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# Unlocking NATO's Amphibious Potential

## Lessons from the Past, Insights for the Future

**N**orth Atlantic Treaty Organization (NATO) members maintain amphibious capabilities that provide versatile and responsive forces for crisis response and national defense. These forces are routinely employed in maritime security, noncombatant evacuation operations (NEO), counterterrorism, stability operations, and other missions. In addition to U.S. Marine Corps (USMC) and U.S. Navy forces, the Alliance's amphibious forces include large ships and associated landing forces from five nations: France, Italy, the Netherlands, Spain, and the United Kingdom (UK). Each of these European allies—soon to be joined by Turkey—can conduct brigade-level operations, and smaller elements typically are held at high readiness for immediate response.<sup>1</sup> These forces have been busy. Recent exercises and operations have spanned the littorals of West and North Africa, the Levant, the Gulf of Aden and Arabian Sea, the Caribbean, and the Pacific.

Given NATO's ongoing concerns over Russia's military posture and malign behavior, allies with amphibious capabilities have also been exploring how these forces could contribute to deterrence or, if needed, be employed as part of a

combined and joint force in a conflict against a highly capable nation-state. Since 2018, NATO's headquarters and various commands have undertaken initiatives and convened working groups to advance the political intent of reinvigorating high-end maritime warfighting.<sup>2</sup> The RAND Corporation has conducted research in support of these planning efforts at NATO and U.S. Marine Corps Forces Europe and Africa (Germanovich et al., 2019). In

### Abbreviations

ARG	Amphibious Ready Group
C2	command and control
CV	aircraft carrier
ESG-2	Expeditionary Strike Group-Two
ISR	intelligence, surveillance, and reconnaissance
JEF	Joint Expeditionary Force
LHD	landing helicopter dock
LPD	landing platform dock
LSD	landing ship dock
LSD-A	landing ship dock (auxiliary)
MEU	Marine Expeditionary Unit
NATO	North Atlantic Treaty Organization
NEO	noncombatant evacuation operations
UK	United Kingdom
UKNLAF	United Kingdom Netherlands Amphibious Force
USMC	U.S. Marine Corps
SFN	Naval Striking and Support Forces NATO

some respects, NATO's ongoing efforts harken back to the Cold War, when NATO's amphibious forces routinely exercised in the Mediterranean and North Atlantic as part of a broader strategy to deter Soviet aggression.

Like other military capabilities within the Alliance, NATO's collective amphibious force posture depends primarily on the sum of individual national developments. The USMC recently initiated efforts to radically change its operating concept and force structure. With his 2019 planning guidance and subsequent actions, the Commandant of the Marine Corps seeks to transform the world's largest and most potent amphibious force from one focused on assaults from the sea to one that contributes more broadly to the maritime missions of sea control (precluding an adversary's use of sea- and airspace in a particular region) and sea denial (constraining an enemy's access). This new operating concept is another topic of ongoing RAND research. In the UK and the Netherlands, related but distinct concepts are also being explored.

In light of these developments, this Perspective examines the past, present, and future of NATO's amphibious forces. Both the historical and recent employment of these forces offer pertinent lessons for unlocking their full potential and reimagining operational concepts to address the evolving threat landscape in a new era of great power competition.

## The Past

During the Cold War, NATO maintained a high level of amphibious interoperability and readiness in support of the Alliance's strategy. Amphibious capabilities provided a valuable messaging tool that NATO used to compete

with the Soviet Union and made tangible contributions to deterrence. After the Soviet Union fell, NATO's amphibious forces remained relevant and were employed in a wide array of both maritime and land operations.

## Amphibious Forces in NATO's Cold War Strategy (1949–1991)

### Responding to Evolving Strategic Requirements and Plans

Amphibious forces played a key role in NATO defense planning from the outset of the Cold War. In 1949, the U.S. Joint Chiefs of Staff drafted a plan that envisioned “the Northern Flank as one of the active theaters of a possible war with the Soviet Union” (Allard, 2001, pp. 12–13). It called for deploying amphibious and other naval forces to repel expected Soviet invasions of Iceland and northern Norway, including the Svalbard archipelago in the Arctic Ocean. Although this plan was not formally adopted, the view of the *High North* as an important strategic theater was reflected in the Alliance's early activity.<sup>3</sup> For example, NATO's 1952 Operation Mainbrace (a major naval exercise near Norway and Denmark) featured amphibious operations along the coastlines of the Barents, Norwegian, North, and Baltic seas (Allard, 2001, p. 13; Lehman, 2018, p. 27).

As the Cold War proceeded, the Mediterranean Sea and NATO's southern flank became a focal point of allied naval activity (Grove and Till, 1989, pp. 278–279; Allport, 2018, pp. 9–10). Both NATO and the Soviet Union viewed the Mediterranean as a pivotal operational area, serving as a potential launch point for carrier-based aviation and providing freedom of movement for surface ships

and submarines, vital components of nuclear deterrence (Grove and Till, 1989, pp. 278–295; Mahnken, 2017, pp. 8–12; Marine Corps University, undated; O'Ballance, 1955, pp. 94–95). The Alliance also understood the need to assure its southern members—Italy, Greece, and Turkey—that it could respond to aggression within or adjacent to their region (O'Ballance, 1955; Marine Corps University, undated). This imperative translated into large-scale amphibious exercises—often involving multinational landing forces—focused on controlling the region's key choke points and retaking territory if necessary.<sup>4</sup>

Beginning in the late 1970s and continuing through the 1980s, NATO underwent a major shift in maritime thinking, moving from largely defensive concepts to a more forward posture. The Alliance's 1981 *Concept of Maritime Operations* and subsequent *U.S. Maritime Strategy* emphasized active defense and offensive operations along NATO's northern and southern flanks, presenting the Soviet Union with the threat of an expansive, theater-wide conflict should it attack along NATO's central front (Allport, 2018, p. 10; Wood, 1988, p. 96). Amphibious forces were integral to this new posture: They offered the speed and flexibility to reinforce allied troops prior to a conflict and, if deterrence failed, to launch raids and assaults against Soviet forces attempting to operate from captured NATO territory (Mustin, 1986; Smith, 1984, pp. 30–37). This vision of modern amphibious warfare demanded that NATO train to a higher level of interoperability and created the opportunity to display the new, more assertive posture.

The biannual Teamwork exercise tested the ability of NATO navies to reinforce northern Europe and prevent the Soviet Northern Fleet from freely accessing the Norwegian Sea and North Atlantic (Smith, 1984, pp. 30–37). The

exercise involved the U.S. 4th Marine Amphibious Brigade and the UK Netherlands Amphibious Force (UKNLAF), along with Norwegian national forces. Teamwork, in 1984, featured the largest combined landing above the Arctic Circle: 11,000 marines and sailors and 3,000 UKNLAF troops (Smith, 1984, p. 37). The Northern Wedding and Bold Guard series of linked exercises rehearsed reinforcing and retaking Baltic approaches and coastal territory (Melhuish, 2017, p. 1). At its height, Bold Guard involved almost 60,000 troops (Thurman, 1978, pp. 34–37). Figure 1 shows the location of and participants in NATO’s major amphibious exercises during the Cold War.

### Contributing to the Cold War Competition

NATO’s demonstrations of amphibious capabilities presented the Soviet Union with dilemmas and arguably amplified the strength of the Alliance’s total deterrent. A U.S. government analysis of Cold War Soviet military journals maintained that recurring NATO exercises were considered by the Soviet military to be “practice runs” for actual wartime plans (Central Intelligence Agency, 1986, p. 13). In his 1989 correspondence with the U.S. Naval Institute, Admiral Vladimir Chernavin, Chief of the Soviet Navy, asserted that “The U.S. Navy now has three divisions of Marines fully prepared for operations which . . . can be landed at Nordkapp, in the eastern part of the Baltic Sea, on the Coast of the Black Sea, on the Kuril Islands, or on Sakhalin” (Chernavin, 1989). As the demonstration of NATO’s amphibious capabilities became larger in scope and scale, Soviet armed forces continued to make concrete investments in force structure to defend littoral terrain. Soviet military journals highlighted an enhanced doctrine for antilanding defense (Chernavin,

1989). By 1988, Soviet military press reported that “regular ground forces were now conducting defensive antilanding defense exercises . . . keyed specifically to the new Soviet defensive doctrine” (Lehman, 2018, p. 223). According to a U.S. intelligence review of Soviet military actions in the 1980s, the Soviets created “a unique Soviet Naval Infantry [SNI] brigade on the Kola peninsula to repel amphibious landings—probably a direct response to the U.S. Navy’s new forward maritime strategy” (President’s Foreign Intelligence Advisory Board, 1990, p. 65).

NATO’s Cold War development, maintenance, and demonstration of a collective amphibious capability not only strengthened interoperability and cohesion within the Alliance but also provided a valuable messaging tool that influenced the adversary’s calculus and contributed to deterrence.

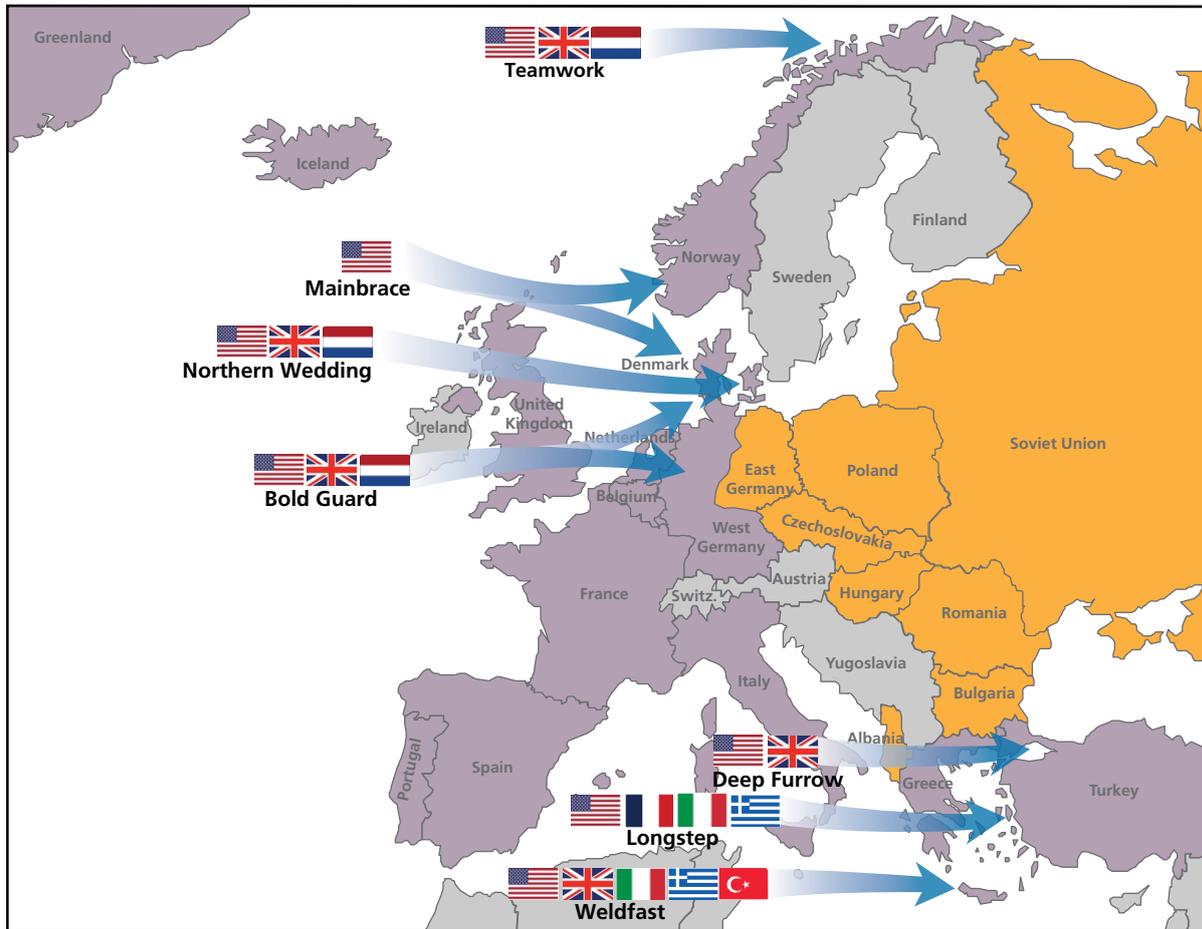
### Post–Cold War (1991–2014)

Following the Cold War, NATO reduced its emphasis on large-scale, collective amphibious capabilities as it reoriented to a strategic environment that it perceived as less competitive. However, the utility of national amphibious forces to the Alliance did not diminish. Indeed, their relevance arguably increased: Between 1990 and 2014, NATO nations frequently employed amphibious forces to respond to a wide variety of crises reflective of a constantly morphing international security environment.

### Responding to Disasters

The flexibility and speed of amphibious forces make them an ideal tool for providing humanitarian assistance and conducting NEO in the event of natural or

FIGURE 1  
Major NATO Amphibious Exercises During the Cold War



SOURCES: Lehman, 2018; Metzler, 1983, pp. 31–33; O’Ballance, 1955; “Exercise ‘Weldfast,’” 1953; Jordan, 1974; 1952 *Report of the U.S. Navy Global Operations*, 1952; “A Big Step Forward: Operation Longstep,” 1953; Smith, 1984, pp. 30–37.

NOTES: For exercises that occurred in series, national flags reflect landing forces and arrows denote locations for one specific year (Northern Wedding and Bold Guard [1982], Teamwork [1984], and Deep Furrow [1973]). Participants and locations varied considerably between iterations, but regional focus remained the same. Exercises most often involved maritime and ground forces from nations beyond those providing landing forces.

manmade disasters. U.S. marines conducted such operations in Liberia (1990), Albania (1997), Eritrea (1998), and Lebanon (2006), among others (Speller and Tuck, 2014, pp. 123–124). The Italian landing platform dock (LPD) San Marco assisted in the 1997 evacuation of foreign nationals from Tirana, Albania, during a period of civil unrest. In 2006, French, Italian, and British amphibious forces conducted NEO from Lebanon (Knowlton, 2006; “Reaching Out Beyond the Mediterranean,” 1998; “Italian Task Force Moves into Lebanon,” 2006). In 1995, as part of Operation United Shield, the San Marco and its contingent of embarked troops integrated with 2,200 U.S. marines to extract more than 6,000 peacekeepers from Somalia, a high-risk undertaking during a crisis with worldwide attention (Speller and Tuck, 2014, pp. 123, 166). In 1998, the British Royal Marines and the French 3rd Marine Infantry Parachute Regiment conducted a combined operation in Congo, posturing to execute a potential NEO from Kinshasa across the Congo River into Zaire (Speller and Tuck, 2014, p. 123). In 2010, U.S., French, Spanish, Dutch, and British amphibious ships deployed to Haiti for relief operations following a catastrophic earthquake, reflecting similar missions throughout the 1990s and 2000s (European Commission, 2010; DiOrio, 2016, p. 41; Scott, 2011).

### Participating in Combined Joint Operations

In addition to providing rapid-response options during humanitarian emergencies, allied amphibious capabilities in the post–Cold War period assisted in conventional campaigns, stability operations, and maritime security missions.

U.S. and some allied amphibious forces that worked together in coalition operations during this period benefited from NATO interoperability. The 1991 Gulf War saw the largest amphibious task force since the Korean War conduct an amphibious demonstration off the coast of Kuwait. This elaborate feint deceived Iraqi forces, and up to a quarter of the Iraqi Army prepared for an amphibious assault that never came (Alexander and Bartlett, 1995, pp. 160–166). In 2002, U.S. Navy Task Force-58—a composite command of two Amphibious Ready Groups (ARGs) and Marine Expeditionary Units (MEUs) led by then–Brigadier General James Mattis—launched a heliborne assault from the Arabian Sea into Afghanistan to destroy Taliban and Al-Qaeda elements and set the conditions for the arrival of follow-on forces (Spooner, 2016). At the outset of Operation Iraqi Freedom in 2003, under British leadership, a combined UK-U.S. force conducted an amphibious operation involving surface, heliborne, and overland assaults to seize the oil infrastructure in southern Iraq and capture the port of Umm Qasr.

NATO’s amphibious forces also participated in the 2011 Libyan intervention, both outside the allied command structure and under the NATO flag as the campaign transitioned from a multinational coalition to an Alliance operation (Gertler, 2011). The initial U.S. involvement began as NEO executed by Sixth Fleet and the 26th MEU acting in support of the State Department that evacuated more than 1,100 displaced Egyptian citizens and supported joint humanitarian relief operations (Kidwell, 2015, p. 116). During combat operations, the French landing helicopter dock (LHD) *Tonnerre* and British landing platform helicopter *Ocean* launched ground attack helicopters to protect civilians, while the Italian landing ship helicopter assault

*Garibaldi* helped enforce an arms embargo and no-fly zone (Jennings and Rosamond, 2011; Rosamond, 2011).

Starting in the early 2000s, marines frequently served in nonamphibious roles, most prominently the ground-centric counterterrorism and counterinsurgency campaigns in the Middle East, Southwest Asia, and to a lesser extent the Sahel. The use of amphibious forces in these conflicts speaks to their versatility in that they were successfully leveraged as ground forces in irregular warfare campaigns. However, this also led to a deemphasis of their maritime identity and contributed to the atrophy of the amphibious warfare discipline within NATO, a trend that persisted until a resurgent and aggressive Russia galvanized the Alliance into regaining its competencies for collective defense.

### Historical Implications for Ongoing and Future Developments

Although the current security environment and the Cold War and post-Cold War periods differ significantly, important lessons can be gleaned from the past evolution and employment of NATO's amphibious capabilities. Alliance amphibious capabilities during the Cold War matured as a result of clear strategic guidance, a coherent operational approach, and the political commitment to resource training. Cold War amphibious exercises were firmly grounded in realistic scenarios and, beyond their immediate training value, served an important strategic messaging purpose. Historical accounts suggest that these exercises had a significant effect on Soviet perceptions of NATO's operational capabilities and political will. Apart from capability development and training oriented toward the Soviet threat, NATO's maritime nations also repeatedly

leveraged amphibious capabilities to address security challenges across the full spectrum of conflict during and after the Cold War.<sup>5</sup> Today, the changing security environment presents another opportunity for NATO to consider how it can leverage its amphibious capabilities, individually and collectively, to support crisis management, enhance deterrence, and strengthen defense.

## The Present

Amphibious operations are among the most-complex areas of warfare, require highly specialized troops and equipment, and can entail severe risk. Yet in the face of post-Cold War force drawdowns and fiscal austerity measures after the 2008 Great Recession, the United States and European governments nevertheless maintained and modernized their amphibious capabilities and tried to limit divestments. More recently, NATO began to develop collective structures to enable the integration of amphibious forces at the Alliance level for more-demanding, larger-scale operations.

## National Capabilities and Recent Employment

### France

France's national security is centered on the notion of maintaining strategic autonomy, or the capability to "decide and act alone to defend its interests" (Republic of France, 2017). Although this type of self-reliance is emphasized, the French view participation in security partnerships as essential when their interests overlap with other

actors. Within this context, France's amphibious capability is driven by the requirement to provide security and disaster response for overseas territories and the ambition to project power in and around Europe, mainly for counterterrorism and stability operations but also as part of a larger conventional campaign.

French amphibious forces have served five roles in recent years. First, France deploys amphibious forces to conduct disaster relief missions, such as the 2017 response to a hurricane in its Caribbean territories, and NEO, such as the extraction of its citizens from Yemen in 2015.<sup>6</sup> Second, French amphibious ships serve as command platforms for maritime-centric operations, notably for French Task Force 473 during NATO's Operation Unified Protector in Libya in 2011 (Rosamond, 2011). Third, the French Navy uses a variety of platforms, including amphibious ships, to demonstrate military presence and conduct partnership activities in regions of strategic importance, including in the Pacific, Atlantic, and Indian oceans (French Navy Information and Public Relations Department, 2017). Fourth, amphibious ships can support missions ashore, such as the transport of forces and equipment to West Africa during the 2014 campaign in Mali (Shurkin, 2014, pp. 13, 36). Finally, French marine-qualified soldiers have frequently participated in ground-centric counterterrorism and security force assistance missions (IHS Markit, 2019a).<sup>7</sup>

The French Navy possesses three *Mistral*-class LHD ships commissioned since 2002. France's single aircraft carrier (CV), the *Charles de Gaulle*, trains with the LHDs to provide fixed-wing naval aviation, a necessity for amphibious operations in contested environments. French landing forces reside within the Army's 9th Marine

Infantry Brigade and 6th Light Armour Brigade, providing the equivalent of six marine infantry or armored infantry battalions along with marine artillery and engineer units. Ample command and control (C2), medical, and logistical facilities aboard the LHDs, modern landing craft, a high quantity of armored vehicles, and attack helicopters contribute to this amphibious force's utility across a wide variety of operations.

## Italy

Italy is a maritime nation with an interest in fostering a stable Mediterranean region. Rome advocates a greater prioritization of the southern flank within NATO and has pressed its European partners to develop multinational solutions for threats to the south. Such operations as NATO's Sea Guardian and the European Union's Sophia focused on maritime security in the Mediterranean Sea. Amphibious forces have frequently deployed for land operations in Iraq, Afghanistan, and, more recently, Libya. The migrant crisis that began in 2015 has forced the Italian Navy and Coast Guard into an exceptionally high operational tempo supporting complex humanitarian missions. The Italian Navy also leans heavily on its amphibious forces for maritime security and law enforcement operations.

The bulk of Italy's amphibious capability is concentrated in the Navy's San Marco Brigade, and the Army maintains a contingent of landing forces known as the Lagunari Regiment. Italy's amphibious forces center on one *Cavour*-class CV, four L-class ships, and landing forces in the navy and army.<sup>8</sup> The *Cavour* operates fixed-wing aircraft and can also function as an amphibious platform with a well deck. Italy's older landing ship helicopter assault, the

*Garibaldi*, will be decommissioned and replaced in 2022 with a new, more capable and F-35-carrying *Trieste*-class LHD.<sup>8</sup> Italy's three heavily utilized LPD ships are reaching the end of their service lives and might be decommissioned as early as 2022 without replacements. Planned procurement of seven multipurpose offshore patrol vessels from 2021 to 2026 might mitigate the loss of the LPDs (IHS Markit, 2019b).

### The Netherlands

The Netherlands is a small nation with multicontinental security concerns (Netherlands Ministry of Defence, 2018). The need to defend or support distant sovereign territory creates the requirement for the type of rapid-response capability that amphibious forces offer. Dutch naval vessels have contributed to maritime security missions in the Baltics, Mediterranean, and beyond. The Netherlands has sent amphibious forces and deployed marines aboard Dutch merchant ships to protect them from piracy in the Gulf of Aden and Indian Ocean (IHS Markit, 2019c). Closer to home, the Netherlands participated in Operations Sea Guardian and Sophia. At the same time, the Royal Netherlands Navy has a renewed interest in contributing to NATO's maritime posture in the North Atlantic. Dutch participation in multinational exercises, such as BALTOPS and Bold Alligator, has routinely included one or more amphibious ships. For the 2018 Trident Juncture exercise, the Dutch sent two amphibious ships and a contingent of embarked marines to rehearse high-end maritime warfare skills alongside their U.S. and European allies.

Dutch amphibious ships offer the sort of modern capability that resides in only a few navies. Dutch marines embark on the navy's two LPDs and a joint logistic support

ship that was commissioned in 2015 and incorporates capabilities like those of a landing ship dock (LSD). The Royal Netherlands Marine Corps (RNLMC) consists of two Marine Combat Groups—each resembling the organization of a combined arms battalion—with an additional company-sized element permanently assigned to the Caribbean. The RNLMC emphasizes training in harsh environments, such as the Arctic, and has trained in the north of Norway since the Cold War (Smith, 1984).

### Spain

Spain maintains an amphibious capability to project power both regionally and globally: Its power-projection capabilities are driven by concerns over international terrorism and threats resulting from weak governance in Africa and the Middle East (Government of Spain, 2017, pp. 9–10). In May 2018, for example, the Spanish Navy deployed an amphibious ship to the Persian Gulf for operations in Iraq (IHS Markit, 2019d). Spain also uses its amphibious forces for cooperative security and stability operations, particularly in the Gulf of Guinea (IHS Markit, 2013). Madrid has routinely deployed its naval forces for Operations Sea Guardian and Sophia, and Spanish amphibious forces also participate in NATO and multinational exercises, including BALTOPS in 2019, although budgetary issues make it difficult to regularly deploy for large-scale exercises.

Spain's amphibious forces are made up of two LPDs and its *Juan Carlos I*-class LHD. The LHD, commissioned in 2010, is Spain's largest warship and serves in a CV-like role. The Spanish Marine Corps comprises three elements: the Marine Infantry Brigade for power projection, the Protection Force for security at naval bases, and a Naval Special Warfare force for direct action and other

specialized capabilities (Mejía, 2017). Spain's amphibious forces are supported by Spanish naval aviation, which operates fixed-wing aircraft and multirole helicopters.

## United Kingdom

The UK maintains a global security perspective rooted in its historic engagements and enduring ties to Commonwealth countries, although in recent years its focus has been on combating violent extremism and deterring Russia. In line with British security interests, the UK's maritime forces are concentrated in the North Atlantic and Middle East regions, with occasional Pacific and South Atlantic deployments. The UK sees amphibious forces as a key means for projecting power across long distances, and missions range from crisis management to amphibious assault as part of a broader conventional campaign. The Royal Marines have been central to the UK's military operations for the past two decades, from small-scale contingencies to major combat, including numerous deployments to Iraq and Afghanistan.

UK amphibious forces include two *Albion*-class LPDs that provide heavy amphibious lift and three *Bay*-class LSDs (auxiliary) (LSD-As; IHS Markit, 2019e). The UK will also operate two F-35-carrying *Queen Elizabeth*-class CVs, which can be configured to carry landing forces in a littoral strike role, although the absence of a well deck will limit their effectiveness as amphibious platforms. UK amphibious capabilities have atrophied over the past decade as a result of budget and modernization decisions (Defence Committee, House of Commons, 2018). The landing platform helicopter HMS *Ocean* was decommissioned in 2018. One LPD was placed into extended readiness, leaving only one available for operations, and the UK's LSD-As

experienced readiness challenges because of high operational demands (Defence Committee, House of Commons, 2018).

The UK's amphibious landing force consists of the UK Royal Marines 3 Commando Brigade, made up of three battalion-sized elements (also called "commandos"), two of which are configured for the amphibious assault mission. Marines in these units are trained in mountain and cold-weather warfare (IHS Markit, 2019e). The brigade has organic artillery and engineers (sourced from the British Army), logistics, and information warfare capabilities. Amphibious forces rely on the UK's Joint Helicopter Command—made up of air force and navy equipment and personnel—for rotary wing support (Musto, 2014). The Royal Marines are addressing future operational challenges as they pursue their Future Commando Force initiative and implement the new Littoral Strike concept, returning to their roots as a lean force of highly specialized raiders (Ebbutt, 2019).

## United States

For the first decade of the 21st century, U.S. defense strategy was focused on counterterrorism and long-term stabilization missions, and the USMC was primarily employed as a ground combat force in Iraq and Afghanistan. The 2012 Defense Strategic Guidance shifted priorities to challenges in the Asia-Pacific, and the 2018 National Defense Strategy refocused strategy on deterring near-peer competitors in response to increasing Chinese and Russian assertiveness and military capabilities. Today, marines are reemphasizing their role as a component of a naval force for high-end maritime warfare (Berger, 2019).

The core of U.S. amphibious capabilities most relevant to NATO are the U.S. Navy Expeditionary Strike Group-Two (ESG-2) and II Marine Expeditionary Force, both stationed on the U.S. East Coast. ESG-2 has three amphibious squadrons, each with three L-class ships that deploy together as an ARG with an embarked MEU. The MEU is a complete combined arms force, with a ground combat element built around a reinforced infantry battalion; a mixed fixed wing, tilt-rotor, and helicopter squadron; and a logistics support element. The ARG/MEU quick reaction force is used for humanitarian relief, peacekeeping, and stability operations. The Marine Expeditionary Brigade is a larger force optimized for amphibious assaults and other large-scale operations. U.S. Navy and Marine Corps amphibious forces from the U.S. East Coast routinely transit, operate, and exercise in Europe. These forces also play a significant role in NATO and multilateral exercises, most recently in Trident Juncture 2018 and BALTOPS 2019.

## National Contingency Force Capabilities and Response Times

If pressed by a national, European, or NATO emergency, each non-U.S. NATO amphibious nation could generate a small amphibious task group centered on an LHD or LPD to project at least a small, battalion-sized landing force within about a week, we estimate. For a collective defense scenario in Europe, each nation could assemble an amphibious task force with two to four L-class ships and a brigade or brigade-minus landing force within 30–60 days. Each national force deploying for multinational operations could offer the ability to command at least one amphibious task group from its command-configured LHD or LPD, or a

CV. All nations possess highly professional landing forces, but most have limited numbers of supporting aircraft, artillery, and armored vehicles. Europe's amphibious forces would rely on a variety of allied (principally U.S.) enabling capabilities, such as intelligence, surveillance, and reconnaissance (ISR); targeting; fires; and aviation in a collective defense scenario.

The United States could generate an ARG/MEU within about a week or a Marine Expeditionary Brigade-sized task force of six to nine amphibious ships with a regimental-sized landing force within about a month. ESG-2 and II Marine Expeditionary Force timelines will be influenced by the time it takes to retask, recall, and/or assemble units. U.S. amphibious forces in support of NATO would bring organic airpower, including modern strike fighters and attack helicopters, and light vehicles with some heavy armor for ground maneuver. In a conflict, U.S. forces would benefit from allied expertise and knowledge of the operating environment and terrain and would depend on them for specialized capabilities, such as mine countermeasures.

## Integrated Amphibious Capabilities

### Bilateral and Multinational Constructs

A degree of amphibious integration exists among NATO allies, within and outside the Alliance. The UKNLAF is an example of a bilateral connection. Created in 1973, it offers a fully integrated brigade-level force for operations across the spectrum of conflict (Germanovich et al., 2019, pp. 42–43). Since the late 1990s, Spain and Italy have maintained a combined Spanish Italian Amphibious Force/Spanish Italian Landing Force, providing a bilateral

amphibious package to NATO, the European Union, or a UN-sanctioned coalition (Spanish Ministry of Defense, 2013). The forces rely on high levels of interoperability gained through routine bilateral training, compatibility of systems and equipment, exchange and liaison officers, and a history of operating together.

Multinational structures include the UK-led Joint Expeditionary Force (JEF), whose partners are located in the Nordic and Baltic regions and can generate a rapid multinational intervention capability primarily oriented on NATO's north and east (Reynolds, 2019). The UK's core contribution to the JEF is the 16 Air Assault Brigade and 3 Commando Brigade, although other nations can plug into the construct with any relevant forces in a state of high readiness. The JEF's amphibious capabilities depend principally on UK and Dutch capabilities, which would most likely represent the most ready and flexible maneuver elements within this coalition framework.

### Alliance-Level Constructs

Within NATO, only Naval Striking and Support Forces NATO (NSF) in Lisbon, Portugal, has an operational mission with an explicit amphibious component: the integration of U.S. naval forces under NATO command.<sup>9</sup> Among NATO's most capable ready forces, the Very High Readiness Joint Task Force does not include an amphibious element despite the fact that amphibious forces exist primarily as immediate responders and are kept at very high readiness. The NATO Response Force and other constructs and plans similarly miss an opportunity to take full advantage of existing capabilities provided by allies' amphibious forces.

The lack of amphibious forces in NATO's structures and response constructs stands in contrast with most other capabilities. Within the broader maritime domain, for example, NATO's Allied Maritime Command oversees subordinate commands for individual warfighting areas (submarine, surface, and maritime air), and standing NATO maritime and mine countermeasures groups provide a persistent naval presence for NATO's Supreme Allied Commander, Europe.

## The Future

Over seven decades, NATO's ability to adapt to an evolving threat landscape has arguably been its greatest strength. Since the 2014 Ukraine crisis, the Alliance has bolstered efforts on deterrence and defense while continuing to execute stability and crisis management operations. The new NATO Military Strategy codifies the two primary threats facing allies: Russia and international terrorist groups. Since finalizing the strategy in 2019, NATO's military bodies have detailed the goals, approaches, and resources required to address both threats (NATO, 2020). Although the details remain outside public view, the imperative to deter Russia and address international terrorism provides a point of departure for assessing how NATO's amphibious capabilities could support the Alliance's ongoing transformation, following their Cold War heritage and more-recent contributions.

## Integration of Amphibious Forces into NATO Planning and Operations

As noted previously, amphibious forces remain an underutilized capability in NATO. There is an apparent lack of coherence between the Alliance possessing amphibious capabilities and incorporating them into its plans and processes. While several factors inhibit NATO's full utilization of amphibious capabilities, perhaps foremost is the absence of a clear understanding of the contribution they can make to achieve Alliance objectives and of the ways they can be more fully integrated into Alliance force generation and employment.

In 2019, NATO leaders began to address this gap by reexamining how amphibious forces could be more widely incorporated into the Alliance's defense planning, operational capabilities, and deterrent posture. Leaders raised awareness of the Alliance's amphibious forces through a variety of formal and informal mechanisms, including a major symposium on amphibious capabilities at NATO headquarters in February 2020 (NATO Media Center, 2020). Although the Alliance does not publicize the details of its evolving plans, its amphibious state members have begun to revitalize their thinking and training for larger, conventional conflicts and to test concepts for employing these forces at the brigade and multi-brigade level (see, for example, Hooker and Meyer, 2019; Willett, 2019).

Additionally, the increase in size and scope of recent NATO amphibious exercises reflects a reorientation toward building the Alliance's collective amphibious capabilities. Trident Juncture 2018, the largest NATO exercise conducted in more than a decade, featured combined amphibious forces from the United States, the UK, and the

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# Amphibious forces remain an underutilized capability in NATO.

Netherlands, among others (Snow, 2018). BALTOPS 2019, an annual iteration of a multinational naval exercise that has occurred since 1977, reflected a considerable growth in scale: The newly reestablished U.S. Second Fleet served in a combined task force headquarters role, while U.S., UK, Spanish, Dutch, and Polish marines exercised as two multinational amphibious task groups that in aggregate approached brigade strength (Koerner, 2019).

## Future Amphibious Capabilities

Leaders from NATO states with amphibious forces recognize that current and future threats demand innovative approaches to amphibious operations. The development by U.S. adversaries of long-range, precision-strike weapons that can engage naval and air forces at great distances (commonly referred to as anti-access/area denial capabilities) have made traditional amphibious warfare doctrine increasingly difficult to execute (Kaushal and Watling, 2019, pp. 16–21; Berger, 2020). In recognition of the evolving threat, the current generation of amphibious practitioners long ago discarded the concept of a World War II–style frontal assault across a heavily defended beach and are committed to developing tactics and capabilities to ensure the relevance of amphibious forces even against a

high-end threat. To that end, U.S., UK, and Dutch amphibious forces are developing new amphibious operations concepts, including the U.S. Expeditionary Advanced Base Operations, the UK's Littoral Strike, and the Dutch Future Littoral Operational Concept (Ebbutt, 2019; Berger, 2019, p. 13).

Although the full direction of future development remains a work in progress, several promising ideas to enhance the contribution of amphibious forces are emerging, including

- more emphasis on amphibious raids and demonstrations
- dispersed and disaggregated operations by amphibious forces to complicate an enemy's ISR and targeting (Commander, Expeditionary Strike Group Two, 2019, p. 2)
- preemptive occupation or seizure of key maritime terrain to facilitate access for friendly maritime forces, while contributing to sea control and sea denial (Kaushal and Watling, 2019, pp. 43–48; Berger, 2019; Cantrill and Meyer, 2018, pp. 255–257)
- leveraging amphibious forces to enhance ISR and information operations, including electronic warfare and deception
- expanded employment of unmanned systems to extend the range and effect of amphibious forces (Save the Royal Navy, 2019).

The aggressive pursuit of new operating concepts to address the changing realities of multi-domain warfare will provide new opportunities to employ amphibious forces and give NATO commanders a powerful capability, including in the opening phases of a major campaign. Given the

presence of extensive strategic littoral and maritime terrain across the continent and the availability of many capable, maritime-oriented allies and partners, these new operating concepts might be equally or even better suited for the European theater than the Indo-Pacific region for which some of them are being developed (Berger, 2020, p. 10).

## The Continuing Relevance of Amphibious Forces Across the Spectrum of Operations

Even as NATO leaders focus on evolving their amphibious forces to address emerging threats, it is important that they sustain the demonstrated value of these capabilities for baseline activities and crisis response. These forces currently maintain a high operational tempo, conducting capability training, participating in exercises, and supporting national objectives through deployments and participation in current operations. Turkey's expansion of its amphibious force, the UK's formation of Littoral Strike Forces, and Italy's plans to procure versatile offshore patrol vessels capable of carrying contingents of marines indicate that NATO nations recognize this requirement (Rosamond, 2019; Jones, 2019).

The continuing contribution of these measures should not be underestimated. A visible and aggressive amphibious exercise program advances alliance objectives by improving key military capabilities, reassuring alliance members and partners, and demonstrating military strength to potential adversaries. As noted previously, NATO's amphibious forces have been extensively employed to respond to a variety of crises. Most of these efforts have been national or multinational rather than part of an Alliance response, but it is possible to envision efforts

conducted under a NATO operational construct. For such contingencies, amphibious forces at the brigade and multi-brigade levels that can be quickly combined under an integrated NATO command structure would provide the Alliance with a flexible and rapid-response capability beyond what currently exists. The ability to operate as a NATO element demonstrates political commitment and offers practical military advantages, such as prioritizing efforts, making efficient use of assets, and deconflicting among what could otherwise be disparate individual national forces.

### Advancing NATO's Amphibious Capabilities

In the course of our research, we identified three primary lines of effort that should be pursued to advance NATO's amphibious capabilities. First, the Alliance should develop a comprehensive concept paper that articulates the value, capability, and principles for employing its amphibious capabilities. By providing foundational clarity on how amphibious capabilities can enhance defense and deterrence, the Alliance would better communicate the value of amphibious capabilities at the political and strategic levels. A concept paper would enhance policymakers' understanding of the utility of amphibious forces, the basic concepts and constructs for employing them, and the capacity and limitations of the current forces available to the Alliance.

Second, the Alliance should continue to evolve its brigade and multi-brigade capabilities. Refining C2 and continuing to exercise amphibious capabilities at scale are important for building collective capacity and for demonstrating that capacity to partners and adversaries.

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It is important that NATO members with amphibious capabilities collaboratively explore new concepts and promising technologies, such as long-range precision fires and unmanned systems.

Exercises should focus on improving C2, interoperability, and operational agility. Recent exercises provide a good foundation, but NATO should develop a common training and exercise agenda aimed at improving multi-brigade task force proficiency.

Finally, it is important that NATO members with amphibious capabilities collaboratively explore new concepts and promising technologies, such as long-range precision fires and unmanned systems. Although most of this will be predicated on leveraging national efforts, it is important that the Alliance expressly commit to supporting them. If nations adopt new concepts single-handedly, they might enhance their individual amphibious forces—but, in so doing, they also might complicate the integration and interoperability of a collective NATO amphibious force. A NATO-wide effort could focus on

promoting the exchange of concepts, making Alliance elements (such as Centers of Excellence) available to assist with concept development, and incorporating into NATO exercises experiments that assess new capabilities.

## Areas for Future Research

As NATO continues to mature its amphibious forces, several areas would benefit from additional research. First, testing the application of current and future amphibious concepts and capabilities through wargaming, modeling, and simulation would provide NATO with greater insight

to guide investments in the structure and equipment of future amphibious forces and their actual employment. Next, a more detailed examination of multinational interoperability could help identify capabilities that would most benefit from increased emphasis on combined operations and areas where there would be only a marginal gain in return for the effort or resources required. Finally, although there is ample inferential evidence that demonstrations of amphibious capabilities in Europe have a deterrent effect, an in-depth study using gaming and emulation methods could validate and identify ways to maximize the deterrent value of amphibious forces.

## Notes

<sup>1</sup>Turkey's brigade-level amphibious assault capability is expected in the early 2020s. Several allied navies, including those of Belgium, Germany, Greece, and Portugal, possess smaller amphibious forces. A few others have coastal, riverine, or special operations-focused forces with limited amphibious capabilities.

<sup>2</sup>Indeed, as stated in the 2018 Brussels Summit Declaration approved by heads of state and government, the Alliance as a whole has recognized the need to regenerate collective amphibious warfighting capabilities: "We are reinforcing our maritime posture . . . . Through an enhanced exercise programme, we will reinvigorate our collective maritime warfighting skills in key areas, including anti-submarine warfare, *amphibious operations*, and protection of sea lines of communications." NATO, 2018, para. 19 (emphasis added).

<sup>3</sup>We use the term *High North* to indicate the Arctic region and nearby water and land.

<sup>4</sup>For example, Exercise Longstep in 1952 featured a 3,000-strong combined landing force along Turkey's west coast. Weldfast (1953) saw 100,000 Italian, Greek, Turkish, British, and U.S. forces landing on Crete, and Deep Furrow (1973) included 3,000 U.S. marines and 1,200 UK Royal Marines assaulting an area near Thrace on Greek and Turkish territory. "A Big Step Forward: Operation Longstep," 1953, pp. 20–23; Lehman, 2018, p. 27; O'Ballance, 1955; "Exercise 'Weldfast,'" 1953, p. 517; Jordan 1974, p. 65.

<sup>5</sup>The Falklands conflict in 1982 between the UK and Argentina represents what is likely the most famous example of national employment of amphibious forces.

<sup>6</sup>Staff discussions with representatives of allied militaries, Washington, D.C., December 2018.

<sup>7</sup>Staff discussions with representatives of allied militaries, Washington, D.C., December 2018, and London, September 2019.

<sup>8</sup>Staff discussions with representatives of allied militaries, Washington, D.C., December 2018.

<sup>9</sup>SFN operates based on a memorandum of understanding with the United States as lead nation. The commander of U.S. Sixth Fleet in Naples, Italy, also serves as SFN's commander. Unlike the other elements discussed in this paragraph, SFN resides outside the formal NATO Command Structure.

## References

1952 *Report of the U.S. Navy Global Operations*, Periscope Film, 1952, via YouTube, uploaded November 30, 2017. As of August 21, 2020: <https://www.youtube.com/watch?v=9vE2fNgwi8g>

"A Big Step Forward: Operation Longstep," *All Hands*, January 1953, pp. 20–23.

Alexander, Joseph H., and Merrill L. Bartlett, *Sea Soldiers in the Cold War: Amphibious Warfare, 1945–1991*, Annapolis, Md.: Naval Institute Press, 1995.

Allard, Dean C., "Strategic Views of the U.S. Navy and NATO on the Northern Flank, 1917–1991," *Northern Mariner*, Vol. 11, No. 1, January 2001, pp. 11–24.

Allport, Rowan, *Fire and Ice: A New Maritime Strategy for NATO's Northern Flank*, London: Human Security Centre, 2018.

Berger, David H., *Commandant's Planning Guidance: 38th Commandant of the Marine Corps*, Washington, D.C.: U.S. Marine Corps, June 2019.

———, "The Case for Change: Meeting the Principal Challenges Facing the Corps," *Marine Corps Gazette*, June 2020, pp. 8–12.

Cantrill, Richard, and Eystein Lockwood Meyer, "The JEF as a Force Multiplier: The Example of Joint Amphibious Response in the Nordic-Baltic Theatre," in Rob Johnson and Janne Haaland Matlary, eds., *The United Kingdom's Defence After Brexit*, New York: Springer, 2018, pp. 245–261.

Central Intelligence Agency, *Soviet Perceptions of U.S. Naval Strategy*, Langley, Va., 1986.

Chernavin, Vladimir Nikolayevich, "Chernavin Responds," *Proceedings*, Vol. 115, No. 2, February 1989.

Commander, Expeditionary Strike Group Two, "Exercise Baltic Operations 2019 After Action Report," October 2019.

Defence Committee, House of Commons, *Sunset for the Royal Marines? The Royal Marines and UK Amphibious Capability*, London, February 4, 2018.

DiOrio, David R., "Operation Unified Response—The 2010 Haiti Earthquake," *Joint Forces Staff College Campaigning*, Fall 2016.

Ebbutt, Giles, "Corps Values: Future Commando Force Strategy Takes Royal Marines Back to Their Roots," *Jane's Navy International*, June 5, 2019.

European Commission, "Factsheet Haiti Earthquake," Brussels, March 15, 2010.

“Exercise ‘Weldfast,’” *Flight Global*, October 9, 1953.

French Navy Information and Public Relations Department,  
“Amphibious Task Force: Jeanne D’Arc, 2017,” *Marine Nationale*, 2017.

Germanovich, Gene, J.D. Williams, Stacie L. Pettyjohn, David A. Shlapak, Anthony Adler, and Bradley Martin, *NATO’s Amphibious Forces: Command and Control of a Multibrigade Alliance Task Force*, Santa Monica, Calif.: RAND Corporation, RR-2928-USMC, 2019. As of August 19, 2020:  
[https://www.rand.org/pubs/research\\_reports/RR2928.html](https://www.rand.org/pubs/research_reports/RR2928.html)

Gertler, Jeremiah, *Operation Odyssey Dawn (Libya): Background and Issues for Congress*, Washington, D.C.: Congressional Research Service, March 30, 2011.

Government of Spain, *National Security Strategy 2017*, Madrid, December 2017.

Grove, Eric, and Geoffrey Till, “Anglo-American Maritime Strategy in the Era of Massive Retaliation, 1945-60,” in John B. Hattendorf and Robert S. Jordan, eds., *Maritime Strategy and Balance of Power: Britain and America in the Twentieth Century*, New York: St. Martin’s Press, 1989.

Hooker, Justin, and Michael S. Meyer, “NATO Needs a Multinational Amphibious Task Force,” *Proceedings*, Vol. 145, No. 10, October 2019.

IHS Markit, “Spanish Navy Faces Continuing Cuts, but Exercise Demonstrates Range of Maritime Security Risks,” July 4, 2013.

———, “France—Navy,” *Jane’s World Navies*, online database, January 4, 2019a.

———, “Italy—Navy,” *Jane’s World Navies*, online database, February 27, 2019b.

———, “Netherlands—Navy,” *Jane’s World Navies*, online database, February 27, 2019c.

———, “Spain—Navy,” *Jane’s World Navies*, online database, February 27, 2019d.

———, “United Kingdom—Navy,” *Jane’s World Navies*, online database, February 27, 2019e.

“Italian Task Force Moves into Lebanon,” *Jane’s Navy International*, September 4, 2006.

Jennings, Gareth, and Jon Rosamond, “Helicopter Gunships Launch Raids on Libya,” *Jane’s Navy International*, June 7, 2011.

Jones, Henry, “Gavin Williamson Lays Out Defence Plans for a ‘Global Britain,’” *UK Defence Journal*, February 11, 2019.

Jordan, Bob, “Deep Furrow ’73,” *Leatherneck*, Vol. 57, No. 1, January 1974, pp. 56–57, 65.

Kaushal, Sidarth, and Jack Watling, *Requirements for the UK’s Amphibious Forces in the Future Operating Environment*, London, UK: Royal United Services Institute for Defence and Security Studies, November 2019.

Kidwell, Deborah C., “The U.S. Experience: Operational,” in Karl P. Mueller, ed., *Precision and Purpose: Airpower in the Libyan Civil War*, Santa Monica, Calif.: RAND Corporation, RR-676-AF, 2015. As of September 10, 2020:  
[https://www.rand.org/pubs/research\\_reports/RR676.html](https://www.rand.org/pubs/research_reports/RR676.html)

Knowlton, Brian, “Large Scale Evacuations from Lebanon Begin,” *New York Times*, July 19, 2006.

Koerner, Peter, “2nd MEB Marines Return to Europe to Support BALTOPS 19,” U.S. Marine Corps, June 12, 2019.

Lehman, John, *Oceans Ventured: Winning the Cold War at Sea*, New York: W.W. Norton, 2018.

Mahnken, Thomas G., “Forward Presence in the Modern Navy: From the Cold War to a Future Tailored Force,” Washington, D.C.: Naval History and Heritage Command, August 16, 2017.

Marine Corps University, “Historical Overview of U.S. Marines in the Mediterranean,” undated.

Mejía, Aurora, “Spain’s Contribution to Euro-Atlantic Security,” Madrid: Elcano Royal Institute for International Studies, July 20, 2017.

Melhuish, Chris, *Snapping the Chalk Line: 1980’s NATO Maritime C2*, U.S. Fleet Forces Command White Paper, May 2, 2017.

Metzler, John, “Armed Forces Exercise Report: ‘Northern Wedding’ ‘Bold Guard,’” *Armed Forces*, Allan Limited and the Royal United Services Institute for Defence Studies, January 1983.

Mustin, H. C., “The Role of the Navy and Marines in the Norwegian Sea,” *Naval War College Review*, Vol. 39, No. 2, 1986, pp. 2–6.

Musto, E. C., *The Fighting Instructions BRd 4487*, Vol. 2.2: *Amphibious Warfare*, 1st ed., Fareham, United Kingdom: Royal Navy, 2014.

NATO—See North Atlantic Treaty Organization.

NATO Media Center, “Maritime Commander Joined by NATO Amphibious Leaders,” press release, Brussels, February 20, 2020.

Netherlands Ministry of Defence, *2018 Defence White Paper: Investing in Our People, Capabilities, and Visibility*, The Hague, 2018.

North Atlantic Treaty Organization, “Brussels Summit Declaration,” press release, July 11, 2018.

———, “The NATO Chiefs of Defence Hold First Virtual Meeting in NATO Military Committee History,” press release, Brussels, May 14, 2020.

O’Ballance, E., “The Turkish Contribution,” *Military Review*, Vol. 35, No. 5, August 1955.

President’s Foreign Intelligence Advisory Board, *The Soviet “War Scare,”* Washington, D.C., February 15, 1990.

“Reaching Out Beyond the Mediterranean,” *Jane’s Navy International*, March 1, 1998.

Republic of France, *Defence and National Security Strategic Review*, Paris, 2017.

Reynolds, David, “Shaping the Future: The UK’s Joint Expeditionary Force,” *Jane’s Defense Weekly*, February 19, 2019.

Rosamond, Jon, “Europe Takes the Strain on ‘Operation Unified Protector,’” *Jane’s Navy International*, July 1, 2011.

———, “Royal Marines Embrace Littoral Strike and Prepare to Forward Deploy,” USNI News, September 11, 2019.

Save the Royal Navy, “Exploring Innovative Future Concepts for the Royal Marines,” August 26, 2019.

Scott, Richard, “Sweating the Asset: Versatility Is the Key to LSD (A) Multi-Tasking,” *Jane’s International Defence Review*, August 3, 2011.

Shurkin, Michael, *France’s War in Mali: Lessons for an Expeditionary Army*, Santa Monica, Calif.: RAND Corporation, RR-770-A, 2014. As of August 19, 2020:  
[https://www.rand.org/pubs/research\\_reports/RR770.html](https://www.rand.org/pubs/research_reports/RR770.html)

Smith, Norman H., “Arctic Maneuvers 1984,” *Marine Corps Gazette*, Vol. 68, No. 12, December 1984.

Snow, Shawn, “Marines Are on Sweden’s Coast Preparing for Largest NATO Exercise as Russia Grumbles,” *Marine Corps Times*, September 4, 2018.

Spanish Ministry of Defense, “Spain Assumes Command of the Spanish-Italian Amphibious Force (SIAF),” Madrid, July 31, 2013.

Speller, Ian, and Christopher Tuck, *Amphibious Warfare: Strategy and Tactics from Gallipoli to Iraq*, London: Amber Books, 2014.

Spooner, Damian L., *Decision Points: A Case Study of Naval Expeditionary Task Force 58*, Newport, R.I.: U.S. Naval War College, May 5, 2016.

Thurman, R., “NATO Exercises,” *Leatherneck*, Vol. 61, No. 12, 1978, pp. 34–37.

Willett, Lee, “US Second Fleet to Reach IOC As It Prepares for ‘BALTOPS’ Command,” *Jane’s Navy International*, May 27, 2019.

Wood, Robert S., “Maritime-Air Operations in the North: American Perspectives,” in Geoffrey Till, ed., *Britain and NATO’s Northern Flank*, New York: St. Martin’s Press, 1988.

## About This Perspective

This Perspective draws from RAND Corporation research conducted in 2017–2020. In one research strand, RAND designed and facilitated a series of wargames and seminars on behalf of a forum that convened U.S. and European general and flag officers to discuss opportunities to improve the interoperability, command and control, and use of amphibious forces within the North Atlantic Treaty Organization (NATO). In the forum—initially known as the Amphibious Leaders Expeditionary Symposium (ALES) and later as the NATO ALES (NALES)—allied maritime and amphibious leaders explored how to leverage the Alliance’s existing amphibious capacity by aggregating national capabilities under a coherent command structure.

That research was documented in Gene Germanovich, J.D. Williams, Stacie L. Pettyjohn, David A. Shlapak, Anthony Adler, and Bradley Martin, *NATO’s Amphibious Forces: Command and Control of a Multibrigade Alliance Task Force*, Santa Monica, Calif.: RAND Corporation, RR-2928-USMC, 2019 ([www.rand.org/t/RR2928](http://www.rand.org/t/RR2928)).

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