being detected. Meanwhile, the Soviet Navy takes steps to protect its ballistic missile submarine fleet in coastal waters behind minefields and ASW assets, freeing up its attack submarines to engage and destroy NATO shipping. Thus, the Soviet Navy is able to act as

...nuclear threats, violations of airspace, suspicious undersea activity, subversion of the political integrity, and intense disinformation campaigns...

an offensive weapon contrary to pre-war NATO expectations, becoming a major strategic threat against resupply convoys coming from North America with both aircraft and submarines.

This advantage is put to immediate use as a NATO carrier battle group, led by USS Nimitz, USS Saratoga and the French carrier Foch, is successfully attacked by Soviet Badger and Backfire bombers. The Soviet Badgers fire modified

missiles as decoys whose radar transmitters make them appear to be Backfires on the predicted attack vector, far out from the main air fleet. The American carriers' interceptors are committed against the decoys, leaving an insufficient number of fighters from Foch and the ships' surface-to-air missiles to defend against the 'real' Backfires

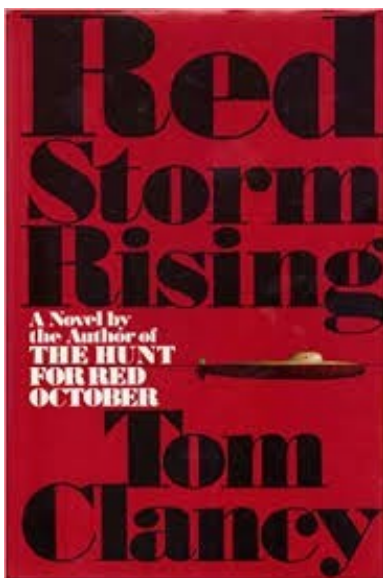


approaching from another direction.

Foch is sunk, the amphibious assault carrier USS Saipan explodes, taking 2,500 Marines with her, and the USS Nimitz damaged. NATO is seriously pressed with two American carriers forced to spend several weeks under repair, Nimitz at Southampton, England and Saratoga at Norfolk, Virginia. Meanwhile, the Soviets engage in an aerial battle over northern Norway, depleting the Royal Norwegian Air Force. They eventually capture the Andøya Rocket Range, bringing strategically key NATO radar and air stations in Scotland within range of sustained air attack.

In West Germany, the battle becomes a war of attrition that the Soviets expect to win through slow and sustained advances. The Soviets refuse to acknowledge NATO air superiority, and many West German towns are destroyed by artillery fire during the advance. As the Operational Manoeuvre Group forces start to deploy, NATO looks likely to lose all of Germany east of the Weser River.

When a brilliantly timed naval attack on Soviet bomber bases with submarine-launched cruise missiles, with a strike force that includes the USS Chicago, cripples the Soviet bomber force, the Soviets lose their most effective convoy and fleet-killing weapon. The U.S. Marines take this opportunity to stage an amphibious assault on Iceland backed by the NATO navies, retaking the island and closing the Atlantic to Soviet forces. A failed bomber raid on the NATO naval forces attacking Iceland (in which the remaining Soviet



naval cruise missile bomber fleets are nearly wiped out) essentially means victory in the Atlantic, opening the Soviet Union to direct attacks from carrier strike groups against its northern strategic areas and the free flow of convoys across the Atlantic.

The Soviet occupation force is soon forced to unconditionally



surrender, ending the threat of air raids on convoys. Simultaneously with the reversal in the Atlantic, the Supreme Allied Commander Europe, makes an audacious gamble in the face of a final Soviet offensive that pushes NATO ground forces to the breaking point, launching an unexpected flanking manoeuvre that places heavy NATO forces in the rear of the Soviet spearhead, cutting off their regular army units behind the Leine River and interdicting their supplies. HUMINT gained reveals the dire fuel situation in the Soviet Union to NATO, which changes bombing priorities to wipe out the Soviet Army's forward fuel depots, essentially immobilizing the Soviet formations. With the Soviet advance decisively halted, NATO catches its breath and the NATO counteroffensive begins.

Red Storm Rising

Tom Clancy, Putnam Publishing, 1986

Tom Clancy released his techno thriller Red Storm Rising, chronicling a Third World War set around the mid-1980s between NATO and Warsaw Pact forces. Skillfully weaving numerous traditional joint warfare domains with information operations and hybrid warfare, Clancy delivered a fictional depiction of a conventional arms regulated third world war. Although it was obvious fiction, it was released in 2015 through the UK National Archives that US President Ronald Reagan told then Prime Minister Margaret Thatcher that the book provided an excellent picture of Soviet intentions and went so far as having the unusual



suggestion that she should read the book in order to help her understand Soviet Cold War thinking. Flash forward almost 40 years in the future and it almost seems like NATO's leadership should be all putting in an order for this classic novel on Amazon Prime to try and predict Russia's next moves.

Russian threats including covert actions, such as nuclear threats, violations of airspace, suspicious undersea activity, subversion of the political integrity, and intense disinformation campaigns, increasingly challenge the security, stability, and prosperity of NATO and the U.S. These factors have forced NATO to improve the Alliance's readiness for rapid response and reassurance measures designed to deter further incursions by Russia and alleviate the concerns of the Alliance's member nations. Russia's increasingly assertive posturing in Europe has raised concerns about NATO's readiness to execute its principal mission of ensuring the collective security of its 29 member states. The invasion of Ukraine and the illegal annexation of Crimea in 2014 has gathered much attention in the world's public forums. Recent events in the Kerch Straits and the Sea of Azov highlight Russia's increased willingness to use its military as a strong arm of foreign policy.

Putin's strategy is to destroy the European governance structure, divide NATO, and build a new empire in the model of the former Soviet Union. Russia has demonstrated an extraordinary level of aggression, most boldly in its outright invasions of Georgia and Ukraine. Russia still occupies part of Georgia to this day. Putin has made it clear that he sees NATO expansion as a fundamental threat to Russian nationhood, and he is systematically challenging the NATO Alliance as well as the United States. Senior U.S. officials, including former National Security Advisor Stephen Hadley, have publicly admitted it was a mistake not to respond to these incursions in a more concrete manner.

This hesitation allowed the Kremlin to conclude that it could challenge Western interests with minimal response, so long as it didn't take the West on directly. Since then, Moscow has finely honed its skills in information warfare and hybrid warfare, relying on methods including pressure diplomacy, fake news, and foreign electoral intervention. Remaining under an Article 5

declaration threshold, it has taken parts of Georgia and Ukraine by force and knocked both the United States and key NATO members down several pegs geopolitically. Russia has engaged in hundreds of near-miss provocations of NATO forces in the air and at sea. Russia is far more effective and thus, more dangerous than ever before, constantly seeking and frequently finding ways to undermine NATO in order to achieve regional hegemony and global influence. Russia is not as powerful as it was in the Soviet era but, thanks to Putin's strategic thinking, it is now regularly punching above its weight in global affairs.

NATO has observed a systemic increase in Russian submarine activity in the Western Atlantic and in the Mediterranean. Analysts are certain that



Source: Reuters

Knyaz Vladimir, Russian Borei class submarine.

Russian submarines will utilize the increased out of area patrols being conducted to develop operational capability and training, conduct surveillance on U.S. and Alliance ships, and refine intelligence on NATO military installations. This is all in preparation for possible future operational assignments. In the event of war, the main mission of Russian attack submarines would be to do what the Soviets had planned to do in wartime and what Nazi Germany attempted to do in World War II: shut down the Atlantic and prevent the U.S. from flowing reinforcements into Europe.

To better posture itself to counter this growing threat as well as protect NATO values including rule of law and democratic ideals, NATO and its partner nations recently set out to deliver an adapted command structure that is fit-for-purpose,



meeting the requirement for effective command and control across all three NATO core tasks in face of current and future security challenges.

As tensions increased and Cold War with Russia grew decisively cooler in early 1950s, the United States Navy created the 2nd Fleet to signal to Moscow its commitment to NATO and its readiness to adhere to collective defence obligations on the Atlantic Rim, and especially Europe. With a shift in strategic focus from the Pentagon towards counter-terrorism efforts in the Middle East and Afghanistan and a pivot to the western Pacific with the emergence of Chinese naval power, the United States Navy disbanded the Second Fleet in 2011 and folded most of its personnel, warships and responsibilities into Fleet Forces Command. In addition to NATO's creation of JFCNF, in May 2018, the United States Navy announced the reactivation of Second Fleet to oversee naval operations along the east coast of the United States and across the Northern Atlantic. Bringing the Second Fleet back to life will free up Fleet Forces to focus on bigger-picture issues such as manning, training and equipping the entire fleet, and focus on high-end warfare in the Atlantic Ocean. Chief of Naval Operations Adm. John Richardson said that re-establishing the fleet is a "dynamic response to a dynamic environment".

This edition of Cutting the Bow Wave from Combined Joint Operations from the Sea Centre of Excellence will highlight its work completed in 2018 in support of NATO and the USN's restructuring and showcase 2019's Programme of Work in assisting NATO to adapt to changes in not only the traditional military maritime domain but also newer domains of space, cyber and information under the filter of this dynamic environment and preparations for what could be the next Battle of the Atlantic. 🌐

**CAPT Todd Bonnar is a
Branch Head at CJOS
COE in Norfolk, VA.
usff.cjos.coe@navy.mil**



MANUSCRIPTS WANTED

CJOS COE welcomes unsolicited manuscripts of 1500 words or less in length addressing the theme of "Delivery of Maritime Effect." Selected manuscripts will be featured in the next publication of *Cutting the Bow Wave!* For more information please visit or e-mail us at

www.CJOSCOE.org
usff.cjos.coe@navy.mil





The Russian Navy is not designed to match the US and combined NATO navies but, quite possibly, to limit and contest their ability to support Western defense plans and to approach Russia's periphery.

Stephen J. Flanagan

NATO'S RETURN TO THE NORTH ATLANTIC

Implications for the Defense of Northern Europe

**MR. STEPHEN J. FLANAGAN
RAND Corporation**



Source: MCI Justin Stumberg

Ships from 12 nations maneuver in Exercise BALTOPS 2018.

The 2016 National Security Strategy of the United States and the 2017 National Defense Strategy identified the emergence of long-term, strategic competition with China and Russia as the central challenge to US prosperity and security. Moreover, in the wake of Russia's illegal annexation of Crimea, efforts to destabilize Eastern Ukraine, and other acts of aggression, members of the NATO alliance have agreed that a partnership with Moscow will remain elusive, and have placed renewed emphasis on deterrence and collective defense, while remaining open to political dialogue with Russia.

This article reviews enduring US strategic interests in the North Atlantic and Northern Europe, and examines the evolution and likely future direction of US defense policy toward the wider region to advance those interests, with a focus on the maritime dimension. It offers an assessment of the key security challenges to those interests and explores

how the increased US military presence and operations are designed to address them. It goes on to discuss how US defense cooperation with other NATO allies and deepening partnerships with Finland and Sweden contribute to this, and the scope for further defense cooperation in the maritime domain.

US STRATEGIC INTERESTS IN THE NORTH ATLANTIC AND NORTHERN EUROPE

The strategic interests of the United States in the northern region include maintaining freedom of navigation and unfettered access to the North Atlantic Ocean as a lifeline between North America and its allies and partners throughout Europe. This is vital in view of the enormous two-way trade and investment ties, many common regional and global interests, as well as collective defense commitments to NATO members and deepening security



partnerships with Finland and Sweden. As an Arctic nation, the United States has broad and fundamental interests in the region that have been reaffirmed in a succession of national strategy documents issued by the last three administrations.

Only a few years ago, the North Atlantic and Northern Europe did not figure so prominently in Washington's strategic "watch list" of potential trouble spots. US foreign and security policy sought to keep Northern Europe a secure and supportive environment for advancing mutual interests with the eight Nordic and Baltic countries, while exploring the scope for cooperation with Russia there and in the Arctic. The Trump administration's strategy documents reaffirm those interests. In the face of the deterioration of the regional security environment, the administration, with bipartisan political support, has continued and expanded efforts begun in 2014 to bolster the defense of Europe. These include new military deployments, pre-positioned equipment, and increased exercises and training, all supported by the substantial increases in resources under the European Deterrence Initiative (EDI).

RUSSIA'S GROWING NAVAL STRIKE CAPABILITIES

The major challenges to maritime security in the North Atlantic and Northern Europe relate to growing Russian assertiveness and the deployment of new, high-end maritime surface and subsurface systems that have increased the threat to maritime lines of communication across the Atlantic, which are a central area of NATO's responsibility and would be essential for North American reinforcement of forces deployed in Europe in the event of a major crisis. Russian submarine operations also pose new risks for the operation of US, UK, and French strategic deterrent forces.

In July 2017, President Vladimir Putin approved a new Russian naval doctrine, which aims to counter the ambitions of the "United States and its allies to dominate the high seas, including the Arctic, and to press for overwhelming superiority of their naval forces". The doctrine calls for strengthening the navy's abilities to defend Russia's maritime approaches and littoral waters. It also calls for improving the Navy's capabilities to strike targets at long-range with conventional and nuclear weapons and project power in strategically

important regions of the world with an expanded surface and submarine forces. The doctrine emphasizes the role that the Navy can play in deterrence, particularly against US conventional global strike capabilities, by being able to sustain deployments at distances and threaten high-value targets.¹

Russia's capacity to realize these goals remains a subject of considerable debate and uncertainty among Western military experts. There have been major delays in ship construction due to management, design, and supply chain problems, and the shipbuilding industry has been further encumbered by international sanctions. Maintenance remains a major problem in sustaining naval operations. There is broad agreement, however, that Russia is modernizing all of its aging fleets at a steady pace, including through the deployment of new classes of surface vessels, conventional and nuclear attack submarines, and long-range, precision-strike Kalibr missiles capable of delivering conventional and nuclear weapons.² President Putin stated at the July 29, 2018 Navy Day in St. Petersburg that the fleet will receive 26 new ships in 2018, including six modern warships, four of which will be armed with Kalibr.³

The Northern Fleet remains Russia's most capable naval force, including the only operational aircraft carrier and nuclear-powered heavy cruiser. The various surface combatants and submarines deploy from the Kola Peninsula on missions around the world. Its priority missions are to provide strategic deterrence with its ballistic missile submarine fleet, and to defend the maritime approaches to northwest Russia, particularly the Kola "bastion".

The Baltic Fleet is focused on protecting sea lines of communication between Kaliningrad and St. Petersburg, and on countering NATO forces in the region. Russian submarine operations in the Baltic Sea remain a challenge for regional navies because the topography of the shallow, brackish waters and extensive maritime traffic complicate sonar tracking. The deployment of two Kalibr cruise missile-equipped vessels in 2016 allow the fleet to reach targets throughout Europe with long-range precision conventional and sub-strategic nuclear weapons. The Russian Navy is not designed to match the US and combined NATO navies but, quite possibly, to limit and contest their ability to support Western defense plans and to approach Russia's periphery. The deployment of Kalibr on a



number of existing surface ships and submarines, and plans for most of their replacements to also be outfitted with this capability, provides even the smallest vessels with significant offensive capability against naval and ground targets. These capabilities are integrated with layered defenses, including ground-based aviation, coastal cruise missile batteries, and mines.⁴

While its fleet is significantly smaller than the Soviet Navy during the Cold War, Russia has increased its patrols in the Baltic Sea, the North Atlantic, and the Arctic, and demonstrated a capability to sustain a naval presence in the Eastern Mediterranean during operations in Syria. In early September 2018, Russia conducted one of its largest naval exercises in several decades in the eastern Mediterranean off the coast of Syria, involving over 25 ships and submarines from the Northern, Baltic, and Black Sea fleets, as well as 25 aircraft including strategic bombers, fighters, and anti-submarine warfare planes.

According to the US Chief of Naval Operations, Russian submarine activity in the North Atlantic has risen to levels that have not been seen in 25 years.⁵ NATO commanders also report that Russian vessels have increased their jamming of Western naval vessels underway, as well as submarine activity around vital undersea cables in the North Atlantic that provide commercial and military communications and internet links, suggesting that the Russians are collecting intelligence that would allow them to disrupt these links in a crisis.⁶

THE US AND NATO RESPONSE

The increased US military posture in the northern region since 2014 is designed to maintain the credibility of US collective defense commitments to NATO members and to bolster the security of partners. The significant growth in resources for the European Deterrence Initiative supports deterrence of Russian aggression, improves the readiness of US forces in Europe, and enhances interoperability with allied and partner forces. Following the invasion of Ukraine, the Obama administration sought \$985 million in Fiscal Year (FY) 2015, and these resources have risen steadily since with bipartisan support in the US Congress, growing to \$3.7 billion in FY 2017 and \$6.5 billion in FY 2019. These funds have supported the increased rotational presence of US air, ground, and maritime



U.S., Allied, and Partner ships participating in BALTOPS 2014.

forces throughout Europe, improved infrastructure to allow for greater responsiveness across Europe, enhanced the pre-positioning of equipment, and intensified efforts to improve the capacity of newer NATO members and partners to join US forces in combined operations.

In terms of naval forces, the US has deployed four Aegis-Ballistic Missile Defense (BMD)-capable ships in Rota, Spain, which have played an important role in supporting US and NATO reassurance activities in the Baltic and Black Seas. The US has also increased its maritime operation tempo in the waters around Europe. The character of NATO and US-sponsored multilateral exercises, including the annual BALTOPS maritime-focused exercise in the Baltic Sea, has also shifted from simply developing interoperability to preparing allied and partner navies for potential high-end maritime conflict.

At the 2016 Warsaw Summit, NATO leaders highlighted their concerns about the evolving maritime challenges in the Baltic and Black Sea regions, the North Atlantic, and the Mediterranean in light of Russia's strengthened military posture, increase in its military activities, and deployment of new high-end capabilities. The leaders declared their commitment to being prepared to deter and defend against threats in the North Atlantic, including against sea lines of communication and maritime approaches to NATO territory, and agreed to take further steps to strengthen the allied maritime posture and comprehensive situational awareness. Following meetings in February and June 2018, NATO Defense Ministers finalized plans to establish the Joint Forces Command (JFC), Norfolk to

Source: MC3 Luis R. Chavez Jr



oversee protection of shipping lanes in the North Atlantic and anti-submarine warfare activities. The Allied Maritime Command in Northwood, UK will continue to have responsibility for day-to-day NATO maritime operations. In a related decision, ministers approved plans to establish the Joint Support and Enabling Command (JSEC) in Ulm, Germany as a strategic hub responsible for organizing and protecting movements of personnel and equipment within the Supreme Allied Commander Europe's area of responsibility, from Greenland to Africa, European territory, and the surrounding seas.

With respect to the Baltic Sea region, allied leaders noted the value of the deepening partnerships with Finland and Sweden on a broad range of issues, and the contributions of both governments to NATO-led operations. NATO committed to pursuing "regular political consultations, shared situational awareness, and joint exercises, in order to address these common challenges in a timely and effective manner".⁷ A number of these commitments are beginning to be realized through more concrete action

and operations, including the Swedish government's invitation to seven NATO countries to participate in its Aurora 17 military exercise, with the goal of testing the Host Nation Support treaty it signed with NATO in 2016, and the engagement of Finnish and Swedish armed forces in NATO's Trident Juncture 18 exercise.

In August 2018, the US Navy formally reactivated the 2nd Fleet in Norfolk, Virginia under its Fleet Forces Command with assigned ships, aircraft, and Marine landing forces for potential operations along the East Coast and in the North Atlantic. In making this move, the Navy's leadership noted that increased Russian submarine patrols and other activities are challenging US sea control and power projection, such that the United States now needs to maintain a large-scale ocean maneuver warfare unit in the Atlantic region.⁸ The 2nd Fleet's area of responsibility extends from the East Coast of the United States across the North Atlantic to the Arctic and the Barents Sea. Efforts are underway to rebuild the command into an operational warf-

ighting organization, and it will achieve full operational capability in a phased approach. About the same time, the British government announced plans to designate the North Atlantic as a new Joint Area of Operations and to undertake more regular deployments of Royal Navy ships and Air Force aircraft to the region.

At the Brussels Summit in July 2018, Allied leaders confirmed plans to establish Joint Forces Command, Norfolk. The US 2nd Fleet will serve as the framework command, which would transform into NATO command in the event of a conflict.

IMPLICATIONS FOR NORTHERN EUROPE AND FINLAND

Further work will be required to integrate these new initiatives in North Atlantic defense into NATO and national plans for defense of the Baltic and High North regions, which form the eastern

end of the North Atlantic maritime security zone. As the United States and other governments move to ensure their capacity to execute rein-

forcement of Europe from North America in a more contested maritime environment, allied and partner governments on the receiving end will need to continue to make efforts to strengthen their ability to support the reception, staging, onward movement, and integration of forces and equipment.

Developing the connectivity between NATO's JFC, Norfolk and JSEC, Ulm will be an important task for allied governments. However, it would also be valuable for Finland and Sweden, as key partner governments seeking to improve their capabilities to receive and provide security assistance, to also be involved in this process.

The governments of Finland and Sweden have been taking important steps to improve their operational defense cooperation with NATO countries, including through participation in exercises such as BALTOPS and Trident Juncture. Trident Juncture 18, the largest NATO exercise since 2015, with Norway and Iceland serving as host nations, will comprise a Live Exercise and a separate Computer-Assisted Command Post Exercise that will

Efforts are on the way rebuild the command into an operational warfighting organization...



train command and control procedures for NATO Response Force 2019 – a highly capable joint multinational force able to react in a very short time to the full range of security challenges from crisis management to collective defense. The exercise will take place in October and November primarily on Norwegian territory, with some limited activity in Finland and Sweden and the adjacent waters, including the Baltic Sea. The exercise will involve a collective defense (Article 5) scenario, emphasize training in Arctic terrain in freezing temperatures, and seek seamless integration of Finnish and Swedish forces. The Norwegian government sees the exercise as a stress test of its ability to receive Allied reinforcements efficiently, and of its “total defense” concept.⁹ Finland and Sweden might consider hosting subsequent NATO training events to deepen interoperability and effective coordination of defense efforts, which would enhance their capacity to receive military assistance in the event of major aggression, and strengthen deterrence in peacetime

There may also be opportunities to advance this trans-Atlantic maritime integration in the context of NORDEFCO, the Nordic-Baltic (NB8) cooperation, and the cooperation that Finland and Sweden are pursuing with the United States under their bilateral and trilateral Statements of Intent. The trilateral SOI calls for developing practical interoperability at the policy and the military levels, and expansion of mutual situational awareness in the Baltic Sea region. Nordic and Baltic governments would do well to look at opportunities to improve burden sharing in the Baltic maritime domain. The navies of the region have deep experience of operating in this challenging maritime environment, and recent exercises have helped advance trans-Atlantic defense integration by giving the US Navy and Marine Corps, as well as other NATO maritime forces, additional experience operating in the region.

The planned expansion of the US military presence in Norway from 300 to 700 personnel plus the pre-positioning of additional equipment stocks also create opportunities to deepen this cooperation in defense of the Barents and the land areas of the Arctic. Finland could explore options to support US and NATO amphibious operations in the North Cape and aerial surveillance of the northern maritime domain, as well as expanded maritime domain

awareness in the Baltic Sea. Such initiatives would allow the two countries to reach a new level of strategic interoperability and to cooperate more effectively in the event of a possible crisis in the Baltic Sea or Arctic regions. ❁

** This article was originally published in the Finnish Institute of International Affairs (FIIA) located at <https://www.fiaa.fi/en/publication/natos-return-to-the-north-atlantic>

1. Dmitry Gorenburg, ‘Russia’s New and Unrealistic Naval Doctrine’, War on the Rocks, July 26, 2017, <https://warontherocks.com/2017/07/russias-new-and-unrealistic-naval-doctrine/>. Last accessed 10 September, 2018.
2. U.S. Defense Intelligence Agency, Russia Military Power, 2017, pp. 66–70, <http://www.dia.mil/Portals/27/Documents/News/Military%20Power%20Publications/Russia%20Military%20Power%20Report%202017.pdf?ver=2017-06-28-144235-937>. Last accessed 1 September, 2018.
3. Jason Lemon, ‘Russia Rapidly Expanding Navy With 26 New Ships by End of 2018, Putin Says’, Newsweek, July 29, 2018, <https://www.newsweek.com/russia-rapidly-expanding-navy-26-new-ships-end-2018-putin-says-1047261>. Last accessed 18 September, 2018.
4. Michael Kofman and Jeffrey Edmonds, ‘Why the Russian Navy Is a More Capable Adversary Than It Appears’, The National Interest, August 22, 2017, <https://nationalinterest.org/feature/why-the-russian-navy-more-capable-adversary-it-appears-22009>. Last accessed 15 September, 2018.
5. Geoff Ziezulewicz, ‘Navy’s top officer warns of increased Russian and Chinese activity in the Atlantic Ocean’, Navy Times, August 10, 2018, <https://www.navytimes.com/news/your-navy/2018/08/10/navys-top-officer-warns-of-increased-russian-and-chinese-activity-in-the-atlantic-ocean>. Last accessed 15 September, 2018.
6. Michael Birnbaum, ‘Russian submarines are prowling around vital undersea cables. It’s making NATO nervous’, The Washington Post, December 22, 2017, https://www.washingtonpost.com/world/europe/russian-submarines-are-prowling-around-vital-undersea-cables-its-making-nato-nervous/2017/12/22/d4c1f3da-e5d0-11e7-927a-e72eac1e73b6_story.html?utm_term=.b9a10b965cb1. Last accessed 10 September, 2018.
7. NATO, ‘Warsaw Summit Communiqué’, Warsaw 8–9 July 2016, Press Release (2016) 100, paras 23, 48, https://www.nato.int/cps/en/natohq/official_texts_133169.htm. Last accessed 24 August, 2018.
8. Wesley Morgan, ‘Navy re-establishes Atlantic fleet to check Russia’, Politico, August 24, 2018, <https://www.politico.com/story/2018/08/24/navy-atlantic-fleet-russia-751660>. Last accessed 15 September, 2018.
9. The exercise will involve 40,000 participants, 130 aircraft and 70 vessels from more than 30 nations. NATO Press Office, ‘Press briefing on Exercise Trident Juncture 2018 with Admiral James G. Foggo III, and Vice Admiral Ketil Olsen’, June 11, 2018, https://www.nato.int/cps/en/natohq/opinions_155888.htm. Last accessed 15 September, 2018.

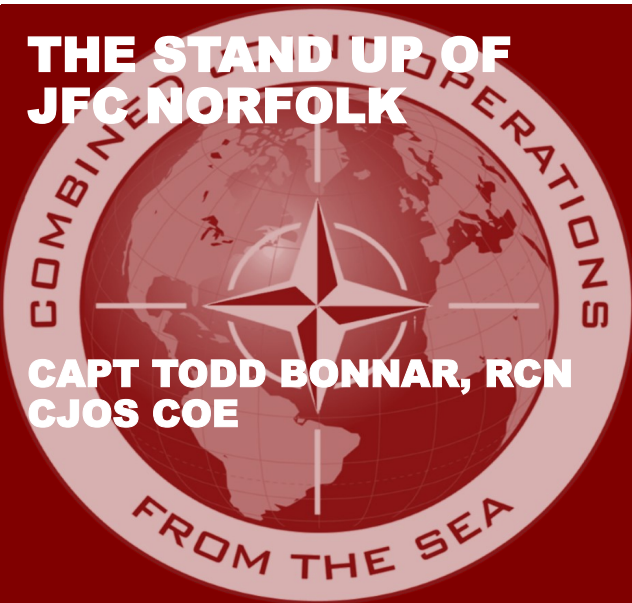
Mr. Stephen J. Flanagan is a Senior Political Scientist with RAND Corporation.





“These headquarters will be essential for Alliance reinforcements across Atlantic and across Europe.”

***Jens Stoltenberg
NATO Secretary General***



Source: Open Source

NATO 2016 Exercise Dynamic Mongoose.

Despite the careful cultivation of bilateral and multilateral cooperative agreements between NATO’s Arctic nations, NATO Partner nations and the Russian Federation, significant changes in the European geo-political security situation sparked by the illegal annexation of the Crimea in 2014 by Russian special forces and subsequent hybrid warfare activity have plunged relations in a freeze. It appears to many analysts in the West that Russian leadership has set about a strategy that aims to operate just below the threshold of an Article 5 declaration in efforts to marginalize

American influence in Europe, erode NATO cohesion and re-establish a multi-polar world order. This has forced a critical re-examination of NATO’s maritime forces and a vulnerable Atlantic Flank as part of NATO’s overall readiness posture.

In response, at the Wales Summit of 2014, NATO leadership set about to address these resurgent challenges on its borders with the most significant reinforcement of NATO’s collective defence since the end of the Cold War. As described

The Plan strengthens NATO’s collective defence. ...30 mechanized battalions, 30 kinetic air squadrons and 30 naval combat vessels, able to be used within 30 days.

in the summit statement, the NATO Readiness Plan is a “coherent and comprehensive package of



necessary measures to respond to the changes in the security environment on NATO's borders and further afield that are of concern to Allies. It responds to the challenges posed by Russia and their strategic implications. It also responds to the risks and threats emanating from our southern neighbourhood, the Middle East and North Africa. The Plan strengthens NATO's collective defence. It also strengthens our crisis management capability.

notice, and <....> able to deploy swiftly through Europe." The goal is to ensure that, by 2020, NATO has 30 mechanized battalions, 30 kinetic air squadrons and 30 naval combat vessels, able to be used within 30 days. In addition, NATO's defense ministers approved the creation of a Joint Force Command in Norfolk, Virginia, that will ensure alliance maritime security in the Atlantic. As part of the follow on foundational work for the Bi-



Source: Open Source

The vast North Atlantic water space.

The Plan will contribute to ensuring that NATO remains a strong, ready, robust, and responsive Alliance capable of meeting current and future challenges from wherever they may arise." The Readiness Action Plan will provide the Alliance with a broad range of options to be able to respond to any threats from wherever they arise to protect Alliance territory, population, airspace and sea lines of communication.

Building on this, NATO defense ministers endorsed a new US readiness initiative, at the 2018 NATO Summit in Brussels. Known as the "Four 30s", its aim is to cultivate a "culture of readiness" to "provide forces <....> ready to fight at short

Strategic HQs regarding this new joint force command, in April of 2018 the Combined Joint Operations from the Sea Centre of Excellence released the original concept of operations for NATO's new maritime focused Joint Force Command tasked with securing NATO's vulnerable Atlantic Flank.

This ground breaking paper captured and aligned ongoing military and political direction to conceptually synchronize maritime efforts and effects to maintain the critical linkages between Europe and North America that ensure NATO's sustained combat power and extended collective defense. As CJOS COE envisioned, the goal of this



new command is to bring a comprehensive and persistent warning and situational awareness capability to the global commons that will ensure freedom of the high sea and coastal regions. If the deterrence effects of these efforts should fail, this Norfolk, VA based Joint Force Command would exercise command and control of assigned forces to project power from the sea in order to ensure the reinforcement and re-supply of the European theatre of operations.

Joint Force Command Norfolk (JFCNF) is a multi-national joint operational level command. Led by a dual-hatted US Navy three-star admiral, this hybrid command, of both embedded NATO

Command Structure and Force Structure elements, will be responsible for the North Atlantic

and the High North. This lean and efficient hybrid organization will provide extremely agile responsiveness to respond to burgeoning threats to the Alliance. While contributing to NATO awareness, readiness and responsiveness, this scalable command will be prepared to receive tiered augmentation and conduct an early transition to higher intensity levels in the event that NATO initiates Crisis Response Measures or major combat operations.

JFC Norfolk's initial commander is Vice Admiral "Woody" Lewis, USN, dual hatted as Commander US Navy's Second Fleet. This symbiotic relationship with Second Fleet will drive exactly how JFC Norfolk will be developed and its functionality as it must be synchronous and supportive of its primary combat forces. In describing his vision for Second Fleet, he indicated it must be a small and flexible force heavy on intelligence assets and "ready to fight across multiple domains" from the Arctic to the Mediterranean. He pulls no punches in stating the reason for Second Fleet's rise from the ashes – *"Russia. This is with an eye toward Russia. Let's be frank, the Russian undersea threat is real, and they are competent."* The comments provide the most

definitive glimpse yet of the new Atlantic-focused USN and NATO commands, an area neglected by NATO defence planners since the end of the Cold War, but which has seen a rise in Russian submarine and other naval activity in recent years.

As relations with the Russian Federation continue to cool and re-capitalization of Russia's Northern Fleet continues to heat up, the likelihood of Russian submarines and the existential threat those operations in the Western Atlantic represents, increases to a virtual certainty. Russian submarines are conducting surveillance on U.S. and Allied ships in the region, and collect intelligence on military installations such

as Norfolk and have been involved in cruise missile strike operations deep into Syria.

With its follow on analysis, the Theory of the Fight due to be released in Spring 2019, CJOS COE will continue to be at the forefront of JFC Norfolk's road to Initial Operating Capability, aggressively planned for December 2019. As JFC Norfolk progresses towards this capability, CJOS COE as a vital partner, is helping ensure that NATO will be ready to respond effectively to any threat, no matter what form it might take. ❁

Led by a dual-hatted US Navy three-star admiral, this hybrid command, of both embedded NATO Command Structure and Force Structure elements, will be responsible for the North Atlantic and the High North.

CAPT Todd Bonnar is a Branch Head at CJOS COE in Norfolk, VA. usff.cjos.coe@navy.mil





“In this pact we hope to create a shield against aggression and the fear of aggression...”

President Truman in signing the North Atlantic Treaty, 1949

COMMANDING THE ALLIANCE AT SEA: A REFLECTION ON THE HISTORY OF NATO MARITIME C2

**MR. JAMES HENRY BERGERON
MARCOS POLAD**



Source: PH2 Vick, USN

USS Coral Sea (CV-43) entering Pearl Harbor in 1981.

NATO has set its course on a substantial institutional reform. Termed ‘NATO Command Structure (NCS) Adaptation’, its goal is to make the NCS ‘fit for purpose’ in an era of contemporary challenges unforeseen when the Alliance’s command and control (C2) architecture was so substantially reduced over the past 20 years. The maritime dimension of NATO is playing a leading part in this reform drama, with commitments to substantially strengthen the Allied Maritime Command (MARCOM) in Northwood and establish a new Joint Force Command Norfolk (JFC NF) in the US.¹

These innovations were motivated by the collapse in NATO-Russia relations in 2014 and the rise of a more formidable Russian Federation Navy (RFN) that has returned as a blue water force, projecting striking power into Syria and establishing a forward posture in all of NATO’s

strategic seas. This new environment puts maritime capabilities and C2 at the top of NATO’s reform agenda.

These changes in Alliance maritime architecture beg several questions, some with resonances going back to the founding days of NATO. It is therefore a good moment to review NATO’s experience of maritime C2 since its founding, to better understand how we arrived at our present condition, of the many debates along the way, and perhaps how to avoid some mistakes of the past while leveraging to our benefit the wisdom of 70 years of NATO naval leaders.²

St. George and the Dragonet: Anglo-American rivalry over maritime command in NATO

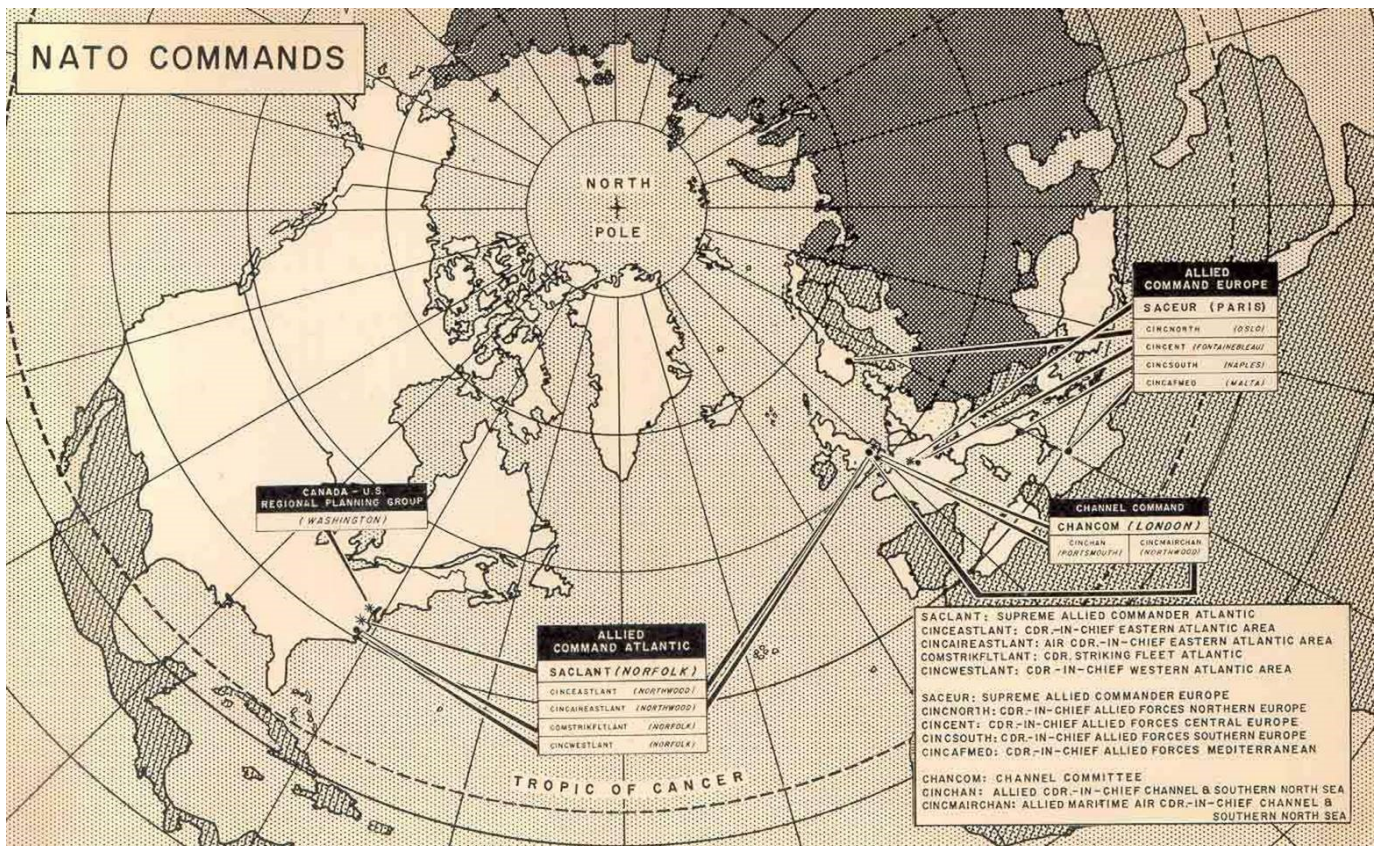
NATO’s Command Structure (NCS) has been fluid over time, fundamentally driven by changing assumptions about the nature of conflict, changes in national strategic orientation and



ultimately the willingness of nations to pay the costs of leadership. By contrast, the basic geo-strategic problem for NATO collective defence is relatively simple and indeed has not changed all that much. When the NCS was first set up, Allied Command Europe was divided into a land-focused Central Region across the German Plain (AFCENT) and maritime-focused Northern (AFNORTH) and Southern (AFSOUTH) Regions, with a counterpart Supreme Allied Command

intended to appoint US Navy Admiral William Fechteler, who was the newly-created US Commander in Chief Atlantic (CINCLANT), to the new NATO post of Supreme Allied Commander Atlantic. This drew fierce opposition from Churchill, first as Leader of the Opposition⁵ and later as Prime Minister⁶ as an insult to the Royal Navy.

The compromise eventually reached by London and Washington influences maritime NATO command and control architecture to this



The NATO Command Structure in 1954.

Atlantic (SACLANT) focused on the transatlantic re-supply and sea lines of communication.

This original stand-up of the NCS between 1950-1953 precipitated the most contentious argument the UK and US have had over NATO command relations and it was about the maritime, as befitting the two great naval powers of the day.³ The Conservative Opposition under Sir Winston Churchill was attempting a no-confidence vote against the Attlee Labour government over the weakness of national defence.⁴ On 15 February 1951, the papers reported that Washington had

day. Giving way on a US SACLANT, London argued for establishment of a Supreme Commander Mediterranean (SACMED) and a Channel Command (CINCHAN) that would be answerable to the Standing Group of the Military Committee, like SACEUR and SACLANT.⁷ In addition, British interests and expertise in the North Atlantic was recognised in the establishment of CINCEASTLANT in Northwood, Middlesex in 1953 as one of the three subordinate commands of SACLANT.⁸ The US Navy would maintain control over its major forces during exercises in the



EASTLANT area via Allied Striking Fleet Atlantic (STRIKFLTLANT), the NATO hat of US Second Fleet, both CINCEASTLANT and STRIKFLTLANT being subordinate commanders of SACLANT and with overlapping mission areas in the GIUK Gap.

The SACMED issue proved more contentious and it took two years to reach a complex solution. Allied Forces Mediterranean (AFMED) was established in Malta in March 1953 under Admiral of the Fleet Earl Mountbatten of Burma as CINCAFMED, an equal of CINCSOUTH in Naples. Further, the US declined to place its Sixth Fleet under the command of AFMED. To resolve the matter, Allied Naval Striking and Support Forces Southern Europe (STRIKFORSOUTH) was created as the NATO headquarters for the US Sixth Fleet. That provided an unbroken US chain of command within NATO over Sixth Fleet Carrier forces.

These first major negotiations over maritime C2 in NATO set some powerful and recurrent patterns. As the two major naval powers in the Alliance at that time, London and Washington vied for Allied maritime command leadership. The debate was framed around areas of national security or economic interest to the UK, but also in play was culture, history and prestige. For the US, the drivers of policy were the need for a wide span of control and flexibility given that NATO was only one of many global challenges for the new Superpower, and to guarantee command by SACEUR of the Sixth Fleet striking force to maintain an unbroken US chain of command on nuclear weapons.⁹ Domestic politics also played a key role.

The 1960's: Walk away Renée

A seismic shift in the balance of maritime power and influence in NATO came as both France and the United Kingdom substantially scaled back their Alliance roles, although for very different reasons. For France, the motivation was primarily political. In 1959 President De Gaulle withdrew French naval forces from NATO's AFMED command. This was followed in 1963 with the removal of naval forces from SACLANT and in 1966 with the removal of land forces and the departure of France from the NATO Integrated

Military Structure. Although these changes had a large impact on NATO headquarters' locations and assigned land forces, triggering a major reform of AFCENT, the institutional maritime consequences were small as France had never held a major maritime command in NATO.

Much larger changes to the NCS and Alliance naval posture was triggered by the UK's 'East of Suez' strategy and its subsequent abandonment. Faced with major challenges to its imperial and commonwealth interests in the mid-1950s, the British MoD embraced its 'expeditionary moment' in the 1957 Sandys Defence Review and the plan for a Joint Services Seaborne Force (JSSF) based on enhanced amphibious and carrier striking power.¹⁰ A series of crises in Oman, Kuwait, Tanganyika, Zanzibar and Aden drew Royal Navy carriers and amphibious forces away from the NATO area, leaving NATO maritime strike support largely to the US Navy carriers.¹¹

The new Labour government of Harold Wilson inherited the costs of a decade of distant operations while facing an economic and fiscal crisis at home. The resulting 1967 Statement on the Defence Estimates called for the recall of British forces 'East of Suez'.¹² Also planned was a drawdown of forces in Malta including the withdrawal of almost all naval forces.¹³ Although independent from 1964, Malta's defence was still guaranteed by the UK. Angered by the economic impact of the reductions, Valetta denounced the UK-Malta Mutual Defence Agreement. AFMED was disestablished in June 1967 but remained in Malta as NAVSOUTH until 1971 when that HQ shifted to Naples.

The French and British experiences of the 1960's illustrate the leading role that changes in national policy, often under domestic economic pressure, have in determining the NATO command structure much of the time. As a result of the French withdrawal and the British reductions, the US Navy became the premier naval actor in maritime NATO in the Mediterranean by the late 1960s. C2 was rationalised with both STRIKFORSOUTH and NAVSOUTH (after 1967) reporting to CINCSOUTH. There was also an additional nuclear dimension to the American predominance in the 1960's. US SSBNs began patrolling the Atlantic by 1960 and the Mediterra-



nean by 1963. The mooted Multinational Force of Polaris missile-firing converted merchant ships under NATO command was never realised, but three US Polaris Submarines were committed to SACEUR for planning and targeting in 1963.¹⁴

One enduring innovation of the 1960's was the establishment of Standing Naval Forces in NATO. Under the tutelage of Rear Admiral Richard Colbert USN, on the SACLANT Staff, Standing Naval Force Atlantic (STANAVFORLANT) was established in December 1967 and formed up in January 1968 in Weymouth.¹⁵ Commanded by CINCEASTLANT under SACLANT, the value of STANAVFORLANT in keeping EASTLANT/NAVORTH an operational headquarters in a NATO era focused on readiness and training cannot be over-estimated.

Winds of change: From CONMAROPS to the end of the Cold War

NATO maritime headquarters structures remained largely stable in the 1970's and 1980's. One institutional development of importance was the stand up of HQ United Kingdom Air Forces (UK AIR) as a fourth Major NATO Command (MNC) under SACEUR in 1974. Another subtle change of note was the merger in 1983 of the US Commander in Chief US Naval Forces Europe (USNAVEUR) and CINCSOUTH in a single four-star Admiral, which had been separate posts since 1952.¹⁶

But if maritime C2 was stable, maritime planning and activity were remarkably robust. The Soviet Navy was growing as a nuclear-powered blue water force. In the May 1977 London NATO Summit, Defence Ministers were tasked to establish a Long-Term Defence Programme (LTDP) to meet the challenges of the 1980's. The 1978 Summit approved the LTDP and in particular a project to "enhance NATO's maritime posture."¹⁷ Out of that work came an Alliance Maritime Concept of Operations – CONMAROPS. It served as the Alliance's Maritime Strategy from 1981 to 2001. CONMAROPS was a powerful statement of the role of Alliance naval forces in deterrence and of their vital ability to deploy forward. It was very much in the spirit of the US Secretary of the Navy John Lehman's Maritime Strategy that would follow shortly after, and in fact both were worked

by the same team of US naval officers.¹⁸

The 1980s was perhaps the premiere decade of Alliance deterrent posture at sea, as the US Navy and Royal Navy pursued a strategy of pushing Soviet strategic forces in the Norwegian Sea and beyond onto the defensive.¹⁹ VADM James A Lyons and Henry Mustin USN reoriented the US Second Fleet from its orientation on Caribbean operations and training of US Sixth Fleet assets towards their forward STRIKFLTANT role in the North Atlantic.²⁰ For its part, the Federal German Navy adopted CONMAROPS into a robust forward strategy for the Eastern Baltic.²¹

CONMAROPS and the US Maritime Strategy, backed by a series of major 'High North' exercises beginning with Exercise OCEAN VENTURE 81, was a bold, navalist approach to collective defence. It proved an important factor in convincing the Kremlin that the costs of competition were too high. It was also the heyday of CINCEASTLANT/NAVORTH activity. Peter Swartz notes that some in NATO were not particularly focused on this maritime drama.²² SHAPE – heavily army-oriented, then as now - was far more interested in the role of naval forces in protecting sea lines of communication from North America to ensure troops and supplies for its Air-Land Battle strategy.

With the fall of the Berlin Wall, the stage was set for a major reform of NATO. This came in 1994 when both CINCHAN and UK AIR were disestablished and a new UK Air Force-led Commander Allied Forces Northwest Europe (AFNORTHWEST) was created, subordinate to SACEUR. But in the same year that AFNORTHWEST stood up, NATO moved the goalposts again. At the 1994 Berlin Summit a sweeping reform programme was agreed. In 1997 the North Atlantic Council (NAC) approved a new NCS model with only two joint-level, Regional Commands (RC). AFNORTH, AFNORTHWEST and AFCENT were all disestablished, replaced in 2000 by a new RC NORTH in Brunssum, in the Netherlands.²³ NAVORTH now reported to RC NORTH. In addition, the 1997 NCS reform approved the creation of a series of Joint Sub-Regional Headquarters, which were essentially previous land headquarters. STRIKFORSOUTH was dropped from the NCS.



The 1997 NCS reforms were also to be short-lived. But in 1999, a more enduring legacy was created by the agreement to establish a new NATO Force Structure. The slimmed down NCS required that tactical command and control be provided by components provided by nations. The 1999 NATO Force Structure (NFS) reforms created NATO-oriented multinational headquarters with requirements for standardisation, multinationality and most important, the ability to deploy rapidly. Three High Readiness Force (Maritime) HQs were offered by the UK, Italy and Spain. France later stood up the fourth HRF(M)HQ.

STRIKFORSOUTH, however was absent from the new regime: the US did not offer it or US Fifth Corps as NFS entities. As a result, STRIK-

FORSOUTH entered a shadowy existence, designated by CINCSOUTH as his 'Regional Reaction Force', but its NFS status was not recognised by SHAPE. Whether intended or not, it was the first step in a turn away from institutional involvement in maritime NATO by the US.

Don't leave me this way: the demise of SACLANT and the 2003 NCS reforms

That turn away gathered momentum when changes in US military architecture - that had been developing for some time - came home to roost. Up until 1985 the US Atlantic Fleet was institutionalised in the US Atlantic Command (USLANTCOM) commanded by Commander in Chief, US Atlantic Fleet (CINCLANTFLT), who after 1951 was also SACLANT. Desiring to manage the span of control challenge by separating the unified commander from the component commander, US SECDEF John Lehman directed the ending of this triple-hatting arrangement, with a separate four-star Admiral commanding as CINCLANTFLT but with SACLANT remaining the dual-hat of CINCLANT.²⁴

In 1986, The Goldwater-Nichols Act – designed to streamline the US DOD and fix inter-

service rivalry – set the stage for the US Navy Atlantic architecture's long Post-Cold War journey into Jointness. This was achieved with the transformation in 1993 of USLANTCOM into a joint US Atlantic Command (USACOM) with land and air components. The new CINCUSACOM combatant commander was not required to be an Admiral. In 1999 USACOM was further developed and renamed US Joint Forces Command, (JFCOM) which would own all deploying forces, until transferred to Combatant Commanders, and be focused on force provision and transformation of US military capabilities.

CINCLANTFLT was also declining as warfighting commander. Their Special Forces were transferred to US Special Operations Command in 1988, their Ballistic Missile

Submarines to the new US Strategic Command in 1992 and responsibility for Latin American waters went to US Southern Command in 1995. In 2001, CINCLANTFLT was brought into the JFCOM construct as Commander Fleet Forces Command (COMFFC) focused on force provision, training, certification and maintenance.

This major reorganisation of the US military and the effective ending of the CINCLANT and CINCLANTFLT warfighting role (the latter title would be removed in 2006) put SACLANT in the crosshairs, since the roles of JFCOM and SACLANT were now radically different. At the Prague NATO Summit in 2002 the US argued for the ending of the SACLANT function and the creation of a new NATO headquarters focused on Transformation, closely linked to JFCOM.

In response, the Allied Defence Ministers agreed to a revamped NCS in 2003. The new NCS created Allied Command Operations (ACO) as the sole operational Strategic Commander. SACLANT would be disestablished and Allied Command Transformation (ACT) would be created as the double-hat of USJFCOM. All the Joint Sub-Regional Headquarters created in 1997 were disestablished except Lisbon, which was made a

The Goldwater-Nichols Act ... set the stage for the US Navy Atlantic architecture's long Post-Cold War journey into Jointness.



deployable JHQ without components for maritime-heavy operations. STRIKFLTLANT was disestablished in 2005 and the US Second Fleet itself was ultimately wound down on 30 September 2011. Regional designations for the NCS headquarters were dropped and the NATO Response Force (NRF) was created as the centrepiece of an Alliance aimed at expeditionary operations South and East.

Operational C2 of Alliance sea power largely shifted to the Force Structure. Under the new model of the NRF, the two JFCs in Naples and Brunssum would be supported not by the NCS component commands but by a rotation of the High Readiness Force headquarters (HRF HQs) created back in 1999. Joining them was STRIK-FORSOUTH under its new name, Allied Naval Striking and Support Forces NATO (STRIKFORNATO), established in the NFS as the only HRF(M)HQ expected to command at NATO Expanded Task Force (ETF) level - meaning multiple carrier or amphibious strike groups. An anomaly of the 2003 reforms was that JHQ Lisbon and STRIKFORNATO were tasked with virtually identical roles. Both were commanded by US COMSIXTHFLT and both called upon the same Allied Command Platform, USS Mount Whitney LCC-20.

The new model worked well enough for a NATO that saw no peer competitor and was preparing for localised operations where – thanks to the Revolution in Military Affairs - air and maritime supremacy were assured. But these dynamics left MC Northwood and MC Naples partly out in the cold, as they were not expected to act as Maritime Component Commanders (MCC) for the NRF. The MCs focused on command of the Standing Naval Forces and MC Naples commanded the post-9/11 Operation ACTIVE ENDEAVOUR.

Twilight: The Post-Cold War Era Ends

The later years of the ‘noughties’ were fraught times. The stabilisation and reconstruction mission in Afghanistan had escalated into a large warfighting operation. 2007 saw the first major Russian cyber-attack on Estonia and 2008 witnessed the Georgia-Russia conflict. In April 2009, France provided a major boost to the Alliance by returning to the NATO Integrated Military Structure. General Stéphane Abrial, French Air

Force, was appointed Supreme Allied Commander Transformation. Piracy had spiked off Somalia and the world was reeling from the banking collapse of 2008, with nations looking to save money.

The Lisbon Summit of 2010 thus stood at a remarkable inflection point; with an emerging Russian threat, largely occluded by the fighting in Afghanistan, and with an Alliance under economic pressure. The Arab Spring was only a few months away, as was NATO’s major involvement in Libya. The new Strategic Concept was a partial return to collective defence thinking, while also inviting cooperation and dialogue. In support of the Strategic Concept, an Alliance Maritime Strategy was adopted shortly after the Summit, which defined Alliance core roles and capabilities in terms of collective defence and deterrence, crisis management, cooperative security and maritime security.²⁵

But the Lisbon NCS reform was in tension with the new tone of the Strategic Concept - not to mention the challenges just around the corner – by reducing the Command Structure still further. In June 2011, the Defence Ministers agreed that JHQ Lisbon, AC Izmir, MC Naples and both Land Commands were to be abolished. This left two JFCs and three Single-Service Commands in the NCS. STRIKFORNATO was moved to Lisbon, seamlessly filling the gap left by JHQ Lisbon. All of this was happening just as the Post-Cold War Era - its optimism for a Europe whole, free and at peace and an expanding sphere of stability around the Euro-Atlantic area - was ending.

Wrecking Ball: Putin’s Russia and NATO’s new maritime moment

The motivation for the 2011 reforms was entirely economic, yet there were some remarkably positive, albeit unintended, operational effects. Creating Single Service Commands established service champions within the Alliance that had never existed before. It also fostered a 360° domain awareness responsibility, overcoming the command and control seams that were so common throughout the history of the NCS.

As a result, when the Russian Federation Navy returned to a blue water posture in autumn 2015, MARCOM was well placed to understand it and respond. Working closely with US Sixth Fleet and European Fleet Commanders, MARCOM



employed its Standing Naval Forces to track and monitor the RFN deployments. Further, MARCOM emerged as the natural coordinator of Allied units remaining under national C2 but joined in a common monitoring and deterrence effort. The challenge for MARCOM was in being a headquarters designed for the Post-Cold War Era that now found itself stretching to take on a theatre maritime C2 role that had been drawn down in NATO over the previous decades.

The ramping up of Russian maritime posture since its aggression in Ukraine has been substantial. Numerous naval assets have transferred from the Northern Fleet to the Mediterranean and the Black Sea, including six modern, Kalibr-equipped Kilo SSKs as part of the Black Sea Fleet. The Kuznetsov Battle Group deployment to the Mediterranean in 2016 was not impressive as a Carrier operation but signalled to regional states that Russia was back as a major player. Reports of Oscar SSGNs in the Mediterranean during the Kuznetsov deployment and at a time when US and French carriers were in the region, appeared to be a flexing of Russian naval muscle.²⁶ Syria has been used as a training range for cruise missile launches by RFN frigates, submarines and patrol vessels. Russian harassment of Allied naval and air units has become commonplace.

NATO began to move its C2 structure back towards a collective defence focus at its Summit in Wales in 2014. This was initially focused, however, on the NATO Force Structure and on ground forces. But in 2016, the NATO focus shifted towards the maritime. The Warsaw Summit directed the Alliance to conduct a functional review of the NCS and to strengthen its maritime posture and comprehensive situational awareness.²⁷ The Warsaw Communiqué had a maritime flavour that had not been seen since the 1980s. In parallel, think-tank researchers began calls for NATO to pay greater attention to the Atlantic and to improve its maritime capabilities and training to counter Russian actions at sea.²⁸ Throughout 2017, NATO planners and diplomats developed a design for an Adapted NCS.

The key maritime elements of the Adapted NCS are the expansion of MARCOM into NATO's Theatre Maritime Component and the establishment of a new command to protect sea lines of

communication between North America and Europe, agreed by the Defence Ministers in November 2017.²⁹ At the 2018 Munich Security Conference, the US indicated that it had offered to host the new 'Atlantic' command as a NATO Force Structure Headquarters, subsequently named Joint Force Command Norfolk.³⁰

US Second Fleet was re-established on 4 May 2018. Joint Force Command Norfolk is in the process of standing up as personnel arrive. Both are commanded by VADM Andrew 'Woody' Lewis, USN. Staffs are engaged in work on the roles of JFC NF from peacetime to conflict. VADM Lewis has referred to the challenge as making JFC NF 'fit for its time, and fit for its purpose'.

This brings the long story of NATO maritime C2 full circle. As NATO implements its Adapted NATO Command Structure, its history of maritime C2 provides salutary lessons: NCS change has been a constant in Alliance history, it is in fact the periods of institutional stability that are the exception. Such changes have, primarily, been driven by internal national and Service dynamics, often economic in nature, twinned with abiding national strategic interests and, of course, a general desire to make Alliance C2 relevant and effective.

The resulting compromises between these objectives have often created politically acceptable but operationally obtuse command arrangements. In the early Cold War, the C2 arrangements for the Mediterranean worked well as there was a functional separation between AFMED and STRIK-FORSOUTH. In the Eastern Atlantic and Norwegian Sea, the command boundaries required careful management but worked effectively as no hard lines were drawn in the Atlantic. The division once again was a coordinated one between US striking power under STRIKFLTLANT and European naval power under EASTLANT. It was a 'supported-supporting' relationship.

There is also substantial precedent that national willingness to commit forces as the price of leadership often plays a part in such negotiations. Finally, throughout the history of the NCS there has been a tension between navalist and land-centric conceptions of the role of sea power for the defence of Europe, pitting the proponents of forward defence against those demanding convoys and SLOC protection for troops and kit. As in the



1970's, it is critical that the navies and NATO correctly determine the nature of the conflict they are attempting to deter, or if necessary, to fight.

The return of the US Navy to a stronger vocation within the NATO institutional structure is to be warmly welcomed. It remains the case that USN support is vital to defending the Atlantic in conflict and is, oftentimes, the lynchpin of Allied solidarity and effectiveness in all of NATO's strategic seas. But short of conflict, NATO also needs to allow the US Navy to meet its global operational responsibilities where it is currently stretched thin. Working together, the Alliance ought to be able to reinforce its maritime posture, secure the Atlantic in crisis and conflict through a robust and Atlantic area-focused Joint Force Command, while enhancing the 360° operational maritime hub at MARCOM that was the true added value of the 2011 NCS reforms. 🌐

1. See Press Release at https://www.nato.int/cps/ic/natohq/news_148722.htm?selectedLocale=en
2. The author would like to thank Capt (rtd) Peter M. Swartz of the Center for Naval Analyses for his extensive assistance and mentoring in the development of this paper. All opinions and errors remain mine.
3. The standard work on the early history of naval command and control in NATO is Sean M. Moloney, *Securing Command of the Sea: NATO Naval Planning 1948-1954* (Annapolis, MD: Naval Institute Press, 1995).
4. See Geoffrey G. Barlow, *From Hot War to Cold: The US Navy and National Security Affairs, 1945-1955* (Stanford University Press, 2009).
5. Because of the dispute and delay in appointment, Admiral Fechteler instead became the US Chief of Naval Operations in August 1951. See Steve Marsh, "Churchill, SACLANT and the Politics of Opposition" *Contemporary British History*, Vol 27 No. 4 October (2013), pp. 445-465.
6. On Churchill's subsequent attempt as Prime Minister to scrap the SACLANT post, see Alan P. Dobson and Steve Marsh, "Churchill at the Summit: SACLANT and the Tone of Anglo-American Relations in January 1952", *The International History Review*, Vol 32, No. 2, June (2010), pp. 211-228. See also Marsh, *supra*, n.5.
7. Gregory G. Pedlow, *The Evolution of NATO's Command Structure, 1951-2009*, p.4. This article draws heavily on Dr. Pedlow's superb summary of NCS history. Available online at <https://shape.nato.int/resources/21/evolution%20of%20nato%20cmd%20structure%201951-2009.pdf>.
8. The others being SOUTHLANT which in 1967 was given over to IBERLANT after years of negotiations, and WESTLANT HQ in Norfolk Virginia.
9. Peter M. Swartz, *Evolution of U.S. Navy Roles in NATO: Always an Important Part of a Larger Whole*. CNA Centre for Strategic Studies, CIM D0010808.A1/SR 1, October (2004) [unpublished draft]
10. Ian Speller, "Inter-Service Rivalry: British Defence Policy, 1956-68". *RUSI Commentary*, 19 August (2010) available at <https://rusi.org/commentary/inter-service-rivalry-british-defence-policy-1956-1968>. The proposed CVA-01 aircraft carrier was never built. See also Tim Benbow, "Suez Sixty Years On: Implications for the Royal Navy", *Defence in Depth*, King's College London, 11 November (2016) available at <https://defenceindepth.co/2016/11/11/suez-sixty-years-on-implications-for-the-royal-navy/>
11. Swartz (2004), *supra*, n. 9.
12. Defence: Draft White Paper, C(67) 117, 4 July 1967. Declassified and available at <http://filestore.nationalarchives.gov.uk/pdfs/small/cab-129-131-c-117.pdf>
13. CIA Intelligence Memorandum The Baltic Impasse No. 0791/67 of 2

Feb 1967. Sanitised Copy approved for release 05/07/2012. Available at <https://www.cia.gov/library/readingroom/docs/CIA-RDP79T00826A001600010043-1.pdf>.

14. See Swartz (2004), *supra*, n. 9; On the commitment of Polaris SSBNs to NATO, see Marco Carnovale, *The Control of NATO Nuclear Forces in Europe* (Boulder: Westview Press, 1993).
15. See John Hattendorf, "International Naval Cooperation and Admiral Richard G. Colbert" in *idem ed., Naval History and Maritime Strategy: Collected Essays* (Malabar: Krieger Publishing, 2000).
16. Swartz (2004), *supra*, n. 9.
17. *North Atlantic Treaty Organisation: Facts and Figures* (Tenth Edition) (Brussels: NATO Information Service, 1981), p. 94.
18. This discussion draws heavily on Peter M. Swartz, "Preventing the Bear's Last Swim: The NATO Concept of Maritime Operations (CONMAROPS) of the Last Cold War Decade" in I. Loucas & G. Marcoyannis (eds.) *NATO's Maritime Power 1949-1990* (Inmer Publications, 2003), pp. 47-61.
19. Royal Navy submarine forces were closely aligned with the US Navy forward strategy, whereas the surface force remained more focused on protection of SLOCs. See Jim Ring, *We Come Unseen: The Untold Story of Britain's Cold War Submariners* (London: John Murray, 2001). See also Eric J. Grove, "The Convoy Debate" *Naval Forces*, Number 3 (1985), pp. 38-46 and Swartz (2004), *supra*, n. 9, pp. 44-45.
20. Vice Admiral Henry C. Mustin, US Navy (Retired), *Personal Experiences, Surface Warfare, and USN Strategy during the Cold War*, Oral History Program, Naval Historical Foundation (2001) pp. 154-58. On role of VADM Ace Lyons in laying the groundwork for the 1980s Maritime Strategy, see John F. Lehman, *Oceans Ventured: Winning the Cold War at Sea* (New York: W. W. Norton & Company, 2018).
21. Federal Minister of Defence, *White Paper 1985: The Situation and the Development of the Federal Armed Forces* (Bonn: Federal Minister of Defence, 19 June 1985, p. 76; see Swartz (2003), *supra*, n. 18, pp. 55-56.
22. Swartz (2003), *supra*, n. 18
23. Pedlow, *supra* n. 7, pp. 12-13.
24. Jack Dorsey, "Atlantic Command will be Divided" *Virginian Pilot*, 14 August (1985), Norman Polmar, "The US Navy: Command Changes" *Proceedings*, US Naval Institute, December (1985) p. 156.
25. *Alliance Maritime Strategy*, 18 March 2011, available online at https://www.nato.int/cps/ua/natohq/official_texts_75615.htm. The author was one of the drafters of the AMS.
26. George Tsiboukis, "NATO Hunting at least one Russian Navy Oscar II Class Submarine in the Mediterranean Sea" *DCSS News*, Dartmouth Centre for Seapower and Strategy, 10 December (2016) available online at <http://blogs.plymouth.ac.uk/dcss/2016/12/10/nato-hunting-at-least-one-russian-navy-oscar-ii-class-submarine-in-the-mediterranean-sea/>
27. See Official Text: *Warsaw Summit Communique*, Press Release (2016) 100, 9 July (2016) para. 46 and 23, available online at https://www.nato.int/cps/en/natohq/official_texts_133169.htm.
28. See Kathleen Hicks, Andrew Metrick, Lisa Sawyer Samp and Kathleen Weinberger, *Undersea Warfare in Northern Europe*, Centre for Strategic and International Studies Report (Rowan & Littlefield, July 2016); Steven Horrell, Magnus Nordenman and Walter Slocombe, *Updating NATO's Maritime Strategy*, Atlantic Council of the United States (2016); John Andreas Olsen (ed.), *NATO and the North Atlantic: Revitalising Collective Defence*, Whitehall Papers, Royal United Services Institute for Defence and Security Studies, June (2017).
29. *Supra*, n.1.
30. Aaron Mehta, "US, Germany likely home to new NATO commands" *Defense News*, 14 February 2018, available online at <https://www.defensenews.com/smr/munich-security-forum/2018/02/14/us-germany-likely-home-to-new-nato-commands/>

Mr. James Henry Bergeron is the Political Advisor for MARCOM at Northwood, UK.





“We have the opportunity to build JFC Norfolk from the ground up to make it fit for its time, and fit for its purpose.”

***VADM Andrew “Woody” Lewis
Commander, Joint Force Command
Norfolk***

AN INTRODUCTION TO JOINT FORCE COMMAND NORFOLK

**CDR JOSH HEIVLY, USN
CJOS COE**



Joint Force Command Norfolk (JFCNF) Crest.

Source: Open Source

One of the most important results of the ongoing NATO Command Structure Adaptation effort has been the decision to establish a new Joint Force Command headquarters in Norfolk, Virginia, focused on the Atlantic as part of the comprehensive 360-degree approach. As currently envisioned, Joint Force Command Norfolk (JFCNF) is a Multi-National, US-led, Joint Operational level command, responsible for the North Atlantic and the High North, supported by Joint Force Components and Allied Commands. It includes both NATO Command Structure (NCS) and NATO Force

Joint Force Command Norfolk (JFCNF) is a Multi-National, US-led, Joint Operational level command, responsible for the North Atlantic and the High North...

Structure (NFS) personnel, plus representatives from participating partner nations. The key elements of its derived mission and tasks, which resulted from the Mission, Functions, Tasks and Activities (MFTA) analysis conducted in late 2018, are that it delivers Multi-National and

NATO joint effects, maintains readiness, protects Strategic Lines of Communication, deters aggression, contributes to NATO responsiveness, secures

reinforcements and resupply, and if required projects power to defend Allies and Partners.

Concept of Operations

JFCNF will be a lean, agile and operation-



ally-focused command, supported administratively by area commands. It will build persistent strong relationships with Allies and Partner command entities and agencies in and around the North Atlantic and the High North, to leverage both their multi-domain awareness and resources. This will allow the command to establish awareness, develop understanding through assessment and anticipation, in order to be able to influence and respond in a timely manner, and contribute

mand, with an embedded NCS element, allows the command to conduct planning, prepare and operate persistently based on contributing Allies and Partners capabilities and interests. Hence, the command will help synchronize SACEUR's desired strategic effects amongst Allies at the NATO joint operational level. When the NAC decides, JFCNF will conduct operations as directed by SACEUR.



Russia's nuclear-powered guided missile submarine (SSGN) Severodvinsk class K-561 Kazan.

effectively to NATO responsiveness and deterrence.

The command will plan for operational activity as a dynamic process to effectively synchronize Allied and Partners effects and prepare for contingencies. JFCNF will establish a wide command network, standing operating procedures, use day to day activities, training and exercises, to ensure a high degree of interoperability, and key developments in the operating environment.

The unique construct of JFCNF, as a US-led, MoU-based multinational joint level com-

Playing to the strengths of Allies, Partners and NATO

The main purpose of the command is to contribute to an enhanced 360-degree awareness and understanding in the North Atlantic and High North region. Secondly, JFCNF's command network will contribute to enhance NATO's maritime posture and Joint Warfighting capabilities and capacities. Thirdly, the command will contribute to stability and deterrence, and will to this end synchronize effects of Allies and Partners activities at the Joint level. By being persistently connected to Allies and Partners command entities

Source: Mil.ru



and agencies in the region, by joint effects synchronization, the command will leverage Allied and partner strengths and contribute to enhanced readiness, interoperability, warning and NAC responsiveness.

Organization and Components

JFCNF will be led by the dual-hatted Commander of US Second Fleet, supported by a staff of approximately 150 personnel at full peacetime manning, organized into a Command Group and three Directorates for Operations, Plans and Support. It will execute its mission via designated component commanders for the Maritime, Air, Land, Special Operations and Logistics domains. When activated by the North Atlantic Council, it will quickly expand to approximately 400 personnel, allowing it to handle the wide range of tasks and operations required of an operational commander.

Moving Forward

As the Framework Nation, the United States is moving quickly to execute necessary implementation and establishment actions for JFCNF, to include provision of short and long term facilities, infrastructure, cross-organizational agreements, training and schooling, and much more. Ultimately, in short order JFCNF will begin to deliver key capabilities to the Alliance, deterring potential adversaries which ensuring the collective security of and defense of the nations is maintained into the future. 🌐

CDR Josh Heivly is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil



CJOS COE is soliciting topics to develop into a 2020 Warfare Symposium. Abstracts that can lead into meaningful discussions on what countries should be looking to develop for future warfare. The symposium would be open to government, academia, industry and private companies that what to provide relevant dialogue on the future warfighter. Attendee collaboration and participation is highly encouraged.

For more information visit:
www.CJOSCOE.org
CDR Jose L. Garza, USN
Email:
usff.cjos.coe@navy.mil
Tel: +1 (757) 836-2452



“Today, we are emerging from a period of strategic atrophy, aware that our competitive military advantage has been eroding. We are facing increased global disorder, characterized by decline in the long-standing rules-based international order—creating a security environment more complex and volatile than any we have experienced in recent memory. Inter-state strategic competition, not terrorism, is now the primary concern....”

2018 U.S. National Defense Strategy



Meeting of the North Atlantic Council at NATO Headquarters.

Source: NATO

From Cold War forward presence operations, designed to counter a large-scale, highly capable threat in the high seas, via the post-Cold War era of

Operations Other Than War (OOTW) and maritime situational awareness operations

mainly conducted in the littoral, right back to the future with an even more complex battlefield sharpened by rapid technological improvements and encounters from adversaries in all warfare areas - traditional or contemporary, allied navies must come to terms with the changing circum-

stances. In order to assess the best way to synchronize assets and resources with national goals and objectives, partner nations need to strengthen alliances, while attracting new partners

and maintaining security partnerships.

Recognizing that mutually beneficial alliances and partnerships are essential and

cooperation with allies and partners accumulate the greatest possible strength. The Cooperative Deployment Program (CDP)¹ of the U.S. Navy reflects this overall line of effort by expanding the scope of training and deployment opportunities for partner nations. Participation in coalition operations, exercises, and training enhances interopera-

To promote and foster a sufficient degree of Allied and Coalition interoperability...



bility and familiarity and furthermore improves the readiness of all participants. Integration and interoperability adds complementary warfare capability and capacity to any force.

Combined Joint Operations from the Sea – Centre of Excellence

Combined Joint Operations from the Sea – Centre of Excellence (CJOS COE) with its 13 sponsoring nations and the U.S Navy as its host nation, represents a collective wealth of maritime experience, expertise and best practices, is the best organization to connect partner nations and promote interoperability. At the highest levels, nations must be willing to share, integrate and adjust to different operational methods by understanding each other’s doctrines, cultures, and interests. CJOS’ close proximity to major U.S. Navy commands like United States Fleet Forces (USFF), Carrier Strike Group FOUR (CSG-4), Tactical Training Group Atlantic (TTGL), Expeditionary Warfare Training Group Atlantic (EWTGL) and Navy Warfare Development Command (NWDC) enables mutual support to lead the interoperability endeavor.

At the operational and tactical level partners must be able to exchange information to maintain a common picture, support and sustain each other in order to organize a coordinated engagement in any way. To promote and foster a

sufficient degree of allied and coalition interoperability, CJOS COE looks at all levels but focuses on the operational and tactical level of cooperative maritime operations. This being the case, a particularly important question in defining CJOS COE’s role is how to preserve and share releasable interoperability best practices with allied, coalition or partner nations, equally.

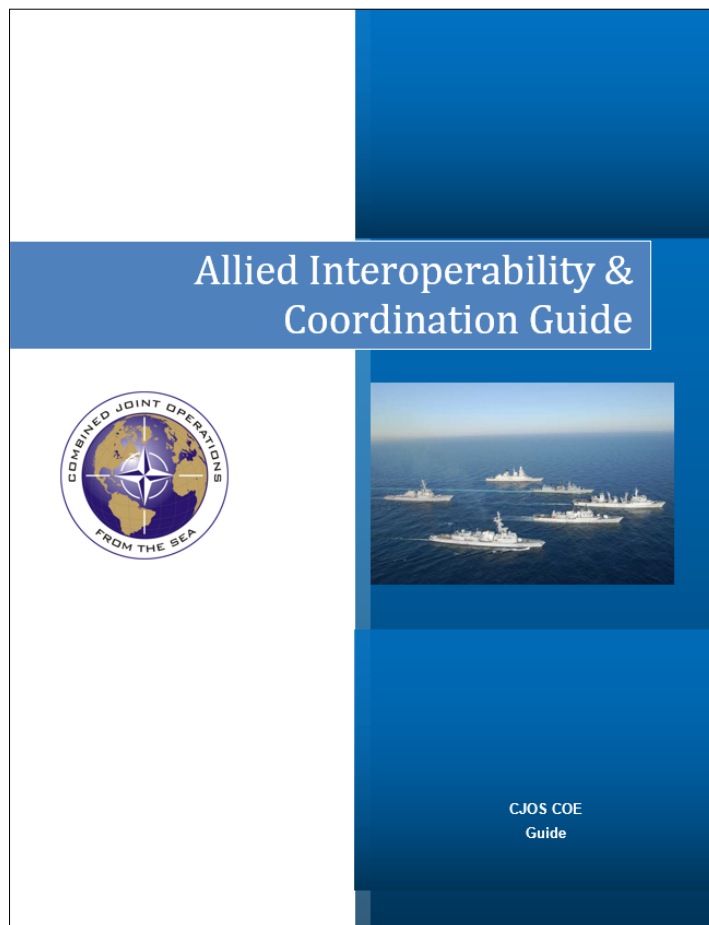
The GUIDE

The Allied Interoperability & Coordination Guide (The Guide) looks at the issue of maritime interoperability, specifically between the U.S. Navy and its high-end allies participating in the Cooperative Deployment Program (CDP). To many, this implies exercise participation only; however, the key component of the CDP is the cooperative deployment after Carrier Strike Group certification.

The Guide does not confine aspects of interoperability and integration to a discussion of technology and connectivity but also broadens the discussion to the operational/procedural and human/cultural dimensions as well. It looks at the interoperability gaps between the U.S. Navy and its allies and

examines interoperability implications for warfare areas for better mutual understanding.

Eventually The Guide will be a tool for Allied, coalition and partner navies involved in integrated, multinational or bi-lateral operations, exercises or training to start off in the most effective way and make the best use of given time, assets and resources. Therefore, the





document looks not only at interoperability, including technical, operational and cultural interoperability but also into integration and coordination. Most mission successes discuss interoperability in terms of combining systems in the pursuit of operational effectiveness but upon closer examination interoperability gaps often have their roots in poor integration and coordination efforts.

The GUIDE is divided into four parts: Coalition integration, interoperability, logistics and best practices.

CJOS COE used its advantageous position to engage the main stakeholders of the maritime enterprise involved in

U.S. Navy sponsored cooperative deployments program to provide guidance and advice regarding the integration and interoperability, likewise for U.S. participants, allies, coalition and partner nations. The GUIDE is to be read by anyone who needs an introduction to the U.S. Navy exercise and training environment. This includes supporting single ship and aircraft operations, Joint Maritime Expeditionary Operations at the Task Group/Task Force or Strike Group level and augmenting a Combined/Joint Maritime staff requirement for a Component Commander.

Supported by a selection of checklists for better coordination and integration, like the Pre-Deployment Checklist, the Early Liaison Checklist or the Communication Guide and Interoperability Checklist as technical and operational tool The GUIDE supports the national fleet planners in understanding the variety of training opportunities and levels of possible successes to achieve the desired mission or training objectives.

Conclusion

At the end of the day, totally seamless interoperability between allies or coalition partners is not likely. It is probably an unachievable goal, especially if interoperability gaps have their origin in political/cultural factors like, differences in their

foreign disclosure policy or in national Rules of Engagement. However, the future maritime threat, which character is best described as being incredibly fast (e.g. underwater rockets, hypersonic missiles, rapidly changing technology etc.) demands that the level of interoperability to be very high. Systems must be comparable, compatible, and connected at all levels. Information has to be understood and shared.

The GUIDE is to lay out some of the issues involved in gaining a fuller understanding of

interoperability and better integration. It helps to prepare all participants HQ's, staffs, instructors and single units to compare different approaches in TTPs and doctrines. The GUIDE

...partners must be able to exchange information to maintain a common picture, support and sustain each other in order to organize a coordinated engagement in any way.

sets the stakeholders in a position to ask the right questions and get answered in due time to save valuable time during the very first stages of integration and to start cooperation at a higher level.

The Guide is published on the CJOS COE website at <http://www.cjoscoe.org>.

1. OPNAVINST 3500.45, N3/N5, 24. Aug 2016

CDR Joerg Maier is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil





“A sound logistics plan is the foundation upon which a war operation should be based. If the necessary minimum of logistics support cannot be given to the combatant forces involved, the operation may fail, or at best be only partially successful.”

Admiral Raymond A. Spruance

CHALLENGING ROAD LEADING TO MARITIME FORCE INTEROPERABILITY

**CDR TONY TING, USN
CJOS COE**



Source: NATO

EADRCC Consequence Management Field Exercise SRBIJA.

General Dwight D. Eisenhower (United States Army) once said “You will not find it difficult to prove that battles, campaigns, and even wars have been won or lost primarily because of logistics.” Interoperability between combatant and logistics ships is no longer an extravagance that can be set aside for exercises only. Its effectiveness in a real world scenario will require careful planning and undoubtedly will be overwhelming at first. Logistics is one of the most important yet often neglected in interoperability discussions – where logistic ships are mostly viewed as “supporting ships” and not as “supported” ones. One would wonder how logistics ships can deliver the supplies needed by the combatant forces if these ships are not escorted by combatant ships for protection (supported) and how the Alliance can ensure the logistics pipeline will remain undisrupted and for supplies to continue flowing in an event

a conflict erupts with an adversary with anti-access/area-denial (A2AD) capabilities. Some war game scenarios assume that the logistics ships will be safely located in a pre-determined replenishment box or location and needed supplies will continue to flow. This strategy will not get the right items to the right location at the right time to support the combatant forces (Air, Maritime, Ground). Logistics support and pipelines need to be secured and be included in the planning process. Its protection must be part of the strategy and will require careful, deliberate and proper coordination. The logistics flow can be constrained and if unsupported, will be vulnerable to actions by a potential adversary resulting in longer lead time or even denial of access to basic valuable resources in time of war such as food and ammunitions, also known as “beans and bullets.” An adversary will always exert considerable efforts to degrade the logistics flow and prevent or



delay the combatant forces' access to the "beans and bullets."

The center of logistics is deployment and distribution capability. Planners need to consider lead times, the vast distance between replenishment ports (where supplies are loaded to the logistics ships), replenishment boxes (where the supplies are delivered to the combatant force), and the space the logistics ships have to cover before it reaches the replenishment boxes. Close coordination between logisticians and the maritime combatant force is crucial; the lack thereof will result in mismatches between the materiel provided by the logistics system and the needs of the force.

One of Sun Tzu's famous quote is "The line between disorder and order lies in logistics." This simple truth has been proven consistently in numerous campaigns. In today's environment, in a no-warning scenario that has to be fought with forces currently located in Europe, are the supplies (ordnance, fuel, food etc.) protected? Is the flow of logistics and alternative routes identified (and can be protected) to support maritime forces? Logistics ships together with the combatant forces need to be integrated and distributable into conflict areas to ensure materiel will continue to flow to sustain combat forces. Coordination during a conflict will be smoother if collaboration between the logisticians and the maritime combatant forces exist during regular deployments and training exercises. Interoperability will not work if the Alliance cannot logistically support the lowest level. It does not matter if the unit is on land or at sea, the fundamental principles of sustainment will always apply and its importance should not be discounted when developing the operational plans.¹

The future of interoperability will be determined by today's investment in science and technology. Studies and experimentations can be useful to gain/increase the knowledge and understanding of the interoperability gaps between the Logistics and Maritime assets. A meaningful study will determine how to best utilize current assets, develop or update doctrines and concept of operations - this analysis will aid in validating the gaps and in selecting the concept for the requirements to be acquired to bridge the gaps. NATO and other international cooperative programs need

to be utilized to the maximum extent possible in standardizing agreements specific to certain systems needed to promote maritime and logistics interoperability. NATO needs to ensure its' Maritime Forces (warfighters and logisticians) have the ability to exchange data, information, materiel and services to and accept the same from other systems of the Alliance in order for the Maritime force to operate effectively.

One important area NATO needs to review is the networks used by logisticians. These networks are heavily reliant on unsecured means of communications which involves sending sensitive information regarding the planning such as replenishment schedule, replenishment location and ships involved. This information, if exploited, will give the adversary an accurate picture of fleet movements and area of operations which can be used by an adversary to launch an attack.

There is a train of thought calling for the standardization of all weapons system platforms before NATO can interoperate. That said, due to the differing national constraints, priorities and perception of threats, a total weapon system standardization onboard all the maritime platforms may not be achievable. It is understandable that non-standardized weapon systems will make data exchange more challenging but these maritime assets/weapon systems (though different) still offer the Joint Force Commander certain capabilities that can be employed in addressing threats and be proven useful in interoperability.² Assets from the partner nations still provide unique capabilities that can enhance interoperability thus providing the joint force commander with options in force employment and allowing the Alliance to work together as a whole, effectively and efficiently to achieve tactical, operational and strategic objectives.

Ultimately, NATO needs to clearly delineate its' policies on interoperability between maritime and logistics forces, communication, data exchange and cybersecurity. These policies will not only reduce the likelihood of intruders accessing the Alliance' systems (or limit the damage when hacked) but more importantly will promote interoperable systems (to include the non-standard networks/weapon systems) across all platforms and ensure those systems will enable the Joint Force Commander to securely facilitate



Source: MCSA Brian H. Abel

Sailors move supply pallets after Replenishment at Sea (RAS).

information exchanges (such as the ability to provide an assessment of current threats and status of operations) in order to have an effective command and control and better utilize its weapon systems, all for the benefit of the operators (Air, Ground and Maritime Forces).

The Alliance needs to ensure its systems are hardened (to include those used by logisticians) and its cybersecurity improved in order to detect attacks at its initial stages and defend its networks since the more connected the Alliance is, the more it can introduce vulnerabilities thus raising the sensitivities and hesitation in information sharing. A weak system can be subject to exploitation; an intruder can gain access and affect the integrity and disable the capability of a system. The inability of the Alliance to communicate in conflict or an attack on a vulnerable weapon system can result in incapacitation of its forces. A cyber-attacker will look for access by going around the security controls to gain full control of the system – either by disabling or injecting false information such as spoofing, pass-the-hash, zero-day exploit, malware, denial of service, injecting false information on the supply chain, etc. The more knowledgeable the attacker is about a system, the more sophisticated are the options that they can develop to ensure they remain undetected.

The existing legacy systems (to include those used by logisticians) need to be examined for cyber vulnerabilities and possible malwares

residing as dormant cells in the system but has the capability to incapacitate the whole entire system when activated. Complacency may have taken its place in the Alliance and some partner nations may not have the solid understanding of its cybersecurity vulnerabilities or if their own maritime combatant force has the ability to interoperate or simply to communicate with the rest of the Maritime Combatant Force.

In order for the Maritime Force to be effective, the Alliance needs to clearly delineate its' policies on interoperability, communications, data exchange, and cybersecurity before it can secure/protect/defend its networks/weapon systems and effectively employ its forces. NATO needs to develop the standard, the strategy, and provide the guidance before it can have a Maritime Force that truly operates in an interoperable environment. ❁

1. Multinational Logistics Interoperability. Communication, cooperation, and equipment compatibility are the keys to multinational task force logistics. Captain Theresa D. Christie; Army Sustainment, September – October 2015.
2. NATO standardization and Interoperability – Handbook of Lessons Learned. William B. Williams, Virginia Perry, Harold Candy. US Army Procurement Research Office, Fort Lee VA, December 1978.

CDR Tony Ting is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil



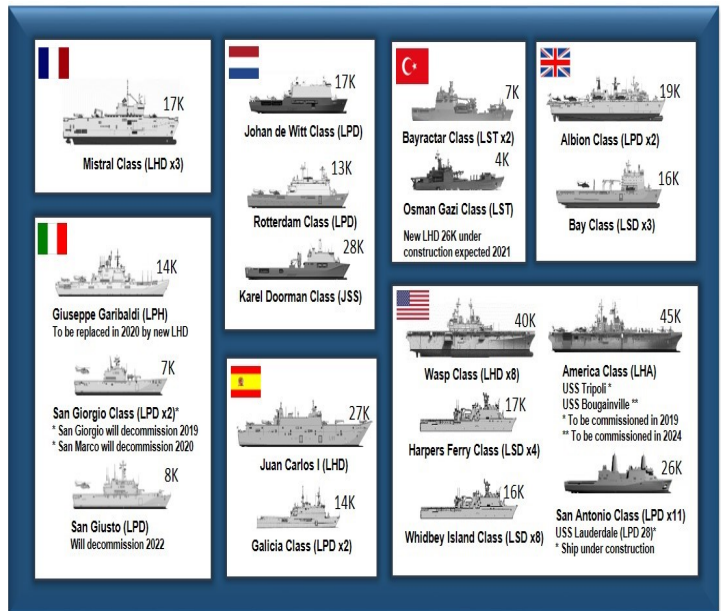


‘...amphibious forces provide the Alliance with unique capabilities in terms of operational flexibility, scalability, and rapid response. Increased investment...is essential to our deterrence and defence.’

***General Curtis Scaparrotti
Supreme Allied Commander Europe***

DEVELOPMENT OF THE NATO AMPHIBIOUS TASK FORCE

**CDR JOSE CONDE, PRTM
LTCOL JOS SCHOONEMAN,
RNLM
CJOS COE**



Main NATO Amphibious Shipping

Source: NATO

In a period of renewed great power competition, the United States and other NATO allies are once again giving attention to the maritime dimension of deterrence and defense in the North Atlantic and Northern Europe. Growing Russian assertiveness and the deployment of a range of new maritime surface and subsurface systems have increased the maritime threat. The US and NATO responses include the re-establishment of the US 2nd Fleet and the establishment of a third NATO Joint Force Command (JFC) in Norfolk (US), both with missions to defend the North Atlantic including the high North.

At the 2018 NATO Summit, NATO agreed to strengthen the Alliance's deterrence and defence posture in all domains, including amphibious operations in the maritime domain. NATO Military Authorities (NMA) raised their concern regarding the current size and readiness

of an Amphibious Task Group (ATG) within the Immediate Follow-on Forces Group of the NATO Response Force (NRF) and indicated the potential value of establishing a multinational Amphibious Task Force (ATF).^{1,2} An ATF capability would bolster NATO's operational and strategic responsiveness, flexibility and agility, and would be relevant in high-end conflicts (Major Joint Operation Plus (MJO+)) as well as in a variety of low-end crises and conflicts, counter-terrorism and disaster relief roles as well as delivering a powerful deterrent effect.

Within the NATO Force Structure (NFS) there are six national ATGs that could form the core of a NATO multinational ATF. The six ATGs are comprised from United Kingdom, Netherlands, Spain (Spain may also embark Portuguese Marines), Italy, France and the US. In 1973, the United Kingdom and the Netherlands raised a combined amphibious force structure



(UK/NL AF) and in 1997 the Spanish-Italian Amphibious and Landing Force (SIAF/SILF) was formed. Both UK/NL AF and SIAF/SILF exercise and train on a regular base and have high standards of interoperability within their respective ATG.

Although the Alliance's amphibious forces collectively offer an impressive capacity, NATO has struggled to effectively aggregate multiple national or bi-national ATGs into a coherent ATF. The first challenge to be rectified is that of C2. All national ATGs have a Commander Amphibious Task Force (CATF) and Commander Landing Force (CLF) Command and Control (C2) structure. During a NATO operation or exercise this CATF/CLF staff would be under Operational Control (OPCON) of the Maritime Component Commander (MCC).³ Neither the ATG CATF/CLF staffs nor the potential MCCs are currently configured to be able to execute command and control of an ATF with multiple ATGs at the MJO+ level.

This capability shortfall has been identified and the need for a NATO multinational ATF with a centralized CATF/CLF staff, has been discussed among the Amphibious Leaders Expeditionary Symposium (ALES) community during the multiple events that took place since 2016.⁴ In 2018 Commander U.S. Marine Corps Forces Europa and Africa (COMMARFOREUR/AF) initiated ALES to generate a NATO forum for flag and general officers to explore opportunities for improved interoperability and the utilization and aggregation of amphibious forces within NATO. So far five ALES events have taken place and these culminated in a wargame in June 2018 (Stavanger, Norway). The purpose of the wargame was to explore the utility and function of the centralized ATF, better understand its viability in a MJO+, and examine the necessary actions NATO requires to plan, test, and implement the construct.

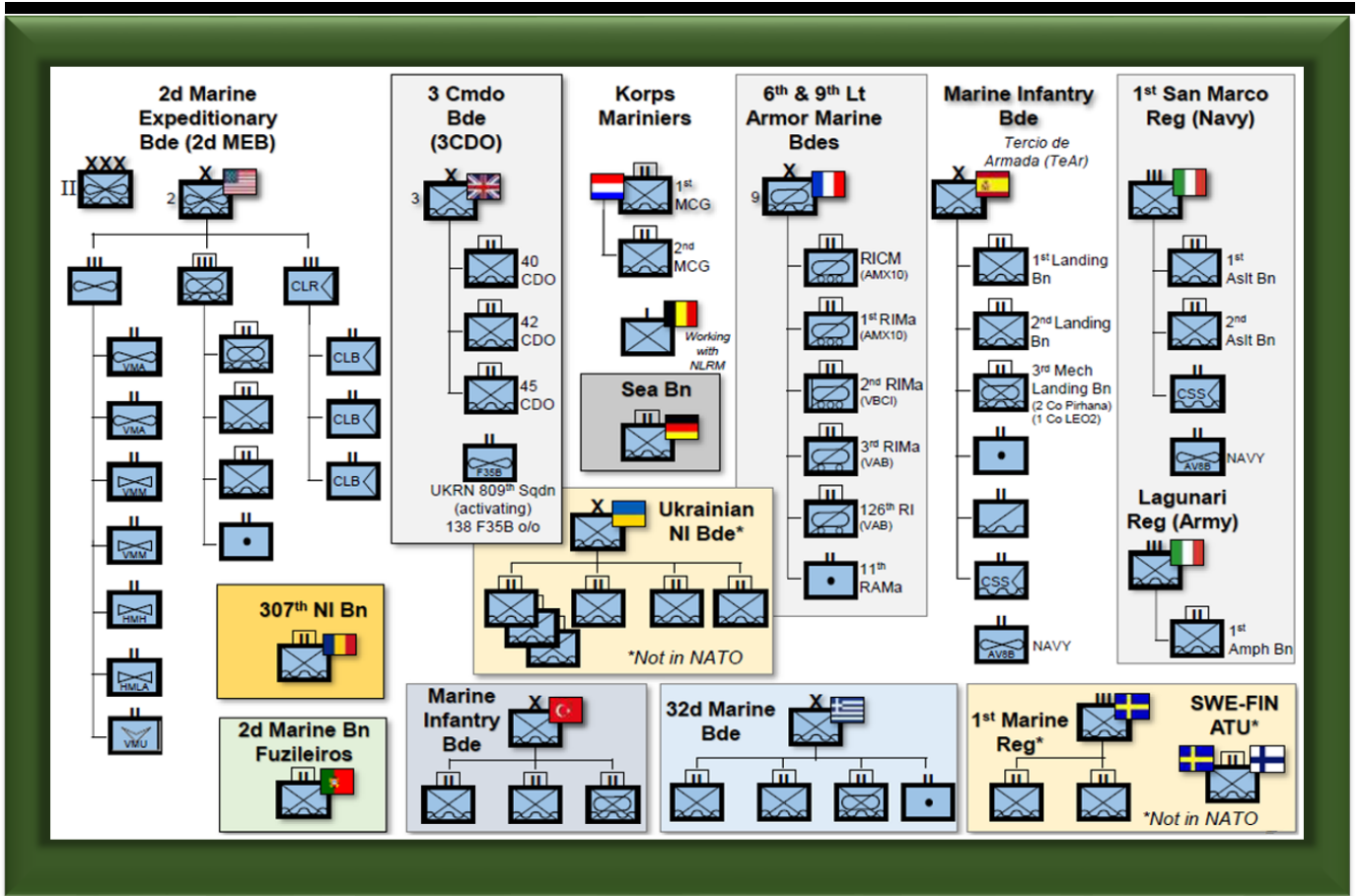
The scenario of the wargame postulated an incursion of a peer adversary onto a fictional island nation, a NATO member state located between Norway and Iceland. The ATF was ordered to conduct three near-simultaneous assaults in order to retake Red lodgments, distributed along a coastline of several hundred miles. This scenario provided the right context to

particularly examine how a co-located, combined and afloat CATF/CLF staff would apportion authorities, manage battlespace, allocate resources, and respond to enemy action in a complex, contested environment. Figure 1 shows the C2 construct used during the wargame.

From the wargame (and the previous ALES events), the following recommendations have been highlighted:

- Delineate MCC, ATF and ATG responsibilities;
- Enhance the ATF with centralized C2 capabilities and capacity;
- Specify the requirements for sourcing CATF/CLF and their multinational staffs;
- Synchronize amphibious and naval exercises by developing a holistic training platform;
- Identify and pursue tactical interoperability requirements beyond current habitual relationships;
- Develop NATO amphibious (planners) courses;
- Develop a NATO ATF concept for amphibious operations at the MJO+ level;
- Update NATO amphibious doctrine;
- Develop a NATO roadmap for the generation and employment of the ATF;
- Evolve ALES into a permanent NATO amphibious platform under Allied Maritime Command (MARCOM) lead.⁵

As a result of the previously mentioned 2018 NATO Summit, several work strands were identified to reinforce the Allied Maritime Posture. In consultation with the wider Maritime Enterprise, these work strands require input from MARCOM as the principal maritime advisor to SACEUR. One of the work strands is to provide proposals on how to take full advantage of the effects of an amphibious force and to explore the potential requirement for establishing a multinational NATO ATF. In the last quarter of 2018, MARCOM established an ATF working group to advise the recently formed Amphibious Delivery Board.⁶ The ATF working group implied almost all the above mentioned recommendations and focused its advice on the readiness and scalability of a multinational ATF within the NRF including



Source: MARFOREUR/AF

Figure 1. NATO's Amphibious forces in Europe.

the generation of a CATF/CLF headquarters. The Amphibious Delivery Board, under MARCOM lead, is to provide the requested proposals to SACEUR in time for the June 2019 Defence Ministers' meeting.

NATO will then decide how to strengthen the Alliance Maritime Posture including the aggregation of NATO amphibious capabilities in order to bolster NATO's operational and strategic responsiveness. Amphibious forces provide the Alliance with unique capabilities in terms of scalability, high readiness, flexibility, agility, speed of manoeuvre and the ability to operate across all domains. ❁

1. A national ATG consists of a battalion size landing team with enabling forces and 1 to 3 amphibious shipping. A bi-national ATG consists of a brigade size landing team with enabling forces and 2 to 6 amphibious shipping
2. An ATF consists of 2 or more ATGs under a centralized CATF/CLF HQ
3. For example, Allied Maritime Command (MARCOM), one of the High Readiness Forces Maritime (HRF(M)) or STRIKFORNATO could be the MCC in a Joint Operation Area (JOA) of a MJO+.
4. Since its inception, ALES has enjoyed active participation by allied countries (ESP, FRA, GBR, ITA, NLD, NOR, PRT, and USA), as

well as NATO organizations and commands. ALES events to date include: Symposium (Stuttgart, October 2016), Table Top Exercise (Naples, June 2017), Seminar (Northwood, November 2017), Workshop (Washington DC, January 2018) and a war-game (Stavanger, June 2018). CJOS has participated in several events with staff officer (s) and or the deputy director.

5. For example, an amphibious steering group or a 'COMAMPHIBNATO', analogous to COMSUBNATO (A useful parallel is the existing NATO Submarine Commanders Conference (SCC), which has no executive authority within NATO C2, but promotes, at the highest level, submarine interoperability to efficiently conduct allied submarine operations and exercises).
6. CJOS has been a member of this working group, together with SFN, CSWCOE, ESG2, UK Royal Marines, MARFOREUR/AF and MARCOM.

CDR Jose Conde is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil



LTCOL Jos Schooneman is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil



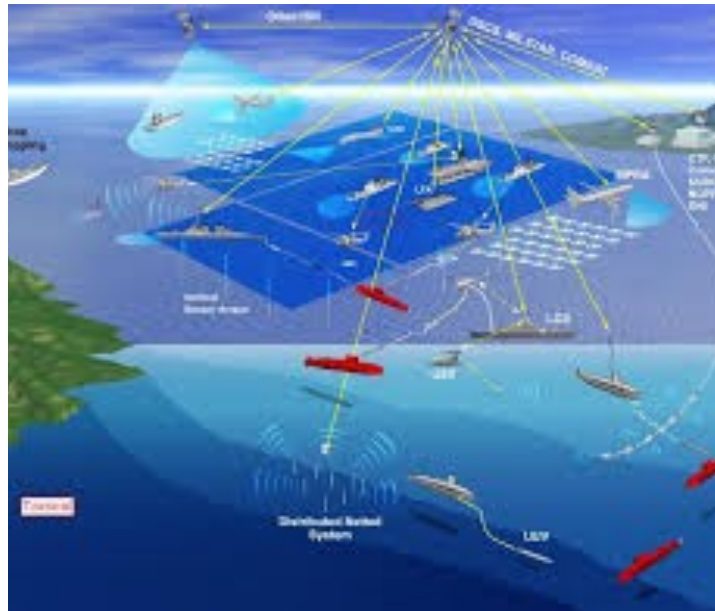


“Increasing reliance on cyber and space-based capabilities by Alliance forces presents vulnerabilities for adversaries to negate critical NATO capabilities through degradation, denial or destruction”

NATO’s Joint Air Power Strategy

**ANTI-SATELLITE
CAPABILITIES AND
MILITARY
OPERATIONS**

**CDR NECULAI GRIGORE,
RON
CJOS COE**



Dynamic C2 for tactical forces and Maritime Operations Center.

Technology, seen as a “force multiplier”, has offered the possibility of modern command and control conceptual development as well as the implementation of decisive systems for military operations. Over the years, aided by technological advances and the availability of information, military theorists have elaborated concepts about improving mission effectiveness based on reduced decision cycle time.

Thus, the development of more related concepts that, based on the lessons learned during the last decade of operations, came to a head with the Federated Mission Networking (FMN) concept. The implementation of FMN offers a capability that aims to increase mission effectiveness of interconnected forces into a federated mission environment through enhancing speed of command based on shared situational awareness, collaboration and self-synchronization.

The necessity of this concept was developed from the complexity of existing military operations that involved a large diversity of entities participating in operations which have to work together to accomplish common goals. In consequence, the FMN Concept identified six objectives that drive the operational requirements for nearly all mission networks:

1. Seamless human-to-human communication across the force.
2. A single view of the battle space across the Mission Network.
3. Timely provision of a Mission Network.
4. Provision of consistent, secure, accurate and reliable mission data.
5. Community of Interest (COI) capabilities that align with the mission requirement.
6. Well-trained staff that can support an effective decision cycle and take full advantage of the



Categories of space threats.

Source: CIOS COE

systems provided.¹

One of the most important systems that has facilitated the implementation of the new concept of fighting and increased the level of military action is satellite systems. It is one of the critical systems for the implementation of the FMN concept. “Space capabilities enable the way of warfare by making it possible for military commanders and forces to see the battlespace more clearly, communicate with certainty, navigate with accuracy, and strike with precision.”² The use of satellite applications has become an integral part of the contemporary conduct of military operations, and these include, but are not limited to: Satellite Communications (SATCOM), Positioning, Navigation, and Timing (PNT), Intelligence, Surveillance, and Reconnaissance (ISR), Terrestrial and Space Environmental Monitoring (METOC), Space Situational Awareness (SSA) and Shared Early Warning (SEW).³

Space capabilities provide a broad range of products and services in support of military operations. Besides many other applications such as control of remotely piloted platforms, positioning, navigation and timing, reconnaissance of things on the ground, and weather monitoring, it also ensures the essential application for military

operations: interconnection in a flexible manner of the forces deployed all over the area of operations in order to improve the ability to respond to the entire spectrum of actions of the potential adversaries. Interconnection provides information support and increases the level of decision and action in military operations and the adaptation of the principles of fighting based on the possibility of information superiority, shared awareness and self-synchronization.

The importance of this capability has led to investigating the use of increased number of countries using space to enhance their military capabilities and national security. The growing use of and reliance on space for national security has also led more countries to look at developing their own counter space capabilities that can be used to deceive, disrupt, deny, degrade, or destroy space systems.⁴

Space systems including military and commercial satellites are “vulnerable to a wide array of threats, ranging from jamming and cyberattacks to direct-ascent anti-satellite (ASAT) weapons.”⁵

There are several categories of kinetic and non-kinetic counter space capabilities:



- Direct Ascent: weapons that use ground, air-, or sea-launched missiles with interceptors that are used to kinetically destroy satellites through force of impact, but are not placed into orbit themselves;
- Co-orbital: weapons that are placed into orbit and then maneuvered to approach the target;
- Directed Energy: weapons that use focused energy, such as laser, particle, or microwave beams to interfere or destroy space systems;
- Electronic Warfare: weapons that use radiofrequency energy to interfere with or jam the communications to or from satellites;
- Cyber: weapons that use software and network techniques to compromise, control, interfere, or destroy computer systems.⁶

The existence and possible use of these capabilities can be deduced from the objectives of the procurement programs and from the actions that have been proven over time to belong to different state and non-state actors. China has developed and perfected the following systems: “SC-19 direct-ascent ASAT system, DN-3 ASAT missile, and jamming capability against U.S. millimeter wave (MMW) satellite communications by using space-based jammers hosted on small satellites”.⁷ At the same time, Russia has developed capabilities with kinetic and non-kinetic characteristics that mainly consist of the S-500 missile capable of reaching altitudes of up to 600 km, and a laser ASAT weapon system for use aboard a Beriev A-60 jet (Russia).⁸

The possibility of counter space attacks could also be inferred from the actions of main actors into outer space, considered by some as a “military domain”. Relevant actions in this regard were carried out by China and consisted of a successful anti-satellite (ASAT) test (January 2007), a hackers attack of National Oceanographic and Atmospheric Administration’s (NOAA) satellite information and weather systems and by Russia, materialized in GPS spoofing attack in the Black Sea (2007).⁹

According to security environment assessments recently executed by the Information Warfare communities, it is assessed that if a future conflict were to occur involving Russia or China, either country would justify attacks against U.S. and Allied satellites as necessary to offset any

perceived U.S. military advantage derived from military, civil, or commercial space systems.¹⁰ This statement is also very important for NATO, who although does not own any space-based assets, uses the capabilities provided by nations.

In this context, maritime operations are primarily affected first. Considering the specifics of maritime operations which are characterized by limited terrestrial connectivity (fiber, cable) and high mobility over large regions, we can say that the satellite segment is a critical infrastructure for their command and control process.

In this respect, it is recommended to conduct a complex analysis and identify the effects caused by the lack of satellite communications for maritime operations. Most of the products and services offered by space capabilities cannot support the command and control process at each command level without the possibility of transporting their information by the satellite system.

Maintaining the benefits of information support in the conditions of threats to the satellite system existence, in a threat based environment for our satellite systems considering alternatives or actions to mitigate effects on maritime operations should become a continuing concern in order to ensure the resilience of the command and control process. In this complex analysis, with its effects in most governance processes, the following measures should be considered:

- Developing capabilities to protect the satellite systems. In the absence of satellite support, we risk coming closer to legacy WWII tactics.
- Increasing the command level of training based on a complex and stable training process provides the full range of knowledge and skills to support the decision-making process and superior understanding of the battle space. This training, along with its own expertise and native qualities, must strengthen the permanent tandem between military science and military art. All this ensures the ability of ordering the available information under low conditions. All this ensures the possibility to command under the conditions in a limited information environment.
- Consider alternatives to satellite communications systems that use other sources of



electromagnetic spectrum (e.g. HF radio systems) with increased resistance to possible specific threats (e.g. Jamming).

- Information formatting and the development of communication protocols that operate under conditions of low transmission speeds and in a complex electromagnetic environment.
- Adaptation of command and control systems to work under low data transfer speeds or for the use of other radio communication systems.
- Increasing the power of processing of combat management systems and automate their electronic processes to allow responses under restrictive time conditions due to the lack of early warnings offered by the satellite system and the existence of hypersonic missiles and aircrafts.
- Training of staff for the exploitation of alternative satellite and radio systems.
- Increasing knowledge of the effects of threats and determine the possibilities of securing the command and control process.
- Developing cyber situational awareness capabilities.

Space and space systems will be a critical center of gravity in any major future conflict. Nations must work to either maintain and improve their space capabilities or work to either acquire or rely on others for space support. The race for space superiority could be the deciding factor in the next major high end war. ❁

1. https://en.wikipedia.org/wiki/Federated_Mission_Networking
2. SpaceThreatAssessment2018, Todd Harrison, Kaitlyn Johnson, Thomas G. Roberts, CSIS, April 2018
3. http://www.jwc.nato.int/images/stories/_news_items_/2017/SPACESUPPORT_NATO_ThreeSwordsJuly17.pdf
4. Global Counterspace Capabilities: An Open Source Assessment, Brian Weeden and Victoria Samson, Secure World Foundation, April 2018
5. <https://www.csis.org/analysis/space-threat-assessment-2018>
6. Global Counterspace Capabilities: An Open Source Assessment, Brian Weeden and Victoria Samson, Secure World Foundation, April 2018
7. SpaceThreatAssessment2018, Todd Harrison, Kaitlyn Johnson, Thomas G. Roberts, CSIS, April 2018
8. Idem
9. Ibidem
10. "Worldwide Threat Assessment", Daniel Coats, National Intelligence Director, February 13, 2018

CDR Neculai Grigore is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil



ARE YOU PART OF THE DISCUSSION?



CJOSCOE



COECSW



MARSECCEOE



NMIOTC

SLOVER LIBRARY NORFOLK, VA

APRIL 30 - MAY 1



“Space support to operations includes all activities that provide capabilities through space in order to support NATO operations. Space is congested, contested and competitive. Freedom to act in the space domain and employ space capabilities is crucial to the outcome of conflicts.”

Allied Joint Doctrine for Air and Space Operations

BASICS OF SPACE SUPPORT TO NATO OPERATIONS

**CDR ROBERT WAGGONER,
USN
CJOS COE**



Space satellites orbiting Earth.

Source: NATO

The watch log entry from today at 0827 indicates the following:

- N6 reports a loss of satellite connectivity resulting in a loss of communications, high bandwidth network and Internet connectivity, and Video Teleconference (VTC) connectivity;
- N2 reports a loss of the Intelligence, Surveillance, and Reconnaissance (ISR) data feed;
- Quartermaster reports our location as 25nm inland;
- And the Meteorology report is blank due to lack of information.

This fictional watch log entry provides insight into the impact of Space on maritime operations. Without space or access to resources located in space, military operations will be vastly different from today’s model.

NATO military operations rely on the voluntarily provided space related capabilities from member nations as NATO does not own any space resources. Within NATO, space capabilities have been divided into the following areas:

- **Satellite Communications (SATCOM)** – provides a commander or unit with voice, data, Internet, and VTC connectivity. Via the Ultra High Frequency (UHF), Super High Frequency (SHF), and Extremely High Frequency (EHF) bands, SATCOM systems enable global coverage and extended range near-real time connectivity, while being potentially impacted by jamming, space weather and capacity that does not meet continuously expanding requirements.
- **Positioning, Navigation, and Timing (PNT)** – gives precise (with a very small degree of error) location information and timing data



critical to SATCOM, network timing, and targeting processes. A high degree of accuracy and global coverage are key elements of the PNT system that is affected by adversary jamming and spoofing.

- Intelligence, Surveillance, and Reconnaissance – ISR systems provides situational awareness of adversary and non-adversary actions along with information regarding the desired environment and battle damage assessment (BDA). Electro-Optical (EO), Infrared (IR), and Synthetic Aperture Radar (SAR) ISR assets allow global and wide area coverage, but are vulnerable to predictable schedules, and atmospheric or weather impacts.
- Meteorology and Oceanography (METOC) – gives indications of current and future weather (both space and terrestrial) and provides information about efficient electromagnetic settings.
- Space Situational Awareness (SSA) – monitors objects in orbit around the earth and provides early notification of potential collisions that could impact satellites used for other capabilities.
- Shared Early Warning (SEW) – identifies and provides early warning of missile launches to NATO nations.¹

The previously listed space capabilities impact and influence every NATO operation. The criticality and availability of these capabilities define the success or failure of mission accomplishment.

Watch log entry 0903:

- Battle Watch Captain discusses 0827 watch log entry with Space Support Coordination Element (SpSCE)

The SpSCE enables the staff by incorporating space related products and capabilities into the battle rhythm which ultimately inform the commander's decision process. The size and makeup of the SpSCE depends on the staff's task and mission, but is generally made up of a Space Support Coordinator (SpSC), Space Support Staff Officers (SpSSO), and Space Support MOC

Operators (SpSMO). These personnel, even as augmentees, are members of the staff responsible for looking at and providing helpful tips to staff processes from a space perspective. While specific meetings to be attended by the SpSCE will vary from staff to staff, some potential options include the daily Situational Awareness Brief (SAB), the Maritime Targeting Working Group, and the Information Activities Working Group.

The SpSC leads the SpSCE and is responsible for its integration into the staff's battle rhythm. The SpSC also oversees space related staff training and maintains lines of communication with other SpSCEs located within the Joint Force Command and the Component Commands, along with SACT and SHAPE Space Support Officers. This network enables the flow of space related information between staffs and plays a key role in the Space Support Request (SSR) process. As a member of the SpSCE, the SpSC actively attends staff boards, cells, and working groups while providing insight regarding the space capabilities that can influence the commander's decision cycle.

The SpSSO and SpSMO assist the SpSC in their responsibilities and play a key role in staff integration and sharing of space related information. The SpSSO also actively participates in the battle rhythm events while the SpSMO plays a key role in maintaining situational awareness in the Maritime Operations Center (MOC). Both the SpSSO and SpSMO enable the infusion of space related information into the staff's battle rhythm which ultimately impacts mission accomplishment.²

In the event augmentees make up the SpSCE in support of an exercise or operations, they are also responsible for assisting and training the staff's Space Support Officer (SSO) who will remain behind when the augmentees depart the staff. It is incumbent on the SpSCE to share their knowledge and expertise of space capabilities with the SSO who will become the staff's space POC. To further build upon the SSO's Space Support foundational knowledge, he or she should also attend the one-week long Introduction to Space Support to NATO Operations course at the NATO School in Oberammergau held in March and December. According to the course catalog, the



Source: TSGT Joshua Strang

CENTCOM Combined Air Operations Center (CAOC) at Al Udeid Air Base, Qatar.

“aim of this course is to provide students with foundational knowledge of the capabilities, limitations and vulnerabilities of Space assets including the utilization of Space Services and Products by Nations and NATO in crisis and operational activities.”³ The combination of in-class training and exercise or operational experience will prepare the staff’s SSO for future space related opportunities and improve their ability to provide assistance necessary for the commander’s decision cycle.

The combination of the experienced Space Support Coordination Element and the trained staff Space Support Officer is a key enabler to any staff. Their ability to provide insight and knowledge regarding the six space capabilities within the staff’s battle rhythm is critical to the commander’s decision cycle and successful accomplishment of maritime operations.

Watch log entry 1333:

- N6 reports SATCOM jamming that was impacting satellite connectivity has ceased.

Inorganic entities are investigating source of jamming. All SATCOM systems restored.

- N2 reports ISR assets are no longer being dazzled. ISR data feeds available.
- GPS jamming has been discontinued. Quartermasters verified current position via electronic and non-electronic means.
- Space Weather (charged particles) could still impact Meteorology information, but METOC reports are currently available. ☼

1. NATO, NATO Space Handbook, Guide to Space Support in NATO Operations, July 2017, 27-44.
2. NATO Allied Maritime Command, MARCOM Standard Operating Procedure (SOP) Space Support to Operations (draft), May 2018, 2-3.
3. NATO School Oberammergau, Course Catalogue, Introduction to Space Support to NATO Operations, <https://www.natoschool.nato.int/Academics/Portfolio/Course-Catalogue>.

CDR Robert Waggoner is a Staff Officer at CJOS COE in Norfolk, VA.

usff.cjos.coe@navy.mil





“NATO does not want a new Cold War or a new arms race, and we will do all we can to avoid them.”

***Jens Stoltenberg
NATO Secretary General***

AIR DEFENSE IN THE NORTH



Formation of Belgian F-16's and Italian EF-2000's.

Source: NATO

The principle of collective defense, enshrined in Article 5 of the Washington Treaty, widely acknowledged as a true cornerstone of NATO, binds all member Nations to protect each other and sets a spirit of solidarity within the Alliance.

To enforce the principle of collective defense, NATO relies on standing and national forces to contribute to the Alliance's efforts on a permanent basis. These forces train and operate together in peacetime as well as in periods of crisis or conflict. NATO Integrated Air and Missile Defence (IAMD) is an essential continuous mission in peacetime aimed at securing the integrity of the Alliance's airspace

To enforce the principle of collective defense, NATO relies on standing and national forces to contribute to the Alliance's efforts on a permanent basis.

from any air and missile threat, whilst providing deterrence by controlling and exploiting the air domain. It is comprised of Air Defense and Ballistic Missile Defense (TBMD¹ and BMD²) and is often described as a “system of systems”, a

network of interconnected national and NATO sensors, command and control facilities and weapons systems, implemented

through the NATO Integrated Air and Missile Defence System (NATINAMDS) under the authority of NATO's Supreme Allied Commander Europe (SACEUR).

During peacetime whilst enforcing credible deterrence within the Alliance's airspace, Quick Reaction Air (QRA³) scramble⁴ and



respond to any military or civilian aircraft approaching the Alliance's airspace without prior coordination or planning. Typical reasons are: failing to properly identify themselves, communicate with Air Traffic Control agencies or file flight plans. In order to avert hostile acts (such as hijackings), NATO jets routinely intercept, identify and escort such planes as a precautionary measure.

NATO conducts several air policing missions under the oversight and guidance of

and appropriate air assets (fast jets).

In fact, all member nations contribute in some form to NATO's air policing, be it through the use of national aerial surveillance systems, air traffic management, QRA fast jets, or other air defense measures. It is a collective task and a purely defensive mission where NATO members participate alongside a member Nation (as is the case of Bulgaria and Romania) or cooperatively provide⁵ for airspace integrity and security, as is the case of those Allies which don't possess



Source: Italian Air Force

Italian EF-2000's overflying the Icelandic airspace.

Allied Air Command (AIRCOM) and coordinated by NATO's Combined Air Operations Centres (CAOCs) at Uedem, Germany and Torrejon, Spain. AIRCOM's air policing peacetime missions are collective missions which involve the use of the Air Surveillance and Control System (ASACS), Air Command and Control (Air C2)

sufficient resources to guarantee NATO standards of security by themselves (Albania, Luxembourg, Iceland, Slovenia, Latvia, Lithuania and Estonia). NATO assumed the responsibility for the security of the Baltic airspace in March 2004 when Lithuania, Latvia, and Estonia became NATO members. In 2008 the Baltic Region Training



Event series was established to exercise Air Policing in the Baltic region and develop air interoperability including NATO's neighboring Partner Nations Finland and Sweden. Such training events were the precursor of NATO's "Enhanced Air Policing",⁶ which came about as a result of the deterioration in relations between NATO and Russia following the annexation of Crimea by the Russian Federation, the destabilization of eastern Ukraine (Donbass), and its military build-up close to NATO's borders. Over the years, NATO Air Policing missions "up north" have gradually intensified with NATO jets from 16 nations⁷ regularly taking turns in providing Quick Reaction Alert forces for the mission in two strategic locations at Ämari, Estonia, and at Šiauliai, Lithuania. Faithful to the principle of deterring and defending against any threat to the safety and security of our populations, wherever it should arise⁸ NATO is also present in Iceland.

As Iceland does not maintain an air force, the country was left without means to patrol its airspace when the United States Air Force (USAF) withdrew the U.S. Iceland Defense Force from Keflavik Air Base in 2006. Following several airspace violations by Russian aircraft, at the Riga Summit in 2006, Iceland requested that NATO allies assume responsibility for protecting Iceland's airspace. The North Atlantic Council agreed to this request at its July 2007 meeting. The periodic presence of NATO fighter aircraft at Keflavik benefits Iceland's Coast Guard who staff the air traffic control agency that work with and control the various aircraft from the Allies during deployments to the area. Another benefit is to the Allies who participate,⁹ as they deploy their assets to operate in an unknown airspace and environment and are certified by CAOC Uedem to operate at the shortest possible notice, if required by real world events.

As of January 2013, NATO had re-designated the deployments to Iceland as being the "Airborne Surveillance and Interception Capabilities to meet Iceland's Peacetime Preparedness Needs" mission.

In today's evolving security environment with an increasingly belligerent Russia, maintaining a constant presence and an established deterrence posture in the North will guarantee the

Alliance's ability to face any challenge to this critical airspace. As stated at the 2010 Chicago Summit, Allies are committed to contributing to the Air Policing mission and to "bolster deterrence as a core element of our collective defence".¹⁰

1. Theatre Ballistic Missile Defence (TBDM) is defined as "the protection of deployed forces and high value assets/areas within the theatre from attacks by ballistic missiles" – Military Concept for the NATO integrated air and missile defence, 27 Jan2012.
2. Ballistic Missile Defence (BMD) is defined as "all measures to protect territory, populations and forces against the full spectrum of Ballistic Missile Threats" - Military Concept for the NATO integrated air and missile defence, 27 Jan2012.
3. Quick Reaction Air (Intercept) or QRA(I)
4. In military aviation, scrambling is the act of quickly mobilising military aircraft, so as to have them in the air only minutes after the order has been given. The term was first used during the Battle of Britain (1940), when Royal Air Force fighter pilots waited on the ground for radar observations to detect oncoming enemy aircraft. Then, a telephone call would reach each fighter airfield, and those air crews available would be scrambled by the loud ringing of a bell. All scrambles are initiated by a CAOC and conducted with NATO-assigned aircraft.
5. Agreements exist to ensure a single standard of security within NATO's Area of Responsibility.
6. In 2014, with the Wales Summit Declaration, NATO decided to boost already ongoing activities on the northern and eastern flanks of the Alliance (the Baltic Republics, Bulgaria and Romania).
7. Belgium, Czech Republic, Denmark, France, Germany, Hungary, Italy, The Netherlands, Norway, Poland, Portugal, Romania, Spain, Turkey, United Kingdom, United States.
8. From the Chicago Summit declaration
9. Over the past ten years, nine Allies – Canada, the Czech Republic, Denmark, France, Germany, Italy, Norway, Portugal and the United States – have deployed fighter aircraft on the mission in Iceland. Deployments typically last three to four weeks, and take place three times a year.

LTCOL Roberto Patti is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil



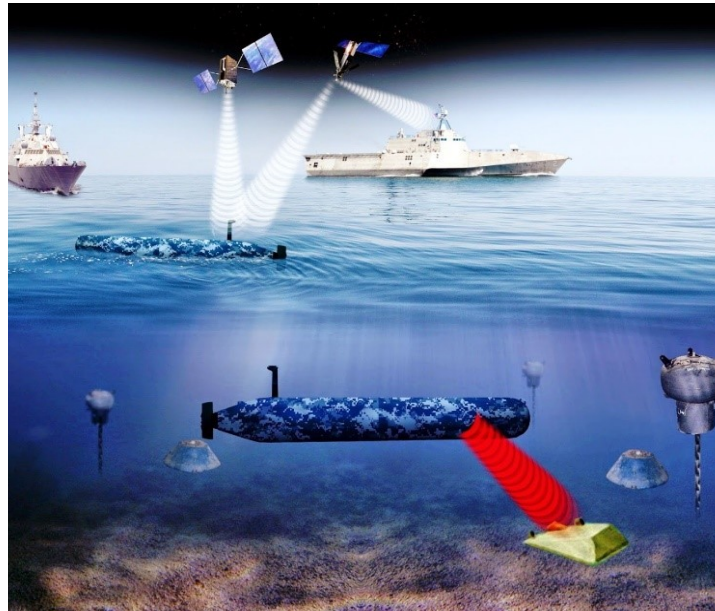


“The use of unmanned systems is a potentially game changing leap forward in maritime technology. They will enable us to be significantly more effective in crucial areas such as detecting and clearing mines, and finding and tracking submarines.”

Press release from NATO signing of declaration of intent to cooperate on the Introduction of Maritime Unmanned Systems

UNMANNED MARITIME SYSTEMS IN THE BATTLE OF THE ATLANTIC

CDR PAVLOS ANGELOPOULOS, HN CJOS COE



Source: US Navy Image

Mine countermeasure UUV Knifefish.⁵

We are witnessing a period of renewed great power competition that draws special attention to the maritime domain. In the current

security environment, where the Russian Federation is trumpeting its ambition to restore the Russian Navy as a blue water force with a permanent presence in different geographic areas of the planet, NATO is forced not only to rethink its strategies but also to adapt its Command and Force structure to the new norm.

The Alliance response to the new challenges includes the establishment of the

NATO Joint Force Command Norfolk (JFCNF), with the mission to defend the North Atlantic in the event of a major crisis. For the new JFC, the success of its mission depends on the ability to

protect the Atlantic sea lines of communication, which are critical for the reinforcement of Europe.

In the effort of doing more with less, unmanned maritime systems (UMS) could provide a great solution and serve as force multipliers.

The Alliance should be ready to fight today and win the new “battle” of the Atlantic. This requires a significant investment in different types of naval assets. As defense budget cuts across most European NATO nations have resulted in the loss



of crucial warfighting capabilities and a dramatic reversal in the trend of decreased defense spending is not expected in the near future, it is now, more necessary than ever, to make plans for the introduction of new systems to carry out the full spectrum of NATO activities in a more cost-effective manner.

In the effort of doing more with less, unmanned maritime systems (UMS) could provide a great solution and serve as force

(UUV). Besides the vehicle itself, a UMS is comprised of the supporting network and all equipment and personnel necessary to launch, recover and most importantly control the vehicle from a remote location.

Despite recent technological developments in the realm of UMSs, these systems are still lacking in maturity compared to the unmanned systems employed in the air domain of operations. This is expected to change due to the increased



Source: DARPA

USV Sea Hunter during sea-trials.⁴

multipliers.¹ In the years to come we will experience an exponential growth of UMSs as these systems provide decision makers with an efficient, stealthy, low-risk, low-cost and high-payoff alternative to high-cost manned maritime platforms.

The term UMS is generally used to describe any vehicle employed on or below the surface of the sea without a human operator aboard. As such, UMS family includes vehicles operating on the surface of the sea, classified as unmanned surface vehicles (USV), as well as vehicles operating most of the time submerged, classified as unmanned underwater vehicles

interest of private companies in unmanned maritime technologies, especially UUVs, as they are fit for a variety of tasks like undersea-cable deployment and inspection, underwater ship inspection and repairs, inspection and monitoring of undersea infrastructure (e.g., pipelines, deep sea oil platforms, etc.) and many more.

With the development of high yielding power supplies, UMSs will become even bigger. They will be capable of carrying a variety of sensors and weapons customized for a wide array of naval missions that are now performed by ships and submarines. Moreover, they will have an increased endurance which for the military



translates to more time on task. A great example of this new approach in naval surface warfare is the development of Sea Hunter, a Medium Displacement Unmanned Surface Vehicle (MDUSV) which could ultimately become an entirely new class of ocean-going vessels able to traverse thousands of miles over open seas for months at a time without a single crew member aboard.^{2,3} A fleet of USVs like Sea Hunter could provide persistent maritime intelligence, surveillance and reconnaissance (MISR) in the Atlantic, at a fraction of the cost compared to manned platforms performing the same tasks. USVs are perfectly fitted to assist in building a comprehensive maritime situational awareness, enabling a plethora of traditional navy missions like mine countermeasures (MCM) and anti-submarine warfare (ASW) to be performed by USVs.

UMSs have already proven their operational effectiveness in mine countermeasure (MCM) missions. They are highly capable in the detection, classification, localization, and neutralization of mines without putting the ship's crew in harm's way. The reinforcement of Europe with troops and supplies from North America will depend on ship convoys. UMSs could be effectively tasked to minimize the mine threat providing a clear passage for the reinforcements to reach Europe and safe operating areas for Allied navies.

The existing UMSs, depending on their technical characteristics and mission requirements, operate under different levels of autonomy. They could be fully-autonomous (i.e., no human supervision or intervention required), semi-autonomous (i.e., human supervision/assistance is required in some of the activities performed by the UMS), or human-operated (i.e., remotely operated with no level of autonomy). With the ongoing research and developments in advanced processing technologies, machine learning and artificial intelligence (AI), the future trend in the design of military UMSs is destined to be towards more autonomous vehicles enabling them to operate in a denied environment far away from their mother ships, launch platforms or shore bases. The increased presence of Russian submarines around vital undersea infrastructure in

the North Atlantic, such as the data cables connecting North America with Europe, is a new serious threat for NATO. Long endurance autonomous vehicles provide new ASW capabilities that should be exploited to the fullest extent to successfully counter the resurgence of Russian underwater activity in the Atlantic.

Scientific research in unmanned maritime technologies is bearing fruits and new systems are being developed at an accelerated pace. As these systems start to proliferate the maritime battlespace, there is a need for development of new NATO doctrine to describe specific tactics and procedures for the use of these systems as well as for the prevention of mutual interference with other Navy assets. There is also a need for increased integration and interoperability of UMSs with existing manned systems to achieve greater efficiency and affordability.

The use of UMSs across the full spectrum of naval warfare will eventually become a reality. NATO should be prepared to take advantage of these new capabilities as they provide a great solution to some diminished warfare capabilities, especially in ASW. Expensive naval platforms will be replaced partly by a number of unmanned maritime systems capable of operating at a reduced cost and minimized mission risk. The operational environment in the Atlantic is the perfect test bed to try out these systems, especially in some persistent Navy missions like ISR and ASW. ❁

1. In some NATO documents the abbreviation MUS (maritime unmanned systems) is also used to describe these systems.
2. Sea Hunter was developed by the Defense Advanced Research Projects Agency (DARPA) under the Anti-Submarine Warfare (ASW) Continuous Trail Unmanned Vessel (ACTUV) program. <https://www.darpa.mil/news-events/2018-01-30a>
3. <https://www.darpa.mil/news-events/2018-01-30a>
4. Image taken from the DARPA website: <https://www.darpa.mil/news-events/2018-01-30a>
5. <https://news.usni.org/2018/06/05/navys-knifefish-unmanned-mine-hunter-passes-key-test>

CDR Pavlos Angelopoulos
is a Staff Officer at CJOS
COE in Norfolk, VA.
usff.cjos@navy.mil





“This changing force is complemented by a series of interlocking coastal defence missiles, land-based aircraft and air-defence systems. As a result, Russia now has counter-power-projection bastions from which its forces can operate in an attempt to threaten North Atlantic sea lines of communication and populations, unless we prevent them from doing so.”

James G Foggo and Alarik Fritz

THE NEXT BATTLE OF THE NORTH ATLANTIC

CDR GEIR HESTVIK, RNON
CJOS COE



Source: NATO

Royal Netherlands HNLMS Karel Doorman sails in a Norwegian fjord.

Safe and secure Sea Lines of Communication (SLOC) across the North Atlantic have been very important for the Western Allies during two World Wars and the Cold War. Today we see that a resurgent Russia might be a potential threat to future peace and stability and potentially able to challenge the safe and secure SLOC. This does not mean that a conflict between Russia and NATO is considered likely, but recent aggressive actions by Russia such as the invasion of Georgia, the annexation of Crimea and military operations in Syria demonstrates Russian will and an ability to use military forces to gain political goals.

After the Cold War ended and the disbandment of the Warsaw Pact, a military decline/disarmament started within all NATO countries. The NATO Alliance changed focus to out of area operations, counter insurgency and anti-terrorism operations, and there was no longer a

need for large standing military forces. In the maritime domain from 1990 to 2017, NATO member countries reduced the number of fighting ships by 7 aircraft carriers, 23 cruisers, 134 submarines, 138 destroyers/frigates and 117 Corvettes/Fast Patrol Boats.^{1,2}

The former Soviet Union (USSR), today's Russian Federation, also reduced their standing military forces significantly after the Cold War. From 1990 to 2017, the overall number of fighting ships were reduced by 4 aircraft carriers, 259 submarines, 30 cruisers and 194 destroyers/frigates.^{3,4} However, in the period from 2008 to 2017 it appears that the Russian capability development changed.^{5,6} The overall numbers of submarines (+10) and corvettes (+18) and Fast Attack Crafts/Patrol (+118) increased. Many of these ships are relatively small, but they are modern, technologically advanced and well-armed. As an example, the new Russian subma-



rines are considered some of the most silent and lethal submarines in the world, and as ADM James G. Foggo SACEUR and Alarik Fritz wrote in a recent article about Russia's forces:

*This changing force is complemented by a series of interlocking coastal defence missiles, land-based aircraft and air-defence systems. As a result, Russia now has counter-power-projection bastions from which its forces can operate in an attempt to threaten North Atlantic sea lines of communication and populations, unless we prevent them from doing so.*⁷

The number of merchant ships world-wide is increasing rapidly and the ships are getting larger. In 2005, the world merchant fleet reached a total of 600,614 Gross Tonnage (GT), with 61,227 ships above 500 GT.⁸ In 2016, the world merchant fleet reached a total of 1,270,285 GT, with 89,804 ships above 500 GT.⁹ NATO countries still own a significant amount of merchant ships, but this strategic

edge seems to be reduced. This could weaken the ability to sustain the unobstructed use of important SLOC without relying on nations outside of the Alliance, and in times of conflict or war it cannot be ruled out that merchant ships with complex or concealed ownership construct or crew members from several nations will not agree or comply with directions from its ship's owner or ship owning countries.

Since the Cold War the strategic landscape has changed drastically. The old Warsaw Pact consisted of USSR and seven other states (Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania and Soviet Union), but today the former USSR is divided into 15 states, and many of the former Warsaw Pact member states have joined the NATO Alliance and/or the European Union, for example Bulgaria, Hungary, Poland and Romania. During the Cold War, the USSR and the USA were much more powerful than the other countries in the world, but

after this age of a bipolar world order, three decades with a USA-unipolar world order followed. Today we see that a bipolar world order is re-established but now with USA and China as the leading nations.¹⁰ However, other countries like India, Pakistan and a resurgent Russia are working to increase their influence, status, and national power and in the future we may see it develop into a multipolar world order.

After the Cold War, the number of NATO members increased from 16 countries (1991) to 29 countries (2018) and the number of European Union (EU) countries increased from 12 countries (1991) to 28 countries (2018) before Brexit.^{11,12} Both the "New NATO" and "New EU" includes former Warsaw Pact countries like Bulgaria, Hungary, Poland and Romania. With the new

...the number of NATO members has increased from 16 countries (1991) to 29 countries (2018) and the number of European Union (EU) countries has increased from 12 countries (1991) to 28 countries (2018)...

member states, NATO increased the potential for soldiers under arms and resources

available, but it has also increased the geographical area that needs to be monitored, safeguarded, and protected. With more member states it could also be more difficult to achieve consensus within the Alliance.

The geography for the next battle of the Atlantic has changed very little. The Greenland-Iceland-United Kingdom gap (GIUK-gap) is still a very important area. Controlling this area denies potential submarine threats against the SLOC between North America and Europe. However, some political and economic circumstances may have the potential to adversely affect the future strategic landscape for NATO. The circumstances potentially in question are autonomy for Greenland, Iceland leaving NATO, and compliance with the Svalbard treaty in a way that does not threaten NATO SLOC and harms NATO's cohesion.

Today Greenland is part of the Kingdom of Denmark. Currently there are no signs that this should not continue, but if Greenland should



decide to leave and gain autonomy, it is not necessarily certain that Greenland will remain a NATO member. Another potential challenge could be Iceland. Iceland, with its airbase, is vital for Anti-Submarine Warfare (ASW) in the GIUK-gap. Without the airbase on Iceland, time on station for Maritime Patrol Aircraft would be drastically reduced and it would be very demanding to maintain proper ASW surveillance. Iceland is a NATO member, and is likely to remain so in the foreseeable future, but lately there has been a domestic debate on Iceland about the future of Iceland's NATO membership, and if Iceland or

dispute between the EU and Norway on the interpretation of what associated waters means.¹³ Should it be interpreted as the 12 nautical mile territorial waters, the 200 nautical mile economic zone or the whole continental shelf including the seabed? The final outcome of this case will have economic impact for EU and Norway but this could also create wedge-issues between NATO countries, and increased access to the area by non-NATO countries. From an EU point of view increased access to natural resources in the Arctic is good but from a NATO military perspective, the potential of having all the Svalbard treaty



Listening post and Norwegian coast guard in Svalbard, Norway.

Source: Neil Moralec

Greenland would decide to stay outside the NATO Alliance this would make protection of the SLOC across the Atlantic much more demanding. Norway's jurisdiction and interpretation of the Svalbard treaty could also be a potential problem for NATO. According to the Svalbard treaty, Norway has jurisdiction over the group of islands, but all the nations who sign the treaty have equal rights to the natural resources on Svalbard and in the associated waters. Currently there is a legal

signatory nations, more than 40 countries, gaining equal access to natural resources in a wide area around the Svalbard, including possible infrastructure developments at sea, could be strategically undesirable and potentially create wedge issues between Norway and other NATO countries.¹⁴

The reduced ice cover in the Arctic is opening new transit routes between Asia and Europe and it makes access to the natural resources easier. Another aspect, is the possible



increased vulnerability for Russian military forces. With the receding ice, Russia's strategic submarines may be more exposed and easier to locate. The Russian Arctic coast is more open and more easy to access and in addition, there is an



Source: NATO

U.S. Marines traverse arctic terrain near Moen, Norway.

increased of merchant traffic between Asia and Europe. This may increase the possibility for familiarization and exploration of the Russian littorals in the Arctic and increase western knowledge of the area and Russian military forces.

The next Battle of the Atlantic has several new aspects that need to be considered thoroughly. Currently there are fewer warships available than during the Cold War, but warships today are more technologically advanced and in many cases they have a much more robust and capable suite of weapons and sensors. However, NATO's technological edge seems to be reducing. As mentioned, the world's merchant fleets are increasing and with more and larger merchant ships there are more concealed ownership structures than during WW I and WW II. The ships crews today consist of personnel from a wide variety of nations which could make it more difficult to utilize ships taken up from trade in the next Battle of the Atlantic. The strategic landscape has changed. The world has gone from unipolar to a bipolar world order and it may further develop into a multipolar world order. NATO and the EU have expanded, adding several nations, but there are also possible political and economic topics that could create wedge issues

between the NATO countries in the future. Climate change has opened up new opportunities in the Arctic, but it could also pose a potential vulnerability for Russian armed forces. ❄️

1. Sharp, Richard. 1990. *Jane's Fighting Ships 1990-1991*. Jane's Information Group.
2. Saunders, Stephen. 2017. *Jane's Fighting Ships 2017-2018*. HIS Markit.
3. Sharp, Richard. 1990. *Jane's Fighting Ships 1990-1991*. Jane's Information Group.
4. Saunders, Stephen. 2017. *Jane's Fighting Ships 2017-2018*. HIS Markit.
5. Saunders, Stephen. 2008. *Jane's Fighting Ships 2008-2009*. Cambridge University Press.
6. Saunders, Stephen. 2017. *Jane's Fighting Ships 2017-2018*. HIS Markit.
7. James G Foggo & Alarik Fritz. 2018. *NATO and the Challenge in the North Atlantic and the Arctic*. <https://www.tandfonline.com/doi/full/10.1080/02681307.2018.1508970>
8. European Maritime Safety Agency. 2005-2016. <http://emsa.europa.eu/news-a-press-centre/external-news/item/472-annual-statistical-report-on-the-world-merchant-statistics-from-equasisics-from-equasis.html>
9. European Maritime Safety Agency. 2005-2016. <http://emsa.europa.eu/news-a-press-centre/external-news/item/472-annual-statistical-report-on-the-world-merchant-statistics-from-equasisics-from-equasis.html>
10. Øystein Tunsjø. 2018. *The Return of Bipolarity in World Politics*. Columbia University Press. New York: 179-181
11. Estonian Atlantic Treaty Association. 2018. <http://www.eata.ee/en/nato-2/nato-member-states/>
12. European Union. 2018. https://europa.eu/european-union/about-eu/countries/member-countries_en
13. Thomas Nilsen. 2018. *The Independent Barents Observer*. Norway and EU clash over rights to resource-rich waters around Svalbard. <http://www.rcinet.ca/eye-on-the-arctic/2018/07/18/svalbard-norway-european-union-fishing-sovereignty-treaty-law/>
14. The Arctic Institute. 2017. <https://www.thearcticinstitute.org/norwegian-svalbard-policy-respected-contested/>

CDR Geir Hestvik is a Staff Officer at CJOS COE in Norfolk, VA.
usff.cjos.coe@navy.mil





“You can’t surge interoperability and trust.”

***Vice Admiral Lisa Franchetti
Commander, U.S. 6th Fleet
Commander, STRKFORNATO***

POWER PROJECTION IN THE MODERN-DAY MARITIME DOMAIN

**LCDR GRAIG
DIEFENDERFER, USN
SFN**



Source: WO Fran C. Valverde

Exercise Trident Juncture 2018.

Once home to famous explorers such as Bartolomeu Dias, Vasco da Gama, and Ferdinand Magellan, Portugal was instrumental in the maritime exploration and globalization conducted hundreds of years ago. Today, as the home to Naval Striking and Support Forces NATO (STRIKFORNATO), Portugal remains a key location for maritime advancement and stability. Headquartered in Oeiras, Portugal, STRIKFORNATO serves as the Alliance’s premier, rapidly deployable and flexible, maritime power projection force. Located near the starting point for many expeditions in the Age of Exploration, this site now serves as the starting point for the Alliance’s maritime response force in a time of crisis.

Civilization has relied on the seas to sustain trade, provide travel, and pursue resources for thousands of years. With about 40% of the world’s population living within 100 km of the

coast and shipping accounting for more than 90% of trade between countries, our reliance on the sea will last for the foreseeable future.¹ A strong maritime presence with ability to establish sea control is necessary to prevent disruptions and respond to changing threats. As a flexible and versatile maritime headquarters, STRIKFORNATO plays a key role in this for the Alliance. Founded in 1953 as Naval Striking and Support Forces Southern Europe (STRIKFORSOUTH) in Naples, Italy, the original purpose of the command was to respond to emergencies in the Mediterranean theatre. Changing its name to STRIKFORNATO in 2004, and later relocating to Portugal in 2012, responsibilities broadened to cover NATO’s entire operating area. Reporting directly to Supreme Allied Commander Europe (SACEUR), today the command provides NATO’s strategic headquarters with a credible power projection force, capable of being scaled to



meet the desired demand. This flexibility and versatility is demonstrated in STRIKFORNATO's three core missions: NATO Expanded Task Force (NETF), Joint Headquarters Maritime/Expeditionary (JHQ(M/E)), and Maritime Ballistic Missile Defence (BMD).

At the high-end of the spectrum, STRIKFORNATO can serve as an NETF, nominally during a collective defence, maximum level of effort response. In this role, STRIKFORNATO will have command and control of multiple strike groups (i.e. Carrier Strike Groups, Expeditionary Strike Groups, or a combination thereof) to influence operations from the sea. While the forces provided could be from any Alliance member, a unique feature of STRIKFORNATO's command structure is that the Commander of STRIKFORNATO also serves as the Commander of U.S. SIXTH Fleet. This enables a seamless integration of high-end U.S. Navy and Marine Corps forces into a NATO operation.

Below a response at the NETF level, STRIKFORNATO can serve as a JHQ(M/E) to counter a small, joint, non-Article V, out-of-area crisis situation. The level of response can be tailored to the required

mission, with the Commander selecting an appropriately sized and experienced staff to lead the efforts. This versatility enables SACEUR to call on a single command to execute a wide variety of missions in the maritime domain, greatly simplifying the decision process at the strategic level.

The third primary mission for STRIKFORNATO is having operational control of Maritime BMD assets when transferred to NATO. Achieving full operational capability in 2016, the missions and responsibilities in this role continue to evolve. Supporting the Commander of Allied Air Command, STRIKFORNATO integrates and sustains Alliance maritime BMD forces into the overall NATO BMD mission. Although a more specialized role, STRIKFORNATO is uniquely suited to perform this task due to the Command-

er's linkage with U.S. SIXTH Fleet and its associated BMD-capable ships and assets.

Outside of these missions, in a peacetime environment STRIKFORNATO conducts planning, training, and liaising in a wide variety of areas. Involvement in exercises for training or certification is also prominent, including BALTOPS, TRIDENT JUNCTURE, TRIDENT JUPITER, and FORMIDABLE SHIELD exercise series, to name a few. In addition, the staff continuously remains on a short notice to move, where they can be called upon to begin preparations and deploy for an operation within five days. An immediate response can be commanded directly from the Joint Operations Centre at the headquarters, while a prolonged or large-scale response would likely be executed at sea from its afloat command platform, the USS MOUNT WHITNEY.

Unlike NATO Command Structure (NCS) elements, as a NATO Force Structure (NFS) element, STRIKFORNATO does not receive common funding or personnel contributions from

all NATO nations. Instead, it is a Memorandum of Understanding (MOU) organisation, comprised of twelve member nations: France, Germany, Greece,

Italy, the Netherlands, Norway, Poland, Portugal, Spain, Turkey, the United Kingdom, and the United States. Each MOU nation contributes personnel with the requisite expertise to support planning and execution of the command's core roles. Manned at approximately 110 permanent staff members, crisis response relies on reinforcements from member nations and the broader NATO community to elevate staff numbers to around 400 personnel at full scale.

While the recent changes from NCS Adaptation will help maximize the overall deterrent effects of NATO forces in the maritime domain, most notably in the establishment of Allied Joint Force Command Norfolk (JFCNF) and the reinforcement of Allied Maritime Command (MARCOM), STRIKFORNATO will not see any direct changes because of its status as

Headquartered in Oeiras, Portugal, STRIKFORNATO serves as the Alliance's premier, rapidly deployable and flexible, maritime power projection force



Source: MC2 James R. Turner

STRIKFORNATO staff embarked on USS MOUNT WHITNEY during Exercise Trident Juncture 2018.

an NFS element. Despite this, STRIKFORNATO continues to offer unique capabilities to the Alliance. While JFCNF's mission will be focused on the Atlantic region, STRIKFORNATO is able to be deployed across SACEUR's entire maritime operating area to act as a deterrent or deliver joint effects from the sea as part of the Alliance's collective defence. Furthermore, while MARCOM remains the central command of all NATO maritime forces during Baseline Activities and Current Operations (BACO) and serves as the primary maritime advisor to the Alliance, only STRIKFORNATO provides a U.S. chain of command for integrating high-end U.S. Navy and Marine Corps forces into a NATO operation. These characteristics are unique to STRIKFORNATO and provide SACEUR greater capability when conducting military operations to meet Alliance objectives.

The maritime domain has been of great importance to civilizations for thousands of years. From ancient trade to new-world exploration, utilization of the sea has been vital for advance-

ments in society. Adapting to evolving challenges in the modern domain remains essential for continued prosperity. Flexible and versatile, STRIKFORNATO is a key component in the Alliance's present-day operations for maritime supremacy. 🌀

1. "The Ocean Conference Factsheet: People and Oceans," United Nations, accessed 15 February 2019, <https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf>.

LCDR Diefenderfer is a Staff Officer at STRIKFORNATO in Lisbon, POR.
g.diefenderfer@sfn.nato.int





CJOS activities are guided by a programme of work (PoW) approved by the sponsoring nations based upon requests received by NATO, CJOS member countries, and other entities. CJOS is open to requests for support by any organization. Requests received will be considered for inclusion in the PoW based upon alignment to CJOS interests and those of the sponsoring nations and NATO. The 2019 CJOS PoW is listed below:

Joint Sea Based Operations	Support ongoing activities related to the Multinational Capability Development Campaign (MCDC)
Comprehensive MSA Mechanism	Support to ACT's Program on Autonomy
Logistics Support for Amphibious Operations in the Atlantic	NATO Maritime Surveillance Concept
Dual Use of Military Defense Capabilities for non-military purposes (DuMDC)	NATO Maritime Operations Concept
Joint Military Operations in the Urban Environment Concept	Joint Combined Sea basing Working Group Support
ASW EXTAC	Develop Maritime ISR Doctrine
Support JFCNF Development	MAROPS WG
Disruptive Technologies	IAMD Conference
UAS Integrations into Maritime Environment	Lessons Learned Process
NATO Maritime Availability Database	Participate in Campaign Plan for Amphibious Operations Training
Maritime Capacity Building	ACT Maritime S&T Programs - Outputs Acceptance Support
All Dimension ASW Concept	Interoperability Advisory Group (IAG)
NATO Future ASW Concept	Long Term Military Transformation PoW SFA/FFAO
NDPP Step 2	Maritime Ops Discipline Conference
Support 2nd Fleet Development	AMPHIBOPS WG
Follow on to NAEW E3 AWACS	Multinational Maritime Information Services Interoperability Board (M2I2)
Area Denial	Cutting the Bow Wave Annual Review
Expeditionary Operations Doctrine	ODU Lecture Series
Big Data	CJOS Liaison to ODU/Romanian Defense University
BALTOPS Exercise	CJOS Liaison to NWDC
TRJU19-1 MPC (Main Planning Conference)	Technological Watch
TRJU19 -1 MEL/MIL Strategy Workshop 1	Geographic Horizon Scanning
TRJU19-1Phase IIB	Primary Maritime Advisor to COMSACT
Maritime Cyber Security Afloat	Provide Alliance Maritime Interoperability Advice/ Support to MARCOM
Future Maritime Threats	Reinforce the MSA Network (MSA Information Sharing)
Alliance's Reinforced Maritime Posture follow-on Tasking	
Interoperability Guide Update	
Amphibious Leadership Expeditionary Symposium (ALES)	



CENTRE OF EXCELLENCE FACT SHEET

A COE is a nationally or multi-nationally sponsored entity, which offers recognized expertise and experience to the benefit of the Alliance, especially in support of transformation. COEs are not part of the NATO command structure, but form part of the wider framework supporting NATO Command Authority. They support transformation through Education and Training, Analysis of Operations and Lessons Learned, Concept Development and Experimentation, and Development of Doctrine and Standards. ❁



There are 25 NATO accredited COEs:

Joint Air Power Competence Centre (JAPCC/DEU)

<http://www.japcc.org>

Defense Against Terrorism (DAT/TUR)

<http://www.coedat.nato.int>

Naval Mine Warfare (NMW/BEL)

<http://www.eguermin.org>

Combined Joint Operations from the Sea (CJOS/USA)

<http://www.cjoscoe.org>

Civil Military Cooperation (CIMIC/NLD)

<http://www.cimic-coe.org>

Cold Weather Operations (CWO/NOR)

<http://www.forsvaret.no/en/education-and-training/coe-cwo>

Joint Chemical, Biological, Radiological &

Nuclear Defense (JCBRND/CZE)

<http://www.jcbrncoe.cz>

Air Operations (AO/FRA)

<http://www.caspoa.org>

Command & Control (C2/NLD)

<http://c2coe.org>

Cooperative Cyber Defense (CCD/EST)

<http://www.ccdcoe.org>

Operations in Confined & Shallow Waters (CSW/DEU)

<http://www.coecsw.org>

Military Engineering (MILENG/DEU)

<http://milengcoe.org>

Military Medicine (MILMED/HUN)

<http://www.coemed.org>

Human Intelligence (HUMINT/ROU)

<http://www.natohcoe.org>

Counter - Improvised Explosive Devices (C-IED/ESP)

<http://www.ciedcoe.org>

Explosive Ordnance Disposal (EOD/SVK)

<https://www.eodcoe.org>

Modeling and Simulation (M&S/ITA)

<https://www.mscoe.org>

Energy Security (ENSEC/LIT)

<http://enseccoe.org>

Military Police (MP/POL)

<http://www.mpcoe.org>

**Crisis Management & Disaster Response
(CMDR COE/BGR)**

<http://cmdrcoe.org>

Mountain Warfare (MW/SVN)

<http://mwcoe.org>

Stability Policing (SP/ITA)

<http://nspcoe.org>

Counter Intelligence (CI/POL)

<http://www.cicoe.org>

Strategic Communications COE (STRATCOM/LVA)

<http://www.stratcomcoe.org>

Security Force Assistance (SFA/ITA)

<http://www.esercito.difesa.it>



CJOS COE STAFF DIRECTORY

NAME	POSITION	TELEPHONE # +1 (757) 836-EXT DSN 836-EXT
------	----------	--

STAFF HEADQUARTERS

VADM Bruce Lindsey, USN	Director	2997
CDRE Tom Guy, RN	Deputy Director	2452
CDR Antonio Ting, USN	Fiscal Officer	2457
LT Jesse Nerius, USN	Flag Aide	2452
CDR Jarrod Mosley, USN	Directorate Coordinator	2611
YN1 Shannel Blake, USN	Administrative Assistant	2453

WARFARE ANALYSIS BRANCH

CAPT Todd Bonnar, RCN	Branch Head	2450
CDR Joerg Maier, DEUN		2464
CDR Robert Waggoner, USN		2463
CDR Jose Garza, USN		2462
CDR Geir Hestvik, RNON		2440
CDR Jorge Martinez, SPN		2442
CDR Neculai Grigore, RON		2451
LCDR Hatice Gomengil, TUN		2466
LCDR Jeremy Huls, USN		2429
ITCS Stephen Wheeler, USN		2467

DOCTRINE DEVELOPMENT BRANCH

CAPT Bruno Scalfaro, ITN	Branch Head	2449
CDR Pavlos Angelopoulos, HN		2537
CDR Jean-Yves Martin, FRN		2446
CDR Jose Conde, PRTM		2444
CDR Josh Heivly, USN		2454
LTCOL Jos Schooneman, RNLM		2443
LTCOL Roberto Patti, ITAF		4080
CDR Robert DiNunzio, USN		2445
WO1 Jack Cuthbert, RM		2960

Mailing Address:
CJOS COE
1562 Mitscher Ave. STE 250
Norfolk, VA 23551
USA

CJOS COE





TRANSFORMING ALLIED MARITIME POTENTIAL INTO REALITY

